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Mountain Plains Distance Learning Partnership

STARS Seamless Technology for Access by Rural Schools

Star Schools Project

Evaluation Report 1997-1998 December, 1998

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This is the final report on the Mountain Plains Distance Learning Partnership evaluation for the 1997-1998 grant year which was the first year of a five year Star Schools Grant from the United States Department of Education. The grant will run from 1997 to 2002.

The following procedures have been established and/or conducted as part of the evaluation.

Methods of Evaluation

The evaluation was conducted using a variety of methods. The full evaluation research design appears in Appendix A.

The evaluator conducted two site surveys for a total of six days. The evaluator attended Partnership Board meetings on two occasions which were held in Riverton, WY.

Focus interviews were held in person and through audio conference with staff, administration, instructors, the STARS Board of Directors, and other stakeholders. Full transcripts of interviews appear in Appendix B.

Other evaluation activities included participation in the monthly Star Schools Evaluators audio conference calls and in the bi-annual Star Schools Directors and Evaluators Meetings in Washington, D.C.

Project Description

The Mountain-Plains Distance Learning Partnership—STARS Project — is creating an electronic virtual campus to serve Wyoming, Colorado, Utah, and Montana. This is a vast, geographic area which is largely rural. STARS is an acronym for “Seamless Technology for Access by Rural Schools.”

The project was designed to employ a variety of technologies to enhance two specific activities: telecommunications infrastructure; and instructional programming. When completed the system will provide live interactive full motion two-way audio and visual capabilities using fully scaleable high speed digital ATM microwave technology. Distance sites will feature electronic classrooms with both receiving and transmitting capabilities.

Curriculum development is to be facilitated through the establishment of electronic multimedia instructional programming centers. These centers will provide teachers with state-of-the-art technology, along with staff support, to design and produce interactive multimedia presentations to enhance the delivery of courses to remote communities. Curricula will include core subjects for K-12 and adults with an emphasis on reading, math, and literacy.

The project provides comprehensive inservice professional development for instructors. Components include professional development for instructors in the use of technology for curriculum development and in techniques for effective course delivery via telecommunications.

Administrators are to be provided professional development in their role and responsibilities in distance education.

Students are to receive training to guide their adjustment to a new system for enhancing their access to expanded opportunities.

The Mountain Plains Distance Learning Partnership STARS project is based on a clear vision of the Four Pillars articulated by President Clinton in 1996. It

called for broadening educational technology objectives to include not only hardware and connectivity, but also digital content and professional development. The benefits of technology in education can be attained when all four pillars of education and technology are present and integrated into the classroom.

While many federally funded projects are focused on the continuing use of programming in schools where technology is already installed, this was not the case with the STARS project. It is focused on all four pillars at the same time.

The Four Pillars of education and technology calls for the following components to be in place for a successful adoption:

Hardware: All teachers and students will have modern multimedia computers in their classroom.

Connectivity: Every classroom will be connected to the information superhighway.

Content: Effective software and online learning resources can increase students' learning opportunities.

Professional Development: All teachers will have the training and support they need to help students learn using computers and the information superhighway.

Hardware and Connectivity

The STARS project is providing connectivity for video and Internet. It has been deeply involved in building a full statewide infrastructure microwave system to carry its educational programming. However, the bid process for this system was delayed by the governor of the state of Wyoming due to a pending proposal to install a Wyoming statewide system by U S West. The STARS project had no option but to comply with the state requirement that they not release the RFP.

Initially, this delayed the start of the project by several months. Infrastructure and classroom installation of equipment were delayed. Bids were finally received by April 10, 1998. Outside consultants were contracted to review all four responses. It was determined that two of the responses were out of compliance. These included U S West and Alcatel. The two vendors which did comply with the RFP were WTCI and Harris/Farinon.

Other meetings had already been held to resolve compatibility issues with the Central Wyoming College (CWC) and the state system. Dr. JoAnne McFarland, CWC president met with the governor of Wyoming James Geringer, on May 11, 1998, to discuss telecommunication transport. In this meeting, the governor gave his endorsement for the transport plan. He indicated he would work with CWC to prepare a media release which would focus on the complementary nature of the transport delivery system. The release would make it clear that the STARS project would enhance and strengthen the state technology plan.

An emergency meeting of the Mountain-Plains Executive Committee was scheduled on May 12, 1998 to review the proposals. One of the prime considerations in the installation was the lateness in the season to begin construction. The two remaining vendors felt that to meet deadlines, they would need to get all of the construction done at once instead of in phases. Vendors felt that could have the schools running in December, 1998 including the partnership schools if they received approval to begin construction by May 15, 1998.

Both vendors ensured that they would provide continued services once the grant was complete and extend that through a ten year period.

Another consideration was the ability to switch to new technologies if they became available after the system was installed which is a possibility. Initially, the bandwidth will be eight T-1 lines available to all of the schools. During at least the first eight years of the contract, there would be absolutely no charge to the schools. There are to be no hourly or monthly charges, no line charges, no maintenance charges. It is to be a free distribution system to the schools.

The schools are responsible for the cost of acquiring the video classroom equipment, providing an on-site facilitator, and some technical support. The STARS project has agreed to utilize the data services through the state system. It will be up to the individual schools to contact and contract with an Internet service provider (ISP).

The proposal from WTCI was accepted pending approval by the U.S. Department of Education to adjust the budget to accommodate the cost and reallocation of funds. It was also recommended that the STARS project could contract with WTCI to provide cable services to the cable subscribers using the access channels in each of the TCI systems. When final contract negotiations began, WTCI voiced problems with certain aspects of the contract. Ultimately, the contract was offered and accepted by Harris/Farinon. At the writing of this report, they have fulfilled all aspects of their contract and will complete the installation by December 30, 1998.

The successful conclusion of this installation process was based on a number of project people struggling to find a win-win situation for the benefactors of the STARS project. It is unfortunate that an elected official can prevent an underserved group from receiving the benefits of a federal grant that would provide equitable access in an otherwise unserved rural area. It is to the great credit of the project's administrators that this was worked out; however, they should not have been faced with a problem of this type, nor should the project have been prevented from its progress by the state.

The entire Mountain Plains Distance Learning Partnership STARS Project has been delayed from four to six months in its various components because of delay imposed by the state.

It should also be noted that delays in equipment installation and purchase are typical of technology grants where infrastructure must first be installed. In the

first two rounds of Star Schools Projects (1988 and 1990), it was also common for problems to be encountered which contributed to the delay of the courses eventually being offered. Very little is different with this project even though it is ten years later. No other infrastructure is in place which could carry the courses. Wiring buildings and other work must be done in much the same way that it was done ten years ago.

RECOMMENDATION: It is strongly recommended that a clause be put into future U.S. Department of Education requests for bid that all states have their chief telecommunication officer agree that the state will not prevent the proposal process from proceeding, nor the subsequent installation of systems that traverse the state if the proposal is funded. The chief telecommunications officers currently signs off on Star Schools proposals, but this statement should be added so that recipients of Star Schools funding operate with a clear mandate and legal authority.

STARS Site Identification

STARS project staff conducted visits to each school district in the target areas to formally introduce the STARS program. This functioned as a needs assessment for the district in curriculum and distance learning needs, as well as identification of existing telecommunication infrastructure. The information

gathered during the visits was used to assist in planning for the design and scope in building system-wide capacity.

A total of 28 sites in remote communities were identified as possible locations for development of classrooms to receive educational programming. Eleven of the sites have already been developed and are receiving classes through resources other than the current Star Schools project funds. Four new sites were identified as ideal for initial development. These were in Riverton, WY; Lander WY; St. Stephens, WY; and Fort Washkie, WY. These four sites were selected for development in 1997-1998. The remaining 17 sites will be part of the future development.

Classrooms and Classroom Equipment

A second RFP was developed for classroom equipment which would bring the programming into the classroom over the state-wide transport system. The RFP was mailed to 200 vendors, 50 submitted letters of intent to bid, but only nine bids were received. Of these only three were in compliance. A bid was accepted for the installation of the control hub from CEAVCO Audio-Visual, Inc.

The hub design is modular and can accommodate a variety of technologies linking distant sites including analog or digital telephone, analog or digital microwave, satellite, fiber optic, MPEG-2 digital and H.320. It can easily be expanded to approximately double that capacity for future linkages with additional schools.

This control hub will link all Wyoming schools in a multipoint conferencing system. The system will allow two-way, fully interactive live course delivery as well as video on demand. Schools will be able to receive courses at any time from a video storage/server system.

It will also include a new fully integrated wired classroom that will tie into the control hub and an existing wired classroom.

The hub/control center was completed in August and was fully operational to tape classes for future use in the fall of 1998. As soon as the telecommunications transport system is in place, the hub will be able to link to schools as quickly as the classrooms equipment installations are completed.

The hub was built to initially accommodate up to 20 sites with six simultaneous conferences and/or video classes on demand. According to staff, It can easily be expanded to approximately double that capacity for future linkages with additional schools.

As of the writing of this report, the hub/central control is completed with the exception of small items that still need to be tested.

Distance Learning Classrooms: The Mountain Plains Distance Learning Partnership has been involved in the construction of six classrooms which are equipped for distance delivery of course content. The schools which are all located in Wyoming, are as follows:

Central Wyoming College - completed

St. Stephen's Indian School – complete by December 15, 1998

Fort Washakie Elementary School – complete by December 15, 1998

Lander Valley High School – completed after January 1, 1999

Riverton High School – completed after January 1, 1999

Wyoming Indian High School – completed after January 1, 1999

Areas and classrooms within the schools were selected based on convenience, ease of installation, size, and other considerations. Remodeling was underway at all of the sites to accommodate the needs of distance delivered classes. It was originally anticipated that construction would be complete at all six sites by Fall 1998. During the site visits, the installation process was in various stages at each of the sites but each was moving to completion.

Interconnection of Schools: A high-speed, high bandwidth, digital microwave system will link all Wyoming Partnership schools. The classrooms at the Central Wyoming College are complete. The two classrooms at Fort Washakie and St. Stephens will be completed by December 15, 1998, and should be part of the system test beginning about December 15, 1998. The system is to be complete according to the contract with the vendor, by December 30, 1998. The classrooms at Lander, WY and Riverton, WY will be completed after January 1, 1999.

State-to-State Connections: The connections to Utah and Colorado are still scheduled to occur in the third year of the grant. The hub/control center is ready

at this time to accept those connections. The connection to Montana is scheduled for the fourth year of the grant. In the fourth year of the grant all four states involved in the project will be connected.

Evaluation of Classrooms: The STARS project has designed a strong state-of-the-art system that is flexible in its ability to utilize a number of technologies over the transport system. The project will not be tied to existing technologies but will be able to utilize new technologies as they are perfected. The classrooms have good lines of sight for viewers, incorporate an excellent sound system that is user friendly, and feature instructor control consoles that are easy to use. Technicians can also control the system and assist the instructor from a small control room.

Mountain Plains Focus Sites - In-Depth Evaluation Sites

A selection procedure for in-depth evaluation sites for the coming three years will be put into place over the summer of 1999. The selection guidelines are shown in Table 1 and have been accepted by the Partnership.

Table 1: Evaluation Focus Site Requirements

Name:	STARS Sites
Selection	<ul style="list-style-type: none">• Self Selection• At least one site per partner• Urban, Suburban or Rural setting
Duration	The school agrees to serve as a Mountain Plains STARS Focus site through June 2002. Sites will be actively participating as soon as the system is installed and classes are routinely offered at the site.
Contact with Evaluator	<ul style="list-style-type: none">• Evaluation questionnaires will be provided and filled out entirely by teachers.• Focus interviews at the site or by audio conference will be conducted by the evaluator with the teacher and principle.• The evaluation sites agree to be available for site visits during which the evaluator may interview administrators, teachers, students and parents.
Programs	<ul style="list-style-type: none">• Use all courses provided by Mountain Plains for the age level at the school. All modules of all courses will be used along with the materials developed for the courses.• If any programs are missed due to reception failure or other scheduled school event, the school will obtain tapes of the missed programs and use them for the class along with Internet access.
Duplication	The school agrees to provide a duplicating budget that allows the teacher to produce all the necessary student worksheets. Worksheets will be produced as black line masters. Spirit duplication will not be used.
Reception	Receive programs live or via tape during the same week of airing
Viewing	Students view their program in their own classroom and not in a general resource room used by other students.

Internet	Students will use Internet to access materials through a computer located in the classroom (computer lab access is not sufficient) The teacher actively uses Internet as part of the class participation in the program.
Telephone	Have access to a telephone in the classroom during times when the program is received live and call-ins to the origination site are encouraged. Actively attempt to place calls to the origination site.
Other Program Enhancements	No other content source will be used except the textbook adopted for use by the school district. For example, other science demonstrations would not be used that are contained in science modules not provided by Mountain Plains. Using other enhancements is a confounding variable that would destroy the validity of the research for that classroom.
Technology	The school will maintain a minimum level of technology and use it as part of the project so that it can be evaluated. Malfunctioning equipment including satellite dishes and computers will be repaired immediately so that students will be able to complete all programs in a timely fashion.
Criterion Referenced Testing	If the state or district uses criterion referenced testing, access to scores for students will be provided to the evaluator
Professional Development	Teachers will view all professional development programs provided by Mountain Plains for the course.
Principle	<ul style="list-style-type: none"> • The principle agrees to hold a meeting with students, their parents (or guardians), and teachers to go over the school's expectations from using the program, the improvements that have been made to accompany the program, the nature of the evaluation, and to answer any parent questions. • The principle agrees to hold monthly meetings with all project teachers to keep informed about successes and problems.
New Courses	<ul style="list-style-type: none"> • If Mountain Plains adds new courses during the course of the remainder of the grant, the site agrees to use the new programming without dropping the use of other project programming. • All the technology provided by the project will be used by the evaluation site. For example – video, multimedia, and internet would all be used by the classroom.

Student Identification

Efforts were delayed to identify students by grade level that fell into the targeted group, fixing a figure on the total number of adult learners (teachers, administrators, and other school personnel), the setting a number for business, government and community agencies which might utilize the distance education facilities for training and conferences.

Reasons for the delay included the time it took to hire personnel, and the extreme demands placed on the existing staff to prepare the specifications for the system for the request for proposal. More time was consumed working with Governor Garinger to ensure compatibility with the proposed state-wide network.

During January 1998, meetings were held with superintendents, principals, and counselors to identify students populations within the target groups.

Recommendation: Because the needs of students and sponsoring organizations change constantly, identification of target audiences should be an on-going process. The cycle of need identification, course creation, advertising, enrollment can take up to a year given the available funding. An on-going effort in this area will also keep involved all vested and interested stakeholders in the educational process. Educators will be better able to respond quickly to community needs.

Student Longitudinal Study

Meetings were held with the Mountain Plains staff to begin the process of planning how to track students after classes begin in the Fall of 1999. The first learning impact evidence will not be available until the end of the fall semester. The intent is to determine how being a Mountain Plains student will impact the student's learning and progress in the future.

The process includes the following:

1. Identification of teachers and classrooms where Mountain Plains programs will be used for several years.
2. Identification of teachers who may have used a distance learning project before 1997.
3. Identification of classes where the Mountain Plains program is the only supplementary program or enhancement to the curriculum in its content area
4. Identification of benchmarks which indicate success in the future for a former Mountain Plains student
5. Identification of future benchmarks suitable for Mountain Plains programs that a student would exhibit in the future.
6. Identification of students who are likely to stay in the district and not move away
7. Gain the parents permission for the student to participate
8. Gain district approval

9. Identification and enrollment of approximately 1,000 students who meet the above requirements and others which may be identified.

Faculty Professional Development and In-Service

The Partnership provided specialized teacher training in AuthorWare and Adam for use in the science curricula. Three teachers attended a summer institute in August to receive training.

Teachers in the Colorado service area received in-service during the fall to assist them in curriculum development and distance delivery techniques.

Technical training opportunities were also provided for K-14 teachers. These in-service workshops provided training for approximately 110 school personnel.

A course in Adobe Photoshop I was offered for one credit in Cortez, CO. The course was designed to give teachers the tools necessary to teach Adobe Photoshop to students for use as part of the visual/graphic art curriculum and for use in the development of pages for the Internet.

Mountain Plains Classroom Technology Training Courses

A number of courses were specifically developed for classroom teachers to help K-12 teachers with integration of technology into their curricula and classroom work through the use of a data base, creation of computer presentations, and research resources. These classroom technology training classes included programs such as Access, Windows 95, MicroSoft,

PowerPoint, MicroSoft Word, MicroSoft Excel, Encarta Encyclopedia, Magic

School Bus Software, Computer Assisted Instruction, and Internet.

Table 2 shows a list of the courses which were offered during the Summer of 1998 and Table 3 shows the courses offered in the Fall of 1998.

Table 2: Classroom Technology Training Courses; Summer 1998

Site	Instructor	Course & Start Date
SC	Bruce Roehrkasse	2100-SD Basic Win 95 6/1/98
CWC	Terry Svilar	2110-SC Intermediate PowerPoint 6/1/98
Lander	Kathy Klouda	2105-LA Intermediate Win 95 6/1/98
CWC	Terry Svilar	2103-SA Basic Access 6/1/98
CWC	Terry Svilar	2101-SA Basic Word 6/1/98
CWC	Margaret Peart	2106-SA Intermediate Word 6/1/98
SC	Bruce Roehrkasse	2100-SA Basic Win 95 6/1/98
SC	Bruce Roehrkasse	2100-SB Basic Win 95 6/1/98
SC	Bruce Roehrkasse	2105-SD Intermediate Win 95 6/15/98
CWC	Margaret Peart	2106-SC Intermediate Word 6/15/98
CWC	Terry Svilar	2102-SB Basic Excel 6/15/98
CWC	Margaret Peart	2107-SC Intermediate Excel 6/15/98
CWC	Terry Svilar	2101-SB Basic Word 6/2/98
CWC	Bruce Roehrkasse	1515-30 Internet 6/2/98
CWC	Terry Svilar	2110-SB Intermediate PowerPoint 6/22/98
SC	Bruce Roehrkasse	2100-SC Basic Win 95 6/22/98
SC	Bruce Roehrkasse	2105-SE Intermediate Win 95 6/22/98
Lander	Darlene Hallam	2112-LA Rain Forest 6/8/98
Lander	Kathy Klouda	2102-LA Basic Excel 6/8/98
SC	Bruce Roehrkasse	2105-SB Intermediate Win 95 6/8/98
CWC	Terry Svilar	2108-SA Intermediate Access 6/8/98
CWC	Terry Svilar	2102-SA Basic Excel 6/8/98
CWC	Margaret Peart	2107-SA Intermediate Excel 6/8/98
SC	Bruce Roehrkasse	2105-SA Intermediate Win 95 6/8/98
Lander	Darlene Hallam	2111-LA ENCARTA 98 6/8/98
Jackson	Segerstrom	ITEC1200-JA CAI for Teachers 8/13/98

Table 3: Classroom Technology Training Courses; Fall 1998

Site	Instructor	Course & Start Date	
Lander		Basic Excel	9/9/98
Lander	Kathy Klouda	Word	9/9/98
Lander		Intermediate PowerPoint	9/10/98
CWC	Bruce Roehrkasse	Internet	9/10/98
CWC	Terry Svilar	Intermediate Word	10/3/98
CWC	Bruce Roehrkasse	Basic Word	10/6/98
CWC	Beth G.	Intermediate PowerPoint	10/6/98
CWC	Bruce Roehrkasse	Intermediate Win95	10/7/98
CWC	Beth G.	Intermediate Word	10/7/98
Lander		Basic Word	10/22/98
CWC	Bruce Roehrkasse	Internet	10/22/94
CWC	Bruce Roehrkasse	Intermediate. Win95	10/24/98
CWC	Terry Svilar	Intermediate PowerPoint	10/31/98
CWC	Bruce Roehrkasse.	Intermediate Win95	11/9/98
CWC	Bruce Roehrkasse	Basic Excel	11/10/98
CWC	Terry Svilar	Intermediate Excel	11/11/98
CWC	Terry Svilar	Intermediate Access	11/21/98

Curriculum Development

During the period of time when the equipment and transport systems were going out for bid, acceptance and installation, teachers were asked to submit proposals to teach courses on the new system. Proposals were received from the teachers and a number of them agreed to redesign their courses during 1997-1998. The Partnership approved 27 projects for curriculum re-design (about 25 percent more than was originally proposed). Teachers report that they are anxious to begin to teach on the new system.

Courses that were approved during the first round of proposals included the following:

Art: CWC, Design: 2D, focuses on the creation of a video of the course for distance learning.

Internet and Computer Essentials: Shoshoni, WY, focuses on "Internet & PC Essentials" to give students the fundamental knowledge needed to succeed using Internet technology as a tool. The course is designed for delivery from CD-ROM, Intranet, Extranet, and/or the Internet.

Human Anatomy: CWC, ZOO 2015, focuses on using video tapes and PowerPoint presentations, and microscopy with the instructor. The course is designed for delivery from CD-Rom and exams will be computer based.

Allied Health on Internet and Tape: CWC, 13 courses will be re-designed using PowerPoint, video, audio, and other components.

Student Produced Web Site: Shoshoni, WY, how to create a web site delivered via WWW.

Web Resource Site: Montezuma-Cortez School, CO, provides a comprehensive overview of the Ute Mountain Ute Tribe which will include streaming video interview sessions, chat sessions.

School-to-Work: San Juan School, UT, for students interested in farming and livestock production that will include a year-round production process for the learner. It includes simulations of farming for one complete crop cycle, raising livestock including the birth of a calf, applied math, science, reading, and critical skills, simulated work plans for fence repair, farm land preparation, soil

conservation, branding,, pasture rotation, BLM and Forest permits and other items.

Pathophysiology: College of Eastern Utah, Blanding UT, to develop the course and offer it as it is not available elsewhere via distance learning.

Curriculum for Science: Lyman Middle School, Blanding UT, will develop a curriculum for science that will focus on the concepts that are addressed in the Stanford Achievement Test for eighth graders.

Reading: College of Eastern Utah, to provide parent/child activities to reinforce reading in the home, to provide a program of pre-reading and beginning reading skills training to better prepare at-risk children in grades Pre-K-2; and to provide easy ready, material and activities for the adult learner with limited reading skills.

National Science Standards: Fort Washakie, WY, creation of the seventh grade science curriculum based on the Fort Washakie School Science Performance Standards that include the National Science Standards.

Native American Cultural Awareness: Cortez, CO, to create a multicultural video product which emphasizes cross cultural awareness between minority cultures, especially Native American tribes, and the majority Anglo culture.

Courses should be offered beginning Fall 1999: The courses include a selection of courses ranging from nursing, English, Spanish, science, agriculture and Native American Literature. The instructors are from CWC, Shoshoni, WY,

Ft. Washakie, WY, Thermopolis, WY, Colorado and Utah. Table 4 shows a listing of sites, instructors and courses.

Table 4: Redesigned Courses 1997-1998

Site	Instructor Name/Title	Course
CWC	Vicki Ferris Asst. Professor of Nursing	NRST 1110 Mental health & Illness
CWC	Lita Burns Asst. Professor of Nursing	NRST 1120 Medical Surgical Nursing I
CWC	Jane Rogalski Assoc. Professor of Nursing	NRST 1000 Fundamentals of Nursing
CWC	Billie Dutcher Professor of Nursing	NRST 1000 Fundamental of Nursing
CWC	Billie Dutcher Professor of Nursing	NRST1680 Pharmacology I
CWC	Willis Patterson Professor of Art	Art 1110 Design 2D
CWC	Princess Killebrew English Instructor	Engl 0610 Fundamentals of Composition
CWC	Marilu Duncan Instructor of Spanish	Span 1010 Spanish I
CWC	Nancy Larson, Assoc. Professor of Biology/Chemistry/PE	Zoo 2015 Human Anatomy
CWC	Deanna Dye Instructor of Physical Therapy	Clinical Assist. Training
CWC	Jan McCoy Division Chair of Allied Health	NRST 1050 The Older Adult
CWC	Jan McCoy Division Chair of Allied Health	NRST 1400 LPN Transitions
CWC	Dean Kendall Surgical Technology Instructgor	NRST1600 Surgical Tech Orientation to Surgical Tech)
CWC	Roger Melton Professor of Mathematics	Real World Math
Shoshoni, WY	Tony Olson Technology Coordinator	Internet & PC Essentials
Ft. Washakie, WY	Scott Hemingway Science Teacher	7 th Grade National Science
Ft. Washakie, WY	Jeff Bradley Technology Coordinator	8 th Grade National Science
Thermopolis, WY	Troy Young Spanish Teacher	Intro Spanish Lanugage
Colorado	Alice Wise Adult Basic Education Grant Writer	Multicultural Video
Colorado	Geri Sanders-Klein Technology Coordinator	Unit 1 Ute
Utah	Jared Brown	Complete Library Serv.

	Technology Coordinator	
Utah	Virgil Caldwell Small Business Coordinator/Teacher	Complete Library Serv.
Utah	Joseph Barton Elementary School Teacher	Farm and Ranch

Utah	Carol Barton Special Ed & Adult Ed.	Reading
Utah	Monty Lee Science Teacher	Science
Utah	Pamela Decker Nursing Instructor	PATH I
Utah	Robert McPherson History Teacher	Native American Literature

Thus far, the Partnership has produced about 90 hours of finished video and has assisted instructors with the development of CD-ROM based course materials. Primarily these materials are for nursing and allied health courses. While the courses have been taped, they could not be delivered via distance because the system is still being installed. However, the video tapes and CD-ROMs will be using beginning in the Fall of 1999. This gives the instructors an unexpected chance to improve their delivery skills and hone their media development skills

Another request for proposals for course design will be mailed out during the Fall of 1998. However, the Partnership has a backlog of twenty-two applications. Many of these were submitted during the first year, but were received too late for completion before the end of the grant year.

Additional meetings were held with superintendents, principals and representatives of Partnership schools in Cortez and Pueblo, CO, as well as with other Utah EdNet partners at the University of Utah in Salt Lake city , and superintendents and principals of partner schools in Wyoming. Staff also met

with the College of Great Falls a to coordinate potential distance learning courses.

Teacher Concerns

Interviews with teachers revealed that there are situations developing that can be alleviated by further planning and implementation. Adult students who are returning to school need instruction on the requirements of a distance learning program and the options that are available to them. Most returning students have never experienced facilitation in the classroom and are not prepared to deal with it in the distance classroom.

Seminars are scheduled for the Spring of 1999 for the teacher/facilitator to help teachers understand their new role in a distance classroom, the new needs that they will see in students, and how to provide support for students in distance delivered classes.

RECOMMENDATION: It is recommended that a general introductory seminar be created for all types of distance learning students which covers the following content:

- The technology that is being used in the program
- The skills that they will need to use the technology
- Equipment (office or home) to access the courses
- Their learning styles and multiple intelligences and how to find resources to meet those preferences

- Becoming a self-directed and independent learner.
- Support services that are available for students including tapes, proctors, books, libraries, mailing, faxing and computer access to resources and personnel including their instructor
- Ongoing support to meet student needs as they arise during the course.

Teachers also need support services as they move into preparing and teaching distance learning courses. They should not be the entire support system for the student in making arrangements for reviewing tapes, grading papers, providing proctoring services. Teachers need to have the same type of support services for students as they receive for traditional classes. In fact, research has shown that teachers and students need more support services and tend to need them around the clock, in order for students to be successful in the program.

Administration

Because of the vast distances between the systems and service areas, it was agreed by the partners that each state would need its own series of committees to provide guidance in assessing needs for instructional programming.

Utah and Wyoming have each established four committees:

Public Education Committee

Postsecondary Committee

Adult Education Committee

Bilingual/Cultural Committee

Colorado has initially established an Instructional Programming Committee which it may expand in the future.

Montana has not set a committee structure.

1999-2000 Survey Instruments

Based upon the new programs and procedures put into place for the Mountain Plains Project as a result of the equipment installation, a survey will be designed to determine the level of use of the programming, the level of use of the distributed learning component established on the Internet, and to determine what procedures work well and where corrections might need to be made. The instrument will guide participants through the adoption and implementation stages that will occur at the sites.

OERI Performance Indicators: A number of OERI performance indicators will be included in the 1999-2000 Mountain Plains survey instruments. The Mountain Plains evaluation will collect as many indicators as possible in order to ensure compliance with this OERI request.

Conclusions:

The project was seriously delayed by the state's efforts to work with U S West. The delays were not caused by the project and the staff worked diligently to move the RFP process forward with the state. Other aspects of the project went forward, but because courses could not be delivered, students did not participate in classes.

Appendix A

Evaluation Design

**Mountain Plains Distance Learning Partnership
Five-Year Evaluation
October 1, 1997 - September 30, 2002**

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Project Goals

Goal 1 Demographics

Reach underserved learners of all ages throughout the target area at a minimum

- 1a. Identify and work with at least 24 sites
- 1b. Enroll at least 3,000 students of all ages in distance learning classes

Performance Indicators:

3. To what extent were 24 sites with 3,000 students of all ages enrolled in distance learning classes?

Goal 2 Instructional Design and Educational Goals

Expand instruction in core subject areas, literacy and vocational education

- 2a. Develop 160 courses for distance learning which use multimedia
- 2b. Educational institutions will integrate technology into the curriculum
- 2c. Improve student achievement due to integration of technology

Performance Indicators:

5. To what extent were 160 distance learning classes developed?
6. To what extent did the educational institution integration of technology into the curriculum actually improve student achievement.
7. Was the integration of technology the only significant variable; what were others?

Goal 3 Professional Development for Instructors

Provide professional development for instructors that will be sustained over a period of time

- 3a. All distance learning instructors will participate in training
- 3b. Teachers will have an 80 percent continuation rate after training
- 3c. Teacher productivity will increase as a result of training
- 3d. Student learning will Improve as a result of professional development
- 3e. All target schools will remain active in the use of distance learning

Performance Indicators:

9. To what extent did all teachers participate and complete training.
10. To what extent did teachers participate after training
11. To what extent did teacher productivity increase which is directly attributable to the training
12. To what extent did student learning improve as a result of professional development
13. To what extent was distance learning used to provide staff development in other areas
14. After training, to what extent did teachers move through the stages of adoption
15. of technology according to the Concerns Based Adoption Model (CBAM)

Goal 4 Adoption of Technology

Employ a variety of electronic technologies and tools for distance education.

- 4a. A distance learning telecommunications system will be built to serve 24 sites.
- 4b. The system will use a variety of technologies
- 4c. The system will establish 4 origination studios and 24 electronic classrooms
- 4d. The system will establish 3 electronic faculty assistance labs for multimedia curriculum development

Performance Indicators:

- To what extent were the 24 sites connected to the telecommunications system
- To what extent did the system use a variety of technologies/tools
- To what extent were 4 origination studios and 24 electronic classrooms built in a timely manner and used easily by teachers and students
- To what extent were 3 electronic faculty assistance labs established, staffed, and used by faculty to develop courses for the system.
- What was the frequency of use and satisfaction with the labs by faculty

- To what extent did student learning improve because of multimedia materials.
- To what extent did technology provide courses to students which would otherwise not have been available to them
- To what extent did the project provide equitable access to content for underserved populations

Goal 5 Foster Partnerships and Collaboration

The project will foster partnerships in at least four states.

- 5a. The project will establish the Mountain-Plains Distance Learning Partnership which will be lead by an Executive Council of CEOs or their designees

Performance Indicators:

- To what extent did the partnership continue to foster collaboration over the years of the project
- To what extent did the partnership benefit its members in four states
- To what extent did the use of technology foster and enable collaboration

Goal 6 Improve the Cost-Benefit Ratio

The project will demonstrate an improved cost-benefit ratio

- 5a. The project will demonstrate a favorable cost-benefit ratio due to the use of distance learning strategies

Performance Indicators:

- To what extent did the project demonstrate an improved cost-benefit ratio
- To what extent was a model developed that could be used to ensure other groups of a return on investment from distance learning or an improved cost-benefit ratio
- To what extent can this model be replicated by other areas
- To what extent did the improved cost-benefit ratio encourage others who were not originally partners to participate in the partnership
- Were cost-savings so sufficient that the project was institutionalized after the fifth and final funding year

Part 1: Purposes of the Evaluation

The purposes of the five-year evaluation of the Mountain-Plains Distance Learning Partnership are to:

1. Document the implementation of the project, in terms of participants, activities, accomplishments, and impact

2. Determine to what extent the project has met its goals and objectives
3. Determine to what extent the project has been integrated with other projects and services to leverage the resources and effectiveness of each
4. Document and evaluate components of the project which are unique to this Star Schools Project
5. Collect data required by the Star Schools evaluation criteria set by OERI, U.S. Department of Education

Part 2: Questions to be Answered by the Evaluation

This evaluation is designed to answer the following questions:

1. Were tasks completed, with successful results and adequate resources?
2. Were the objectives reached; if not, why not; were they realistic?
3. Were the goals achieved; if not, why not; were they realistic?
4. Were initial and identified program quality criteria met?
5. Have facilities been adequate?
6. Have project staff and other external personnel carried out assigned tasks according to schedule and in a satisfactory manner?
7. Has the budget been sufficient and appropriately distributed among line items?
8. What plans have been made for institutionalization and expansion?

Part 3: Program Quality Criteria

The following criteria will be used as indicators of the quality of the program:

1. Educational Gains
 - Learners demonstrate progress toward attainment of basic skills and competencies that support their educational needs
 - Learners advance in the instructional program and complete program educational requirements which allow them to continue their education or training
2. Program Planning
 - Program has a planning process that is ongoing and participatory, guided by evaluation and based on a written plan that considers community demographics
3. Curriculum and Instruction
 - Program has curriculum and instruction geared to individual student learning styles and levels of student needs
4. Staff Development
 - Program has an ongoing staff development process that considers the specific needs of its staff, offers training in the skills necessary to provide quality instruction, and includes opportunities for practice and systematic follow-up. There is evidence that the content taught in the staff development process is applied in courses taught by instructors receiving staff development
5. Support Services

- Program identifies students' needs for support services and makes services available to students directly or through referral to other educational and service agencies with which the program coordinates
6. Recruitment
 - Program successfully recruits population in the community identified in the Adult Education Act as needing literacy services
 7. Retention
 - Students remain in the program long enough to meet their educational needs

Part 4: Evaluation Plan and Activities

The evaluation plan will be conducted to meet the purposes of this evaluation and to answer the evaluation questions.

- | | |
|-----------------------------|---|
| A. Implementation Schedule: | Dates met; Reasons for delays (if any);
Goals met; Objectives met |
| B. Implementation Model: | What is the model. Identification of problems and solutions.
Did it help/hinder meeting goals; Adjustment;
Needs Analysis from target audience segments |
| C. Hiring and Personnel: | Quality of personnel; Hiring of personnel |
| D. Unique Components: | Identify, document, evaluate, compare and contrast unique aspects of this Star Schools Project |
| E. OERI Data Requirements | Establish methods to collect all data across all Star Schools Projects required by OERI, U.S. Dept. of Education |
| F. Accomplishments | |

Accomplishments - Evaluation Areas	Data Resources
Course/Curriculum Development Model for teachers What strategies used to develop courses? What strategies used to train instructors?	Documentation; Interviews; Surveys
Teacher Inservice to Teach at a Distance and to Meet Standards, Guidelines What techniques of instruction were taught; Were they beneficial? Did the teachers change their teaching methods? Were constructivist methods part of the inservice? Did teachers adopt the program and instructional	Documentation; Interviews; Surveys Review curriculum, manuals/other materials

methods?	teacher inservice
Courses: Review Courses What courses were developed? Were the curriculum development model strategies followed that were taught in inservices? Were the courses offered? What were the learning outcomes: Did students like and learn from the courses? Did the courses take full advantage of media or resort to traditional methods? Field test courses -evaluation of the evaluation design and results, and revisions?	Documentation; Interviews; Surveys; Review tapes of live transmissions; computer programs; print materials; constructivist methods utilized
Engineering Design Smooth integration path Upgradable; Expandable; Interoperable Use of multiple technologies Location of classrooms; Location of studios Design of classrooms; Design of studios Problems; Recommendations	Documentation; Interviews; Surveys Photos of installations
Coordination with Other State Networks Efficient use of existing networks Build on existing infrastructure in partner states Smooth integration of networks Smooth transition to services	Documentation; Interviews; Surveys
Teacher Training Model Define; instructors - interest, proficiency, changes Compare special populations to other populations Review of training curriculum development for adjustments-identify problems and solutions; did revisions work? Retention of teachers in training Retention of teachers in distance learning classes	Documentation; Interviews; Surveys Evidence of: staff interest; equipment proficiency; continuing use; adoption and diffusion
Student Outcomes Demographics of students - diversity and age Enrollment patterns Teacher evaluation of student outcomes Was the delivery method effective	Documentation; Interviews; Surveys Evidence of student

Does multimedia affect learning, better, worse, different Did the use of computers affect learning, better, worse, different Comparison of special populations to other populations- Title 1, American Indian	interest; equipment proficiency; content proficiency; change observed by parents
District/or Area Adoption Additional Funding Other Resources Other evidence of commitment	Documentation; Interviews; Surveys
Build the System Upgrade/expand studios Upgrade/expand sites/classrooms	Documentation; Interviews; Surveys
Strengthen curriculum and academic offerings or students in rural, geographically isolated communities in target area through use of DL strategies. <ul style="list-style-type: none"> • Plan/establish computerized curriculum development lab to enhance the preparation of quality multimedia instructional programs and materials • Plan/implement a program for training teachers in curriculum development and techniques of instruction via telecommunications through workshops, conferences and seminars. • Develop and implement instructional course offerings -160 courses/instructors • State of the art curriculum development labs at three sites 	Documentation; Interviews; Surveys

Part 5: Products of the Evaluation

Final Evaluation Design
 Identification of the Implementation Model
 Instrumentation for Measuring Participation, Accomplishments, Impact
 Cost-benefit Ratio Model
 Formative Reports
 Final Report - Year 5

Appendix B

Focus Interviews

Greg Ray
Assistant Project Director
Central Wyoming College
January, 1998

Evaluator: You also need some teachers who can do the work for the on-line curriculum development.

Greg: We can possibly on that end of things, again find through our partnership with Microsoft. We're one of 18 sites in the United States that are Microsoft certified.

I'm looking for peer to peer role models, because one of us can get up there and we don't have the same credibility as someone who's in the trenches right now doing it. If you have an English teacher talking to an English teacher or at least talking with other teachers. A science teacher talking with other teachers, perhaps including science teachers. I think it probably has more credibility than an administrator or someone who is a researcher doing it, even though what they say, even though what the researcher says, or the administrator or whatever who knows their stuff, is correct, I just think it has more credence if you have

appeared doing it. That's why I think if we model after people who are particularly successful and good at doing it, I think it would probably lend credence. Regarding the Governor and others, it's more than kind of frustrating, you can estimate how much time they spent on this already. Basically they're just throwing it all out. I guess what really rankles me is it seems like what you'd want is the lowest possible quote. If you're trying to stretch state resources and federal resources you want to get the best quotes. You say, "Hey, US West can submit a proposal like everybody else!" And if it's low bid, we take it, no problem! No question about it. But basically tells it tells, we want you to take US West regardless is tough to swallow.

Mountain Plains Star Schools Partnership

Dr. JoAnn McFarland

President

Central Wyoming College

January 1998

Evaluator: What's going on politically?

JoAnn: Let's just say, by yesterday I'd really had it. I made some phone calls to some pretty high places, that were pretty nasty. Boy, did I get results. The state has developed primarily through the State Department of Education which is K-12 by the way, an interesting set up. A developed proposal to the legislature to establish in conjunction with the statewide state educational technology plan to establish an infrastructure that will be voice data video two-way across the state. That resulted in initially a legislative appropriation of 3.7 million dollars last year, and authority to release state RFP which was evaluated by a state panel and is now in final contract negotiation stages. It's eighteen million dollars over a five-year period. US West was the successful vendor and essentially what they proposed is ATM switches at the seven community colleges and the University of Wyoming with T1's to the high school and switch 56 to the

elementary schools. It's tariff services. They get paid for installing, and still get paid forever, sweet deal. The problem comes in from the standpoint of, you probably know that I'm telling you some confidential information here. Since we're talking about contract negotiations and every document I have is stamped "confidential". Where we come in is that we've had communication with the Governor's office and with his chief information officer who is in essence, the state director of telecommunications, indicating that the Governor's endorsement of our Star Schools Project, was very troubling to him. From the standpoint of possibly duplicating some of what the state was doing and also from the standpoint of our engineering undergirding of our project based on a microwave system, that we would in fact own and operate. The Governor said, "I understand your concern for your project should the legislature not fund the larger educational technology project, but I expect your cooperation, understanding and support in our effort to move forward with the total statewide package."

I would add a third one to say what the level of service will be. The state legislature has not appropriated the money for that infrastructure. The legislature begins session February nine and concludes March fifteen. Our plan was to release our RFP for the Interconnect piece mid January so the proposals would come back to us by mid March. By that time, we would know whether or

not the legislature funded the tariff service basis infrastructure for the state and if it did, then we would purchase from US West, the enhancement additional band width etc. and proceed. We're afraid that if we don't release the RFP right now, that we would not be able to meet the time frame in our grant that says we're going to have the college and four off campus sites up and delivering courses by fall. We've been assured by the Governor's office and by the Attorney General, who's now a chatty pen pal of mine, we've been assured that in the state contract, our time frame is included and will be on a what they call, fast track. We're pushing for liquidated damages, huge penalties so that we can be assured that US West will indeed do it in a timely fashion. We've also been invited to participate in the contract negotiations. I asked Greg to go to Cheyenne Wednesday the 21st for an all day contract negotiation period. It gets extremely complicated in the sense that the Governor believes that if we release our RFP right now, that it will be the kiss of death to the state legislation. The legislature then might or selected key legislatures might conclude that our region is already covered through our grant. They can cut us out of the state plan and by good conservative people that we are, save money for the state. I've maintained that would be an ethical if not legal violation of the intent of our grant, which was never to use Federal monies to supplant state or local aide. We've been assured that the state does not intend to do that. But they're afraid that another possible conclusion would be well,

other regions can do what we've done and take care of it on our own, and why should the state even be involved. Which is kind of an easy out for the legislators who have more needs than they have money. They're also afraid from the concern from the legal aspect of having a state RFP out where a vendor has already put their best figures on the line. As soon as the contract is signed, it's all public information that other vendor's then will be able to undercut and or use that information, so that it's not truly competitive or even fair. The bottom line, the Governor has formally, per this fax with hard copy to follow, "To that end I'm asking you to hold off issuing a request for proposal on your project until February 16, 1998." In other words, he's asking us not to delay it all the way till March 15, but in fact we worked this compromise out last week in Cheyenne, I said, we'll consider that, and I will ask the Board of Directors if they will consider doing that. It's doable, it puts us in somewhat of a crunch, but it's probably a reasonable compromise position because if we are too contentious, or confrontational, every single grant we write has to go through the state, Spock. Spock is the state telecommunications director. We're between a rock and a hard place. Then in addition they're asking that we include the verbiage that indicates that an RFP for the entire state has been issued previously which includes the schools in our area and a vendor, US West which will be selected if the legislature funds the whole project, so that we're not misleading vendors. They know

that it's a long shot. The other issues that we'd concerned about is, and I discussed with the Governor's office yesterday, is that in the master contract that's currently being finalized right now, there's talk of including verbiage that would say, "this contract does not preclude any individual entity or institution from negotiating enhancements to the basic package." We're OK with that. We in fact, that's the problem we've had, is that we've been negotiating with US West for the enhancement piece and they quit working with us because they felt that it was complicating their efforts to negotiate the contract with the state. Yesterday I called the US West and I said, "Do you want to do business with us or not? You want to do business with us, you get your best rates to us for the enhancement piece today." I got them yesterday by fax. But that's somewhat of a problem too, in that the state seems to want to put any enhancement pieces as an addendum to the contract which would in essence mean what they want to do, is they want to in essence have us pay the state for the enhancement. I'm afraid that if we're in essence ordering services through the state, from US West but through the state, that we will then have to jockey with the state for access and use of our own system. It isn't another aspect that I want to ensure is written very clearly into the contract but is actually what it asked Greg to do is to separate it out and push for the verbiage to say any entity can do ... Then we pay for it, we work directly with the vendor, we can holler and scream directly, "we're not getting it, we are getting it!"

Quite frankly we don't see that the basic system is much good to us because of that reason. It's real limited. We see the enhancement piece as needing to be minimally as I set up three T1's to the high schools and at least T1's to the grade schools, and an ATM switch for us. We think that's OK, we can deal with that. We have to get, especially because we're talking about tariff services, that's a concern to us because of what happens after the grant is over. We feel that our hands are somewhat tied in terms of being able to look at any kind of delivery system. Particularly since we already own and operate a huge microwave system through public television and could in fact build onto that which is what our grant was premised on. In an effort to help us, the State Superintendent of Public Instruction called the Federal people, who ever that is and the note was, in other words, what I kept arguing with the state was we have these deadlines, and they keep saying they'll take care of that. That makes me really nervous because what I told Linda Carter and the state department yesterday, I said that doesn't give me a whole lot of assurance because our ability to accomplish everything is premised upon some very specific kinds of time frames for good reasons. They're concurrent with our semesters. We're two months late. It's a pretty major problem.

Evaluator: It's huge. It puts you in default on everything. The extension part of it, usually the money, when you can usually get a

carry over, and that's not a problem. The problem with the courses, I would be looking at plan B, you've got a microwave system, satellite up link, cable within the community, why not up link it, let TCI down link it into the cable system and deliver the courses that way.

JoAnn: In fact, that is our plan B. At least it sounds very much like Greg described. He said he thought we could agree, if you can disagree with the Governor, we could but it would not bode well for getting his help on federal legislation or future grants.

Evaluator: If this puts you in a place where you're not disagreeing, what you're able to say is look, we have put off everything that we intend to do, until you finish whatever it is you need to do. We're in total support of you, and we're going to use a backup system, and if you ever get your act together, we'll go the other route. In the meantime, you haven't spent any money. You're using an existing system.

JoAnn: What Greg was talking about is, let's say that we still want the ability to, if the state system doesn't approve, we want the ability to look at the wide estrage of options and see what will work most cost effectively. If we release the RFP in February, we'll still be able to do that. We'll be a little bit later but if we're unable to get up by July first, the five sites, Greg said he thought it would be

quite doable to utilize the satellites that will later be used for Colorado and Utah. We have to purchase them anyway. We can utilize them for our purposes to meet the needs of the grant. Then we'll proceed with the longer range in the appropriate order. We would have to buy both up link and down link dishes. The one we have here is dedicated. We can ask Greg more about that, but I think he has a handle on it. One of the big problems we have is, he concludes it by saying, we had a disagreement about this, by the way I think we do have a pretty good relationship with the Governor. I'll tell you where it gets complicated is when the college commission steps in. I've been trying to do it pretty much on our own so that it doesn't get changed through the process of communicating it. I don't need an intermediary, especially when we're talking about technical issues, and about the third iteration it is so general. He says, "In the event the legislature does not fund the state wide project, I believe there would still be sufficient time to evaluate the responses and have services implemented by your target dates of July and December." We don't think so but we have a back up plan, so we're still OK. "This office as well as the Department of Education would lend support to asking the U.S Department of Education for an extension, should that be necessary." That's where you might come in too. "Let me remind you my position has not changed in reference to private ownership of communication services." What he really means by that is not

really "private ownership" he means, our own system, he wants tariff services. He doesn't say it, but that's what he means.

Evaluator: No matter what's installed, he wants state to be able to access it and use it. Schedule on it, and deliver what ever they want to as well as anything you want to send out.

JoAnn: Exactly. I am focussed on encouraging private sector involvement rather than further expanding state owned systems. He's flat out opposed to our microwave system which we still think makes most sense technically and cost wise. Especially if the towers are already there. We'll still have to use satellite for a couple of those little jumps but it's essentially there. I argued to the Governor that his position might make sense, were there not already a system in place that's state owned. He thinks it's state owned. Actually our attorney says it's owned by us, not by the state. It was built under the auspices of Central Wyoming College at the time it was built. Operating money comes from the state but our attorney says we own it. We won't argue that unless it becomes a major issue. There's no sense waving a flag in front of the bull. Plus you're working with a 500 pound gorilla who has all the authority.

Evaluator: I think that under the circumstances, you've done every thing you can. Extensions on money are seldom a problem, so that's not the big deal.

JoAnn: Extensions though on completing activities?

Evaluator: I think that you're Plan B, being able to deliver the things that pressing other community assets into operation, use the cable company. We could probably install a couple of satellite receive dishes quickly. The cable company is a better idea, I think it's one you should pursue anyway. How many channels does the cable company got up and running right now?

JoAnn: About 40.

Evaluator: Are they talking about further expansion? A way of doing it, it's the darndist thing I've run into, Hawaii did this when they negotiated their new franchise agreements, they negotiated an agreement with TCI and it was instead of just saying one channel for government, one for education, and one for Public Education and Government, PEG access. They said, "We want 10 percent of all channels you install." Now, this is the concept that got them from one channel when we began this, to the point where they have five now, and they're eligible for eight. As you begin thinking about delivering all the needs of the community and the most

ubiquitous thing is probably going to be cable. You can have a number of channels coming in, one carrying K-6.

JoAnn: The only problem that I'm not sure cable is ubiquitous in Wyoming because, in fact we've discovered this through public television. Public television, we deliver via cable and via antenna. Because we have so many folks who do not have access to cable, out in the rural areas.

Evaluator: There might be a wireless cable, go back to the idea, talk with TCI. See what are their plans for the state and the surrounding area. There is wireless cable, they might be considering that.

JoAnn: Right, and that's the wonderful thing even though it puts a big burden on Greg. One of the reasons we pulled him right out of public television, he works closely already with the cable. He's negotiated any number of cable access issues and I think you're suggestion is a good one and we have a good person to do that. Plus he has access as well through public television to do some top notch media attorneys which is a question maybe you can answer. Is it legitimate to charge those billable hours directly related to Star Schools directly to the Star Schools grant?

Evaluator: Sure, what you could do is call Joe Wilkes and ask.

JoAnn: Here's what I said, when I was talking with Larry Stoltz, out at the Governor's office yesterday. He said, "I think what we're going to have to do," talking about an addendum to the contract relating to us, "is have your attorney meet with the A.G." I said after the phone conversation was over to Greg, "God, I would hate to send out college attorney in there." Because he's obviously not a communications attorney. He doesn't really understand, that's what Greg said, partly for the symbolic weight. Maybe we should send in our Washington D.C. attorney in there because if nothing else, he carries an enormous amount of credibility and he would know communications law a hundred times better than the A.G.

Evaluator: I would never hesitate to use another lawyer and I don't see any reason, you could always put it on your accounts, what you've spent the money for. If it's services, and somebody disagrees with it, you reimburse them but it's a direct result of doing this grant.

JoAnn: I just wondered if it would have to be funded through the administrative allowance or if it could be a direct cost. I see it as a direct cost. I've been really nasty about not touching that administrative allowance because I'm concerned about carrying the grant on after it's over.

Evaluator: Just depending on how much you end up pulling out, if it's a \$5,000.00 hit or a \$25,000.00.

JoAnn: Actually I think we have really good, because we do so much business already with this firm, they don't ding us on billable hours. I mean they're pretty good about that. Obviously we wouldn't fly them out probably. We'd probably put him on a conference call. Then we're just direct billable hours. I would imagine we could keep those to a minimum.

Evaluator: Or you could set a limit. Obviously it's coming out of grant money. I think it always helps understand it. If you're able to work with cable to deliver some of those things, I'm just hoping if you get stuck with the tariff service, because it's going to be so limited. You're only going to be able to deliver one course at a time. So now you're in a position of where you're making such major decisions, you've got maybe eight hours a day when you can put courses up and the number of courses that are coming in that people want to reconfigure and you've already go a hundred applications. It's just an awful lot to put on that one system. Now, if you put it on satellite and you deliver it to the other components of the grant, into the other states that are part of the grant, that's one way of doing it. Most of the head ends for cable companies have those satellite receive dishes. What you might end up

having to do with the head ends is to buy a satellite dish to put at the head end to receive your programming. Do it that way.

JoAnn: I think even with the tariff services I'm sure we're going to be using some satellite anyway. I don't see how we can avoid it. We worked with EMG for some of their instructional programming. It partly comes down to a cost issue. I hate to suck up that much of our money in something that's gone. We don't own it. But I just want you to know as a consultant what we're up against.

Evaluator: Keep me informed on it, I think probably Greg, has he let Wilkes know what's going on? Joe is pretty cool. He is more laid back. The real clout there is Cheryl Garnette. Cheryl ran the Star Schools Program. So she is responsible for all of the technology programs at the Department of Education. She was the team leader for Star Schools, and then was promoted a couple of months ago. Joe had been a project monitor and was promoted to team leader. He has great and long experience. He is a true federal employee though in that he just does what he has to do pretty much. Cheryl is the mover groover type of person, I'd like you to meet her sometime. You can just call her and tell her what you're doing and so forth, by that time you may have some better sense of what the problems are. You could also discuss these types of things with Cheryl. The senate has been remarkably supportive of everything we do.

- JoAnn: I think we have strong support from our senators too.
- Evaluator: As opposed to our Governor?
- JoAnn: Yes, I think a little stronger. They're all the same party.
- Evaluator: That helps. Do they know what's going on? I think you ought to include them. Under the heading of FYI, "I just wanted you to know because I'm assuming you voted for Star Schools grant and the senate has always been supportive. I think you just need to understand what's happening here and what we're being asked to do." You'll dealing under federal legislation, so they can protect you in the long run. Asking for extensions, could get you to a different place. For example, what you might end up doing depending upon how much this delays you, or if you weren't able to go to Plan B, you could do at the end of the fifth year. Add on a six month period. So maybe you stop taking as much money out of the funding now, and the trouble is five years down the line, who knows what's really going to happen? Most of the time the Star Schools office is pretty forgiving. And it usually comes under the heading of, "it's broke and we're trying to fix it, and we're doing everything we can." They're federal employees, they understand operating under CR's and the "governments out of business" and

"the governments totally screwed up today." When you start explaining, "my Governor this..." they'll get it.

JoAnn: I really feel like we're between a rock and a hard place.

Evaluator: With them you never have to say, "may I." Usually it's, "this is what's going to happen." It's not so much getting permission from them, if you got a case, then you've got a case. You've got a Governor who's inserting himself into a process that's federal, and he's absolutely inserting state rights. The feds get that, they run into it all the time. There's not too much else you can do with it. Is that your main problem? That's what's been holding up.

JoAnn: Yes, I think you have it in a nutshell. I think we should be heading down there.

Mountain Plains Star Schools Partnership

Star Schools Staff

January 1998

Staff Member: The five year grant, we're actually going to have courses long enough that there should be some actual documentation of student progress rather than just institutional. Based on our experience, just having completed the final report, the things that we really need to do is make sure you take pictures of things as we go along. Those folks may not read all that well but they will look at pictures. If we have some pictures to show, it depends on what we wind up doing as far as technology, but if we end up going microwave and we have tires up on the mountain, then let people know what it's like. A lot of people don't know what a mountain is. There were two things in the newspaper, for example, I got a call the other day. They wanted an example of an impact site of a high school student that had two concurrent enrollment classes that were delivered by Distance Learning. They used the term Distance Learning in the article, that she was the, if not the only one of the very few of the students that never received under a perfect score in a chemistry class from a certain

instructor. It went on to say that she graduated from high school with her Associate degree and had been offered a scholarship in chemistry science to the University of Utah because of the concurring enrollment in the Distance Learning classes. It gets things in the newspapers, when it comes to students. Pictures of the classrooms, some of the geography and so forth, if we do that now as we go along, and build up a file of that then we the time comes, for example, when I was doing mine we had one mountain top that nobody ever took a picture of. That's what had to be done. The other thing is we need to get a computer program set up so that we can keep track of student enrollment in Distance courses. I found it wasn't too hard with the college students, but with the public age students, when I went to get numbers and sites and so forth, they didn't keep any records. There I was at the end of three years and nobody could tell me exactly how many courses they taught, how many students had been enrolled in each course, and anything about the success of our students. If we get that set up now, then anytime we need it, it's there at the end of five years we don't have to reconstruct things and don't assume the public end is doing it. As a project, we need to get that set up so every person that, sometimes that's not all that easy at the public end because they might have a course that runs a full year. They may have one that runs a semester or they may change courses quarterly. Every time there's a course taught, we need to get set up on the computer so we have that course, the

site that it's taught at, the enrollment of each site, who the instructor was, so that we have some numbers at the end. We said we were going to enroll so many students at different levels, Title I schools and so forth, we knew that we enrolled a lot more than we said we were going to do. With the college I could have, it was all set up with our Distance Learning person and their reporter, he gave me a printout to go along. It isn't that much work, you do it each time there's an enrollment. But if you wait until the end of the year, or in five years, not only would it be hard, it would be impossible. As far as evaluations, based on experience, get organized now. Just going through some things I'm keeping files on, first, there's several sources of funding that I want to mention. Most of these you may already know. There's one here that says Technology Funding For Community Colleges. This is under the "Something Science Foundation" I believe they have a research budget of 2.5 billion dollars. They actually have more money than the President of the House.

Another Member: Lynn, is it still true that with NSF, it's very difficult to purchase equipment or has that changed at all?

Lynn: There are some of them that are specifically for equipment. One of the things with NSF is there's a 50\50 match. A lot of times people can't come up with the money.

Another Member: I realize that overall NSF has been responsible for purchase of large quantities of equipment at Universities but it seemed like when we looked at NSF grant possibilities for Community Colleges, they were rather restrictive on equipment purchases.

Lynn: It's almost impossible for a Community College to get money because they were only interested in research Universities. But there are funds now that are set aside and earmarked for Community Colleges. There are funds there and some of you folks I think it worked. Most of you probably heard about the E-rate. I assume that will happen some time at Community Colleges. The only way Community Colleges at this point can benefit from that is if they become partners with Care or Libraries. But it fits right in to Star Schools because your sites, most of them are going to be in Public Ed. facilities, even though they'll be serving Public Ed. and Private Ed. There are things there that can, like I say, I don't know whether it'll get to the point where they actually do something. They got mad at the FCC. And then there's Microsoft and Technology Trade. It's a match made in hardware, Microsoft will donate more than seven million dollars to Community Colleges for the next five years to help students pursue careers in computer science. Grants from \$200,000.00 to \$250,000.00.

Another Member: We submitted one of those.

Evaluator: When will you be notified?

Another Member: March. Probably last of February or the first of March. We submitted only the 28 month's grant for \$300,000.00 to do IT training on the reservation.

Lynn: Hytachi Foundation is making progress in technology. Their smaller grants range from \$25,000.000 to \$100,000.00. You're familiar with the Technology and Challenge grants, and there are actually two different programs there. There are the literacy grants that go with the state and then the state. The technology initially challenged grants just like the Star Schools. I'm not sure Carla, I was under the impression we were one of the first Star Schools grantee's.

Recently, Vice President Gore reported the Federal Government has thousands of surplus computers needing classrooms in the country. There's an Internet address here people can get information on it, even opportunities if the computers need to be upgraded. It may be a place to get some computers.

Evaluator: Did they talk about how old they are?

Lynn: No, it doesn't say. Do you folks here have an economic development center or anything that deals with the economic?

Female Member: The Small Business Development Center, the closest is Springs or Howell and that's a real sore subject. We don't have a small business development center here locally.

Another Member: You're actually right, we don't have one. There are a couple of opportunities that are coming up, one is to provide small business consulting and possibly a business incubator for the reservation.

Lynn: There's a program I believe the Department of Ed. would start working with the Department of Agriculture. The Department of Agriculture has lots of money for education and they have a program. It's now called Rural Economic Computer Development or something. You have an office right here. There's also a state office.

Another Member: Which office is here?

Lynn: It's the rural community economic center.

Another Member: I get the names of the office confused, is that Neville? The city just provided him with an office.

Lynn: This probably the U.S. Department of Agriculture. Most of us are retired. But that no longer exists. These are broken homes that help to promote economic development in a rural areas. They have funded so far four Indian controlled colleges. They want to support efforts.

Another Member: I wonder if that's what I am talking about.

Lynn: They're anticipating next year of funding as many as 50 colleges. Probably most community colleges, but the amount of those grants are \$200,000.00 typically. If you already have an infrastructure, you could use some things to do some technology that could help small businesses. There's a program called Environment. There's some specific criteria. There's urban and rural. The urban one's are administered under the Department of Housing and Urban Development, the rural one's are administered under the Department of Agriculture and this same office. To be a rural area, you are limited to a population of 30,000. You have to have your census tracks, you can actually have a multi-stake. You can be involved with a project with three stakes and if you serve multi-stakes, the parcels of land have to be continuous. Or you can have a single stake, in the three different geographic areas. In the census track those areas if the poverty rate is 20 percent, I don't have all the details here, a certain percent of those will have a poverty rate of up to 25 percent. Another percent can

have a poverty rate of up to 35 percent. Those are some of the criteria of whether you are eligible or not. Then it's a major program. They haven't had a competition since 1994, and in the last competition the rural empowerment zone received 40 million dollars. Enterprise communities received just under 3 million dollars. The urban ones, I think the empowerment zones received a hundred million dollars. There's no guidelines for what you use the money for, it's to target poverty. The things you do, you have to convince them that it will have an impact on poverty. These are ten year projects, for example, you have ten years for what you're going to do but you decide what can be done to help alleviate poverty. That can be health services, it can be educational services, recreation, economic development. RFP's that come out and say that priority will be given to applications that propose to serve the empowerment zones or enterprise communities. In fact we lost a grant that we would've gotten if we had been serving those areas. This is a program for the President and the Vice President. They're putting pressure on all of the government agencies to give priority funding to help support empowerment zones. There are also a lot of tax benefits for private company's for example who are willing to re-locate to the empowerment zone.

Another Member: I don't understand exactly how you become an "empowerment zone". Once you get the grant, it's an

empowerment zone? Or do you apply to become, have that designation first?

Lynn: You need an application just like for the Star Schools.

Another Member: It's part of the grant process?

Lynn: That's right, you do an application if you're selected to be an empowerment zone, you are awarded 40 million dollars. I don't know if that's what it's going to be in this next competition or not. What they'd requested for the rural empowerment zones in the next competition is sending five million dollars. I don't know if they are going to do a college grant but it will be millions. I guess at the very least it and it could be more, but the reason I would even look into it to begin with was not for the money for the empowerment zone, because when I first looked into it I didn't know it was. But I had read so many RFP's that gave priority to that, that I wanted to get designated as an empowerment zone so we have a better chance getting other funds. That's the reason I'd look into it. I don't know the demographics long enough to know if this area up here would qualify.

Female Member: If poverty is a requirement, then Yeah!

Lynn: It's pretty simple because all you have to do is look for the 1990 census. That's what you have to use. It's also for the rural zones to 1,000 square miles. For somebody in Washington a thousand square miles is forever, out here, 1,000 is not a very big area. What we found out is federal lands do not count as part of that. In San Juan County Utah is public domain. Indian reservations or forest service.

Another Member: So including an Indian reservation would not count toward the thousand square miles.

Lynn: The population would though. 30,000 population would use that. Those are some positive fund resources I've run into since my last visit with you folks. Just briefly some information on conferences, these may be things you are already aware of, there's a national conference in Orlando, Florida sponsored by Microsoft that deals with education with technology. It's April first, second, and third. There's one, it's called Connecting All America For the 21st Century. There's another one called Technology In Schools. This stuff I'm going to leave for you, Greg.

Female Member: ACCT and AACC is offering a special technology conference that follows their national legislative seminar.

Lynn Lee: There's other publications you can get that show jillions of, technology is a big thing, these are just some that came in the mail that I put in the file instead of throwing them away. The next thing I have here is some information on Teacher Training which would be of more interest to Joe. There's a notice here about Cable TV industry expanding it's commitment to education. Vice President Gore praises this and so forth, but there's a handout that I'll leave. There is one that has information on teacher training. There's one from the Alaska Staff Development Network, it has a video with it. They sent me a copy because of Star Schools. There's a call the Professional Development Guide for Distance Educators conference in teacher training.

Lynn: This other file I have, I'll more time with Greg on this, but I've wanted to mention while Joe is at the meeting here, I got a message from Joe Wilkes who is the Team Leader for Star Schools. He used to be a program officer. He sent me a questionnaire for information dealing with professional development. Anything we do that involves professional development teacher training or anything like that we need to be sure that that information is kept.

Lynn: Just a question in one of the publications that I get dealt with things that are going on in Wyoming regarding the concurrent enrollment As I read here, some of the concerns people have,

those are the things we said were great! What's the latest on that? Is that going to have an impact on community colleges?

Female Member: Well it could, it's kind of the tempest, I think. Some have been fairly vocal and unfortunately the College Commission Executive Director has not really responded well to some of the issues that have been raised. I think the legislators are for the most part very supportive of concurrent enrollment. Recently the Superintendent in Mountain View has raised some questions. We don't think it's going to be seriously challenged but we are taking it very seriously.

Lynn: One of the main concerns seems to be using public funds to pay for concurrent enrollment for high school students. Utah does it.

Female Member: I'll tell you where you can be helpful to us as I say, I don't think much will happen with this legislative session, but it very well could come up in the general session in 1999. You might be real helpful to us in terms of getting information as to we talk, handles concurrent, it's quite a positive effort in other states. To back away from that would be a shame and would definitely hurt the Star Schools.

Other Gentleman: It seems to me like there are two major concerns, one of them is being brought out by the community college faculty. I think part of it is legitimate, they're concerned about quality which we all are. We want to make sure those classes are of the same quality that we're teaching at campus. But a little bit of it is a fear on the part of community college instructors that somehow they're losing control of what they're doing at the college and no one can do it quite as good as they can. I think that is part of it. Then the other issue that seem to be of concern that we've worked with is dealing with what they pay, and how much they pay, I'm talking about the high school students who are enrolled in the dual enrollment classes, whether they pay the fees, whether they pay the tuition, who pays for the books. Those are issues that seem to be coming up right now. I think that it has solid support, but we just have to work very closely and make sure that we can assure them that what we're doing is presenting a quality course in the high school.

Lynn: We've had trouble with only one institution because of the fact they are a private institution. But the only thing is, if a student takes concurrent enrollment and remains in the community college and gets an associate degree, then even BYU has to accept that student as a future student. Regulations say if you transfer from a two-year institution to a four-year institution with a degree. Not just with the hours, you can have the same number of hours

without a degree and they don't have to do that. But if you actually have the Associates Degree, then even BYU has to accept those credits. They have to accept the degree, but they don't have to accept ours if it's just a whole bunch of hours. We sometimes use that as kind of a recruiting tool. We say that if you stay here until you finish your degree, then you can transfer to any institution in the United States. They have to accept you as a junior after you completed all your general ed. requirements. I just thought it was interesting in our state, our Governor is adamant about more concurrent enrollment to the extent that they'll give a thousand dollar scholarship for any student who will complete high school a year early.

Lynn: It's a big issue of the advantages of concurrent enrollment. He can offer the advantages and our state legislature appropriates fifteen thousand dollars for FTE to public ed. and then public ed. pays the college the tuition for the student and I'm not sure about the fees or the books. I don't know if the student has to cover those. Those students pay the same tuition as any other student, but they may not pay the fees.

Other Gentleman: What do you do about books? That's a big issue on our campus. Our staff wants those students to use the same or a comparable text book and they want the student to use that textbook, write in it or whatever they want, which means the

schools then cannot buy a textbook for the class and use it again the next semester. That seemed to be a big issue.

Evaluator: Put it on the Net.

Lynn: I do know the students have to have the books, I don't know just how the payment and so forth is handled but the students are treated, a high school student in concurrent enrollment is treated just like any other student as far as requirements. They have to take a diagnostic test, they have to meet the same entrance requirements, they use the same books, the same material, in fact a lot of the times they are in the same class.

Other Gentleman: I don't think that Star Schools will be effected by the current discussion on dual enrollment. Through Star Schools, the teachers who teach the classes may be college instructors or they may be high school instructors who have been approved by the college and we have some of our students in those classes. So I think that's a different situation than having a high school teacher teach the class as part of that teacher's assignment. Then there may be high school students or there may be students in the class who are not taking it for college credit as well as those that are.

Female Member: The big issue that's bubbling now is that the statute says that the students shall pay no fees for the course. We're required by the statute to access tuition. So we interpret the statute very literally that we can charge the tuition but not the fees. Some of the colleges through separate arrangements pick up the tuition as well for the students. Some of the school superintendents are concerned that quite frankly don't even want their students to pay the tuition.

Evaluator: What Utah does, is to call it Concurrent Enrollment and most other places call it Advanced Placement.

Female Member: We enroll those students as our credit students and it's up to the high schools to consider that high school enrollment concurrently and count that toward their graduation. It's an interesting and somewhat complex issue because of the way schools are funded and because of the colleges. I don't think that came out in that article, it's a lot more complex than that article implied.

I don't think we actually introduced Steve either, Steve is an Executive Director of the College Foundation. He spends his time seeking out additional resources for the college.

Evaluator: Sonia told me that you were going to buy a couple of cameras to go in the new Distance Learning Classrooms so the teachers could see what's on top of the Elmo.

Kevin: Basically most of those are along the lines of audio visual are Greg's and Mike's department. Greg is the camera person among other things.

Evaluator: Will you be working in that classroom?

Kevin: Yet to be seen.

Other Gentleman: Sounds like I'm speaking out of both sides of my mouth when I talk about teacher training. We have a couple of teachers that were in there this semester that shouldn't be there. They are totally frustrated and I am not to not to let anybody start until they are comfortable until they have adequate training. I wish they just waited until next year.

Greg Ray

September, 1998

Evaluator: Since you're part of public television, how do you raise
money?

Greg Ray: We get on the air and beg and then we go to individuals
and businesses.

Evaluator: Do you get any state or federal funds?

Greg Ray: Yes, we do get some both but it's not enough.

Evaluator: What percent for the total budget?

Greg Ray: They don't provide any money for programming. We've pretty much built the entire system with NTIA money. A few years ago the governor recalled two million dollars in NTIA money to finance microwave and high part transmitters and he gave it back. I got 75 percent money.

Evaluator: Did you write a proposal?

Greg Ray: Oh yes, and wrote the grant. It took me three years to get everything in place. Well, you saw this before (entering a distance learning classroom).

We've got acoustic conditioning on the wall now, we've got student microphones in here, these are very sensitive believe it or not and total omni-directional 360s. This is a very smart mic and speaker system. There's sound reinforcement in this room so when we turn on everything on the podium you can hear a student talking over there a student over here can hear it over the speakers. It automatically turns off the speaker immediately adjacent to the microphone so it won't feed back. You never get any feedback. It's an incredible system. It also amplifies what the instructor is doing. Then it ties in with an assisted listening system for the hearing impaired. We have a little receiver that they can wear in an earpiece and it greatly amplifies anything that's going

on in the room including student questions. They can hear everything. So they have that.

Evaluator: Is there a significant population of the hearing impaired?

Greg Ray: No, but there are some and there is one student that we are trying to accommodate. He's deaf. What we need to do is have the assisted listening program feed through a computer that automatically has the signer come up on the screen. Actually, somebody can perfect that. Somebody's has to be working on that. These are two six-foot projection screens and right now it's tied into the computer. We can show Internet, anything off the computer, or tie in a laptop. We're probably going to replace this flat panel to get one that has better resolution. We're not satisfied with the resolution on this. This is new. We're probably going to try a Sony. The idea is to try to take up a little less real estate.

We have looked at liquid plasma displays for up here but they're much smaller. The biggest one we could find is four feet. They're \$14,000 a piece. These are six-foot projectors. But you can see it has a good bright image. It's a good high-resolution image so the students can see. The problem was before they were using monitors like that one up here. The students couldn't see anything. Might as well have not been doing anything.

We had looked at the possibility of putting in LCD displays along the student desks but that starts getting pricey and then you

worry about damage from students crashing it with books. It eventually might work out as a solution. They might get it down to where it's affordable.

We can accommodate laptops in here either PC or Macs. They can plug right in here. We have a microscope camera that we bring in here so if instructors are teaching anatomy and physiology they just tie right onto this cord right here with a microscope and show anything that they're seeing in the microscope the student see it on the screen right here. They can either control it here. Programmers are still working this. So the AMX control programming is not done yet. So this is not the way this is going to finally look. Actually we're probably going to move this panel over here. All of these panels are removable because we added capability for additional sites. They're not up right now because we're still putting in the inter-connection system. What we'll have when the sites are up are four schools to each screen and then when the instructor wants to talk to a site, they'll be able to see the site and they can just touch the panel for that school if they want to talk to them. It will switch to that site. The students will be able to see the site on the screen. We can either control it here or they can control it there but we really want the instructors to control that aspect of it so that they can preserve the interactivity and say "Jackson, we want to hear from you in terms of what your comments are". So he can touch the screen and Jackson's up on there and Jackson's students can then talk.

- Evaluator: Is it always the same image on both screens?
- Greg Ray: No, we can split it. We can do it more than that; I'll show you in the other room. We can do what's called a quad split. So we can show four images on the screen.
- Evaluator: When you're microwaving and projecting, are you sending a quad split screen?
- Greg Ray: No, we do that in here. We can have four schools on the screen at a time. We could do more than that but the image starts getting too small. Somebody asked could we do more? And we said yes, we could do I suppose as many images as you want on there. It gets so small that you can't really see faces and it becomes meaningless.
- The teacher will have a little stool in here. They have a wireless mic.
- Carla, I'd like you to meet Bruce Derdelise.
- Bruce Derdelise: I think I figured out the camera problem. The address from 0123 is 0 on the other side in terms of the remote. Not color balance.
- Greg Ray: The instructor wears a wireless mic that has an automatic tracking feature; wherever they walk the camera tracks them. It's

a little necklace. Parker does nice stuff. There are some anomalies with this. If you get too much light on the back one sometimes it doesn't want to track right. The instructor can go any place and go out from behind the fortress here. We had to make this a little bit larger for two reasons one, some of the instructors want up to three students up here with them at times to demonstrate something. The other thing, we needed some real estate to add the additional monitoring for additional sites. It's a real comfortable feeling. Now the cabinet-maker made this about six inches taller than he was supposed to. It's the only thing I was a little disappointed in and they were suppose to make this wheelchair accessible so we're still going to have to modify this. For right now it's going to stay. It will work. We're actually putting in a riser in here to add a little height for the instructors, but it works. We have fluorescent lights to take a little bit of light back here on the instructor but not be intrusive or too bright. It looks good on the screens. I can show you. I can stay in here and you can look on the screen in the other room or you can just come look at the pictures. We've got two cameras for students and two for the instructors so we can vary the shots a little bit.

Here's what we're going to do in here. The display is going to be set up such that we're going to have a little diagram of the room on the touch panel. The room's going to divided into quadrants so if a student starts talking the instructor's going to need to hit the touch panel for the student in that particular

quadrant. We're going to put numbers or letters for the quadrants in the room here. We actually might break these into six zones. The camera will automatically go to that zone of students. We talked about the logistics of that. You can make it so that the camera's will automatically switch to a student if they start talking but you need a little push to talk feature to do that. We thought that would kill the interaction.

Here are the controls that links it all. This is Bruce's domain. He's having a good time. This is designed so that we can take sources from microwave, from telephone, from satellite from Internet, we can take any number of sources in here. We can feed them into the system in conference. It's got a lot of expansion capability. It can take a satellite downlink. We can do an interactive. We can do an uplink-downlink out of here. We can add CUSeeMe in Internet you can have someone in Rowanda who is out somewhere so that your lights go on.

We've got monitors so we'll be able to look at all the schools simultaneously. That's why there are so many monitors. You can see the quad split up here on this screen. He can add whatever he wants in those. You can see the image from the classroom up there. We can of course get a close-up; we can get a tight shot on the instructor. We've got this control over here allows us to joy-stick control the camera. You can manually control it if you want to. So you can either auto-track, you can take

it off auto-track and zoom in on the instructor or zoom in on a student and joy-stick control it any place you want.

Evaluator: Are they using this at ABC, NBC or CBS?

Greg Ray: Yes. We also have character generator capability in here so we can do titling if the instructor wants to add titling. We've got twenty dubs. The idea is to be able to do a master and all the dubs all at once. When they leave class, we're ready to ship out tapes. We don't have to spend hours dubbing. Well, eventually when we get connectivity dubbing will go down anyway. They can dub at their sites or students will be at some of the sites and then there will be some students who aren't close to a site and we'll still have to ship them a tape. We just mail them out. The idea is to try to cut down on the amount of time this poor guy has to spend dubbing so that's why we've got the dub center set up over there.

Evaluator: So, those are still real time?

Greg Ray: Yes, in and out at high speed. Those are big machines. Once we have connectivity I think it'll go down dramatically and also we can probably do delayed feeds and let them pick up on their end. There are a lot of possibilities.

Evaluator: Are there plans as part of this to do anything with K-12?

Greg Ray: Yes, and one of the things we're doing right now is we've involved K-12 in some Web development and teaching students to be involved in developing the Web delivered class. The students are actually involved in developing the Web site. There are classes over the Web. There is also a reading project that's involving K-12. I'm fuzzy on that today; we'll have to look at that.

Evaluator: Can you collaborate with other Star Schools projects?

Greg Ray: We haven't been doing as much with the K-8 although out of Fort Washakie, WY, there's a project. We didn't get as many applications from teachers to do things with K-8. We're working with them.

I've met with them out on the reservation specifically to try to encourage them and talk about things that they might be doing. I'm hoping that we will be doing some projects with Native American languages and Native American culture. Primarily language, we've also talked about the possibility of taking some sciences and trying to put it into examples that Native Americans will find interesting or could relate to. So you take a chemistry class and you talk about how early Native Americans tanned hides and some of the chemical properties that were involved in that even though that they didn't realize it at the time. Try to use examples that can be related back to their native culture.

Getting ideas and the feeling, hey I can do it. I am capable of doing something meaningful. This is one of the classes we're pretty similar to deliver to Jackson. We have a lot of demand for health sciences in Jackson and we're not hooked to Jackson yet so we went ahead and video-taped with instructors so that we can provide some health sciences. We send the tapes there. They just use VHS tapes. Just based on this so far has tripled our enrollment. We are ecstatic. We can talk to the other schools, we're hooking up four schools to start out with and then there's space in here for the remainder of the schools. This audio and video system's really configured initially to tie in to up to two dozen sites and it doesn't make any difference what place in the world they are. We can configure way beyond that, that's not a problem.

This digitizes the signal. These are IMPG-2 encoders and decoders. This room across the hall is tied in so they can all conference. It's just like any other site. We can record simultaneously two different classes or send out. We can have six simultaneous conferences going that's the way the system's initially configured. We can do more than that but I figured realistically even if you had twenty-four sites that would only be four schools per conference. So it configured for six simultaneous conferences up to two dozen sites. It's a heck of a system. It's going to be nice.

Harris will be in on the 15th next week to start the construction on the interconnection portion. We're set to do it.

We've had months and months of political delay. This is our instructional technology lab.

(introductions Meeting Darin Chaney, David Warrington who is working on a project with Roger Melton the Math instructor. This is for graphics – using PhotoShop..

Evaluator: How do you like the Gateway Computers?

Greg Ray: They're okay, actually they're not as fast as I expected. After working with them, we go to Norton Utilities because of crashing. Meet Vicky Ferris, a nursing instructor. She's become a video personality. We've scanners and visual cameras in here, we have black and white and color printing, post scrip capability. We have a little room for recording audio for power point presentations. We're going to put some acoustic conditioning on the wall in here. Then they can record their audio in here so that if they need to have voice over for their power point they're not doing it in their office which is what they've been doing in the past.

Evaluator: Can they edit video here too?

Greg Ray: Yes, actually we do have that capability. Bruce will largely be doing that over there. We've got a Sitex system with a 128 gig hard drive.

Evaluator: Who is able to use the IT lab?

Greg Ray: Instructors who are working on their Star Schools projects, ultimately, any instructor who needs instructional support. We are concentrating on all of the Star Schools projects right now. That is first priority. Frankly we are busy enough in there in terms of projects that instructors are working. We have two students who are normally helping. They're in class right now but they were helping instructors all summer. They are paid on work-study. The students were helping digitize video this summer. One of them was helping the anatomy teacher and he was doing certain movements in there while they were video-taping it and then digitizing it and showing the movement of certain muscles as they did certain ranges of motions. That was incorporated into a CD-ROM that is going to be delivered over the Web.

We have a Web server in that room. Some of the things will be server based. They have a combination of textbook, CD-ROM and Web. In the case of the Math class they are developing some additional print materials to go with specifically with Real World Math. The rest of the instructors are combining the use of textbook with CD-ROM and Web delivered instructional material or testing on the Web.

Evaluator: Are students going to a specific site to enter the Web?

Greg Ray: No, actually, they'll have dial-in capability over there so if a student virtually any place in the world can dial into that server and have access to our Web site. Or they can access it by the Internet as well as by IP address. They can also if they don't have an Internet provider they can call in to a dial up number and access the server that way. They have to have a modem, computer. What it means is if they live out in the boonies somewhere and they don't have an Internet provider available or they for whatever reason choose not to get an Internet provider they can just dial in to the service.

Evaluator: Once they've dialed into it then is there a way for them to get out to the Internet?

Greg Ray: No, we're not doing that because that gets into some more contentious issues in terms of providing Internet service and competing with commercial enterprises. There are some serious political issues.

Evaluator: As part of the project at other sites, are you installing a computer and a modem?

Greg Ray: Yes, there will be Internet connections at all of the sites. We are letting schools sign up through the state Internet service, although we are certainly exploring other Internet possibilities

through the Star Schools project. We have the band width and the capability. So we'll work both with the state and explore other possibilities in terms trying to provide timely Internet connectivity at schools. That is a contentious issue for a lot of the schools that they just don't have the bandwidth and the capacity that they need for the Internet services they need. Some of the schools have been waiting for higher speed lines for some time and they haven't been able to get them. Hopefully the state data project will allow them to get those higher speed lines.

As part of the Star Schools project these students need to have access to the server and they'll have that through our servers on campus. We'll be tied in to our servers on campus. That won't be a problem. What we're doing for people outside the remote sites we're developing, they'll have dial-up access to the Star Schools server. So they will be able to get into the courses through dial-up access. We have a toll free line. That's really not a problem.

A lot of the classes are created with hot links to other sources and other sites so that once the student gets into our Web site it will automatically jump them to other sites and other sources of information that the instructor wants them to see. The hyper links are built into and they can get to them through with a modem and a dial-up. It won't be as fast as through our Star Schools system because our Star system would have much higher speed. That's one of the advantages of the Star Schools system. The

Star Schools system capability can easily do ten megabits per second. That's cable modem quality. They would be limited to 56 kilobits. Or 33, somewhere in there. It's a little slower. They can't really handle the same speed that we'd be able to handle in our system. They have very high-speed service on any site that's connected into the system. They order textbooks through the bookstore and we're used to dealing with distance students checking books out, that's not a problem. We also have CD-ROMs that the instructor's have developed as part of the Star Schools program that they use in conjunction with text books and with the Web site.

Evaluator: Is there an effort to get away from using the textbooks because of the cost?

Greg Ray: We've discussed some of the problems of textbooks, that's one of the reasons we're developing some anatomy materials on CD-ROM and proprietary material is that the cost of the material to the students is just so significant. In anatomy alone last year the required text in the recommended readings if the students bought all those books was roughly \$300 and we feel that's far much too much for any student to bear. It's not proportionate to the cost of tuition. Tuition for the whole year is something like seven hundred dollars. So books for three hundred is excessive.

We are trying to look at ways of reducing some of that. Our bookstore doesn't have an excessive mark up by any means. The problem is that textbooks had gotten incredibly expensive. Back when I was in college a \$20 book was an expensive book, now an expensive book is \$150 book. There are a lot of books that are \$40 to \$60. I was at the bookstore the other day and there were students with stacks of books eight or ten inches high and it was \$300 for a relatively small stack of books. That's a heavy financial burden for the students.

The Web can help although you know how it is trying to read on the Web, it's not as easy to read on a computer as in a book. It's not as fast. It has its place but it's not as good a medium if you're trying to read large quantities of text. At least right now, that's my feeling. The way it scrolls, it's much harder to read. If you could flip pages like you would in a book it probably would be a little bit easier. Let me see if the class is ready for you in here. Let me see if Mike's going to be ready. (Greg Ray speaks to a class welcoming them and a little orientation)

Female: We have had students go to work shops like the University of Southern California Animation workshops, etc. We've been successful in getting scholarship money for them to do that and spend several weeks, a month or so at a major university somewhere on a scholarship. They come back as part of the requirement of the scholarship to share that information and

something of what they've learned with their fellow students and call it an academic year. There really have been some really neat opportunities.

Male: We do go down to the local station in Casper. All the neat things that they have and it's important.

St. Stephens School

September, 1998

Greg Ray: This is Jerry. This is Mohammed.

Jerry: What are we going to do for keys because the distance learning room isn't even open. Let me prepare you for a shock. It's not refurbished yet. So we're in the process, it's probably going to look like a warehouse.

Greg Ray: She's just gauging progress here.

Jerry: We're actually getting into gear. This is Darlene Powell. She's our media specialist and librarian.

Evaluator: How many students are here?

Darlene Powel: There are about 250 students in this one and in the high school.

Greg Ray: This was a home economics room so just so you know what they had to do here. There were cabinets all along the wall. There were stoves and refrigerators in here.

Jerry: We chose this room. It was the most convenient that we would be able to use in this building as the high school involvement and we're also thinking of expanding to an-add on building. It's a central location, it's going to be an attractive room. That's where all the electronics outside the class are going to be housed.

Greg Ray: You'll be one of the first sites up.

Jerry: I'm the plant manager, making all the arrangements for the electrical and the room modifications, for instance these four TV sets 32 inch screens are heavy. So what we've done is have them cut into our walls and install these heavy boards so that we can bolt these to the wall. Once that's done, if the electrical is in we'll put all our sound boards up and finish this room off and I'm expecting that to happen all within a week. We're ready for you to come back and put the console together.

Greg Ray: The microphones are omnidirectional and will hang down like in the other set up. There will be acoustic panels from here to there so there's not too much echo.

Jerry: We haven't decided on student desks or tables. We haven't done that because we haven't had a meeting on it with our

high school and elementary teachers on how the room is going to be best utilized so we're waiting on the furniture component until we decide whether we'll be able to do this. We have a lot a people excited about the possible programming that we get here. It can really help us out on our staffing issues because we can't teach chemistry or physics or a foreign language or many things that most high schools can do so this distance learning is going to be real interesting.

Greg Ray: That's exactly what's Star Schools is about, foreign language, sciences, math all those things.

Jerry: We have a big community involvement interest too and we see adult education or GED course work. There are a lot of possibilities.

Greg Ray: Adult education is one of the things on the reservation that has been stressed over and over. They really want access to adult education by the network. We're delighted to be able to make resources available which otherwise they wouldn't have.

Evaluator: Will there be computers in this room?

Jerry: At least one. We have some of the programming with closed circuit TV going to all classrooms in the school and we

brought in a Coax so we could take the signal out here and pipe it to all our classrooms. There will be some morning announcements and are old programming down there are video projects, computer projects and we're going to put in a computer right here for the Internet access that will be used in this room. We're bubbly with excitement.

Evaluator: Do you have IP service?

Jerry: We've used Tripped Out Com in the past, we're looking into the U S West our T-1 line and we want to bring in here for just the Internet, not associated with the Star Schools program but that's a very expensive item for us. We'll work with the IA and wondering if they can help us out.

Evaluator: What's your cable company doing?

Jerry: The cable company has not come out here. What we do for the cable opportunities is use satellites. We receive those kinds of educational programming through satellite, through what is called Edlink, our program. TCI has facilitated that on the day that they worked with us. What is given to us is what is given to the public school systems. It's also through Porters. It's almost equivalent to what is free to the public school system.

Evaluator: Is it like the courses carried by Cable in the Classroom?:

Jerry: Yes, we put that to all our classrooms

Evaluator: How far away are you from the cable head end?

Jerry: I don't know that exactly but we were told that cable would never come out here.

Greg Ray: It's right in the middle of town. As part of Star Schools we could microwave it out here. We have a bandwidth that could do that.

Mohammed: That was put in at Casper this summer but it hasn't hit out here yet.

Greg Ray: We'll have the highest speed link yes, we'll have a two way high speed link in. You'll have eight T-1's coming in here. Physical cable or wireless it doesn't make any difference.

Jerry: We don't know what that means but that's a lot.

Greg Ray: Each T-1 is 1.544 megabits per second. You'll basically have in access of 12 megabits per second in terms of capacity. Hang them all together. For video they will be using three of those.

Increments of three. Three total. Anytime we want a dedicated video channel we use three of those in tandem. The idea is to have two simultaneous classes and then high-speed data.

Jerry: High -speed data for what?

Greg Ray: You'll be tied in with the server ultimately at the college.

Jerry: That would be attractive to us. We think that installation for U S West is \$500 for one T1 line. There's a \$366 a month telephone bill. The ISP, we use Tru.com, \$250 install fee plus another \$175 above. Those bills add up to \$1000 a month amortized over a year with all the installs. We do want to do it. The people who are paying for it are starting to say okay, if we pay for this what are we going to get for it? I'm hearing more and more.

Evaluator: Is this a deal with U S West that somebody has made?

Jerry: U S West is the only one that can bring in the T-1 line, right? I mean the actual physical cable.

Greg Ray: Other than us.

Jerry: One of the questions was, and this goes back to the meeting you had in our cafeteria and I asked this question because I knew you were bringing in all these T1 lines. So I said hey, can we have some of your bandwidth for Internet and you said well...

Greg Ray: The reason I waffled is it's purely political, it's not technical. I could give you high speed Internet access in a heartbeat. I don't know if the college wants to do that or not. It's a decision with private business.

Jerry: If that could be looked in to that would be great because that would save us some time.

Greg Ray: In theory the state's project is bringing Internet to the schools but the schools still have to buy it so they haven't brought anything to the schools.

Jerry: Well, in the same thing we're in that boat with them or in the same boat with the BIA. The BIA has promised us that they could do this too. By the year 2000 all BIA schools will be hooked up to the Internet and they will have their T-1 lines and their ISP accounts free. Well, we don't believe it. So we thought we'd go ahead and do something on our own on a temporary basis, get it

started, get people training and if these freebee's come along where're going to take it.

Evaluator: Is there legislation for the BIA?

Jerry: They're tied up with Peter Camp with the BIA office talking about a program. All the schools are involved with it for free Internet access. The E-Rate. So we're treated like a state. The BIA is treated like a state so they're working on the E-Rate thing for their BIA. That's held up because the telcos have gone in and filed and filed. We should live so long.

Some BIA schools already have it. They're not going to take it away from them. We didn't get in underneath soon enough.

Mohammed: Actually, it's not at the college level either because college would love to endure.

Greg Ray: It's the state, it gets politically complicated. It's technically not a problem. You will have the physical connections out here where we can actually do it.

Mohammed: And you would love to do it too.

Jerry: In the mean time we'll just go ahead with what we can do using it and taking advantage of that.

Greg Ray: But you will be tied in with the college servers, so you'll be able to access the Star Schools Wed Server and ultimately the other college servers. All of the school's will be connected like a hub and star arrangement. So you will be able to communicate with others.

Jerry: We have this legislator in Hudson right now who is trying now to get some things out there. Never thought that I'd be getting involved in politics.

Evaluator: This is going to be a wonderful place. How many students do you expect to be able to serve?

Jerry: We have over 280 right now. I can imagine it growing and that's going to provide the pressure. It might be worth a visit to see why we need a new building. They tell us we're higher up on the list of the IS project to build a new high school. We're negotiating the grounds on who owns it. We're not clear historically on who owns it, is it the church, is it the BIA, is it the St. Stephens school? There's a lot of lawyer work going on to find out who actually owns this piece of property.

Greg Ray: It's politics. You have to be careful about raining on the Governor's parade.

Mohammed: We know we can do it but it's a delicate issue. The bottom line is we can do it and we will. How to do it is the question.

Greg Ray: There are several ways of getting from point A to point B. The most direct would be to use the systems we're putting in place but there are other ways to do it too. We'll work it out.

Evaluator: Could the project provide a pilot to bring the bandwidth to this site.

Mohammed: This is all Wind River Reservation. That's their official name. There are two tribes here together Arapaho and Shoshone's It's traditional enemies. Over a hundred years, temporary housing.

Greg Ray: This is the Arapaho side.

Evaluator: Do they actively engage one another, is it political?

Greg Ray: Oh yes, No, kids don't get into it, it's mostly, correct me if I'm wrong, the business council level where they have to agree to do things collaboratively. They'll shoot each other in the foot or shoot themselves in the foot trying to prevent the other side from doing something, so the business council is essentially a non-

functioning body. I don't think they've had any joint meetings for two years now.

Mohammed: I think they have an Arapaho Business Council – ABC - and a Shoshone Business Council that separately meet every week.

Greg Ray: The two tribes are at odds in terms of what they should do and how they should do it. Sometimes they'll do things just to spite the other one even though it's ridiculous.

Mohammed: They have both been very supportive of the college and the project. Greg has been able to work wonders with them and let them see that the education is a savior to our area here.

Greg Ray: We just got the lease agreements from the tribes to install the equipment on the repeater sites.

Evaluator: Are the sites definitely on reservation land?

Greg Ray: Yes and we needed to have those sites in order to serve the reservation schools. That's done now, finally.

Evaluator: How long did it take to get it in place?

Greg Ray: It took a year. I met with the tribal leaders to try to get the impasse resolved and then drafted letters for them to sign. We put it on their letterhead to try to make it easier to know what elements we needed assurances on and to make it easier for them to get it done. We got it done this summer.

Evaluator: Do you now have all the Wyoming sites that you need? Is everything in place for that and in the process of being installed?

Greg Ray: Yes. We're doing the project in phases. We're doing the Riverton Valley this year and then we're doing points west next summer. We're running out of our weather window.

Evaluator: When does bad weather set in?

Greg Ray: Typically it doesn't get really bad until December but on some of the mountain top sites by October you really can't be pouring cement anymore. That can effectively shut you down. We can have snow now. In September 1983 we had a foot of snow in Riverton. The leaves were still on all the trees. It knocked down power lines. It was a mess. We were without power for four days but that is rare. Usually we won't have any snow until October.

Evaluator: Tell me what you are doing in Montana.

Greg Ray: In Montana we are primarily working in the curriculum area right now. Coldwick Courier is their Dean of Extended Studies up there. He is working with us in terms of providing content that we can use down here and also allowing students to sign up for baccalaureate level classes that they otherwise couldn't access. Ultimately we are looking at connecting with Montana by satellite. We are also working with TCI to see if it is possible to get some bandwidth on TCI and WTCI systems that run and connect at Montana because TCI is the primary provider in Montana. It may be possible to use a portion of the bank width on the TCI system. That's still a possibility we haven't discounted yet.

Evaluator: What about the Internet access? Is that your responsibility or is that somebody in Montana?

Greg Ray: They've already got that so that's not really a problem.
They are also serving Crow and Blackfoot in Montana.

Evaluator: How about Colorado?

Greg Ray: For Colorado and Utah I'm working right now with Ed Bridges from Utah. They are going to be expanding their system. Ed, the Colorado people and I have been looking at how we can partner with some of the expansion that they are both planning and tying those two in together probably off of Bahō Peak which is southwest of Monticello. Bahō is a pretty major communications site and currently is being used by a Four Corners project to route signals into and out of Blanding, Montecello and other points. We would then look at tying in off Bahō Peak into the Utah Ed-net system and also connect Colorado off that site. That is in the works. As of last week I had visited with them and they were meeting this week in Colorado to discuss that. We're coming along on that part so I think we're going to be okay.

Evaluator: Are the courses coming out of Blanding being received or bicycled or anything here or will they be?

Greg Ray: They are not being bicycled right now but ultimately that is a possibility. Of course when we're tied in they wouldn't have to bicycle them.

Evaluator: Is that a possibility or is that part of the proposal?

Greg Ray: It's part of the proposal. We aren't doing it right now but we're working with Lynn in terms of assessing that. We just haven't started that at this point.

Mohammed: They can use our courses, too.

Greg Ray: Yes, it's vice versa.

Evaluator: Have they got all of their courses up and running now?

Greg Ray: Out of Blanding?

Evaluator: Yes.

Greg Ray: We're working on some collaboratively with them, some net based courses both in Colorado and in Utah. We are sharing some multimedia material that was developed by Blanding in terms of Native American languages.

- Evaluator: Is that the CD?
- Greg Ray: Right. Actually we are expanding on that. We have focused a larger portion of our efforts this first year on trying to get some of the systems up. Now we are able to concentrate a larger portion on curriculum. That isn't to say that we haven't focused at all on curriculum because we have been working on 27 courses.
- Evaluator: Has Don Fork been out yet?
- Greg Ray: Yes, in March or April. I just talked with him yesterday in fact. He had hoped to get out here this Fall but now he's looking at next Spring. He didn't want to come out in the dead of winter. They waited three years to get a T-1 at this high school out here. They had a very hard time getting phone service out here.
- Male: The principal got a phone to his house just early last year.
- Greg Ray: Communications are limited out here.
- Mohammed: Unemployment here ranges from 70 percent to 85 percent.
- Greg Ray: Alcoholism runs right at 70 percent.

Mohammed:

Transportation is dismal. For students who come from here there is no family support. Actually there is negative family support. They make fun of people who go to school. If someone is successful in finding a job and buys a car everybody in the family uses that car.

Jeff Bradley, Tech Coordinator

Fort Washakie

September, 1998

Greg: We're trying to keep everything similar. It makes it much easier for the control center operator. If they have a problem here he can talk them through it. If the sites are pretty similar it's easier to talk them through a problem. If every single site is different it makes it a little bit harder for him. From a training standpoint and from a support standpoint it just makes sense.

Evaluator: How many students do you have here?

Jeff: 280 in K-8.

Evaluator: Are you associated with the high school, too? Is it close by?

Jeff: No. Our students pay out of district to either Lander or go to a boarding school or down to Ala.... It's one of those three areas.

Evaluator: When do you expect the room to be done?

Jeff: Next week.

Evaluator: Is all the microwave equipment installed?

Greg: No that's going in starting next week. Thank you for your help because we do have agreements in place now.

Jeff: Cool.

Evaluator: Do you have Internet access?

Jeff: Yes. I'm using Wyoming.com out of Riverton right now. About two years ago we tried getting a T-1 line in here and US West said they didn't have the capability. This last summer we had a Native Visions athletic camp here and did training sessions for U S West here and had some of their vice-presidents in the building. We had 40 machines on-line and they said this is really slow. They asked why we didn't have better access and I said because you won't give me better access. They are now e-mailing me and saying when do you want it. We will hand walk it through. I'm holding off to see if we can figure how to channel it through the eight T-1's through the microwave. I don't want to pay a line charge every month if we don't have to.

Evaluator: What about the Governor's project?

Jeff: If we get into the state network the district will only supply us with a 56K line. Then we pay the additional charge to get a T-1 line.

Evaluator: How much will this cost?

Jeff: Our T-1 line will cost about \$800 per month. Ideally if I can run a microwave I want to do that.

Evaluator: Could you do it as a pilot?

Jeff: I'd love to.

Greg: I'm not saying anything other than we'll have some bandwidth in place for you, Jeff.

Jeff: I'd like to pilot it. Our school's pretty well set up for technology. We got another \$80,000 for goals this year so we'll put in another 30 machines.

Evaluator: Is it that the T-1 line would be a tariff line at this point? Is that why they can't give you a discount or no cost?

Jeff: The problem before was that they didn't think that they had a T-1 line available and they weren't real willing to play the politics with the reservation to try and get one in because they would have to get a lot of easements and those types of things. They figured if they could get by with a 56K they wouldn't have to go through it.

Gary: I can't imagine trying to run a room full of computers off a 56K modem.

Jeff: Prior to this summer's workshop when we started to put this room together we had 23 PowerMacs in this room. Right beside us is the PC lab and we had 23 266MZ machines in there all with Internet connections. Every classroom in the building also has Internet connections. We were hitting the 56K line with about 40 machines at the same time and it crawled.

The nice thing about it is this Native Visions camp. Of the sites that they were using we were the only one with the capability of providing them Internet access with about as many machines as they wanted. That worked out real well. Once they came in we started talking. The Native Visions camp is supposed to be here for at least three more years.

Evaluator: You're probably going to need everything you can get your hands on. It's just a matter of trying to get past some of the problems and make sure you have enough things up and running.

You're probably one of the few K-12's in the United States that has a connected computer in every room.

Jeff: Our board has put in a lot of money into technology and we've been pretty successful with the Goals 2000 monies to buy equipment. This classroom came straight out of board money, district funds. Fort Washakie and St. Stephens will be the first two sites up within the same time frame. It's kind of neat that two Native American schools are going to be the first on-line.

Evaluator: Who are the teachers who will be working in this classroom? Are they your teachers?

Jeff: It will be some of our teachers. It depends on where we go from there.

Greg: Jeff indicated that there has been a lot of interest expressed out here in adult education.

Jeff: Yes, we'd like to do a lot like GED classes and undergrad classes and really open this up for the community. I think you and St. Stephens, more than any of the other schools, have mentioned community outreach as being a really important ingredient in this.

Evaluator: What training is going to be in place for the teachers?

Greg: We'll do both on-site and some on campus training. We'll not only teach them how to use the hardware but we'll teach them to be distance teachers. That's an important component.

Jeff: We teach them the appropriate way to set up a lesson.

Greg: Right, how to set up a lesson to teach by distance and what changes they need to make.

Evaluator: Will this also be an origination classroom?

Greg: All of the sites are set up to be origination sites as well as receive sites. They could originate a Native Languages class out of here or any other class they wanted to for any other school in the system or the college.

Evaluator: Have you had any questions from teachers worried about classes that they might teach being replaced by somebody at a distance site?

Jeff: No, mainly because being only a K-8 district, most of our students are in self-contained classrooms. This will be set up more for community than for the teachers themselves. The teachers will have access to it. Hopefully we'll be able to bring in

some straight video programming to supplement their classes through the college's PBS channel and different things like.

Rather than replacing courses we'll be basically using it as a supplement to what we already have.

Evaluator: Are you strong on math and science teachers? Do you have enough?

Jeff: We have one math teacher for seventh and eighth grade and one science teacher for seventh and eighth grade.

Evaluator: Do you have K-6 here as well?

Jeff: Yes it's all one building. In our K-5 right now we have everything from LC3's to the PowerMac 5500's working. Every classroom K-5 has at least two computers in it. By the end of the year we should have three in every K-5 classroom; a Mac, probably an LC3, 5500 and the newer G-3.

Evaluator: Have you already done professional development for the teachers in Internet access?

Jeff: We've had Internet access for a year. We've done a lot of training in Internet access. We'll continue to do those workshops. After school we offer workshops for any staff on the needs that

they have. If we have a teacher that wants to learn a particular piece of software, they come in and we'll sit down with them and show them how to use it. We provide that training pretty much as needed two or three nights a week from the middle of October throughout the year.

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|------------|---|
| Evaluator: | Who does it? |
| Jeff: | I do about 90 percent of it. I only teach three hours a day and the rest of the day I maintain the computers and the network and help teachers integrate. |
| Evaluator: | How long have you been here? |
| Jeff: | This is my fifth year. My first three years I did science at the junior high level. The last two years I've been exclusively the tech coordinator. I put in the network. I've done most of the work here. |

Princess Killebrew

Instructor

Central Wyoming College

September 10, 1998

Evaluator: What courses do you teach?

Princess: English 610 for the Star Schools is a distance delivery package so I taped it. I just changed divisions but I held onto the English classes especially with the distance delivery just to see how it was going to work. Since I taped it we have thought of other ways to use the tapes in other people's classrooms. Just before I came down here I was visiting with Pat Troutman in the Lander office. She's trying to get someone into the distance delivery 6-10 but they don't live near Lander. They live near Riverton. They don't want to do it with the computer and they don't want to attend a night class over here so we are trying to figure out what we have.

Evaluator: Why don't they want to use computers?

Princess: Well they work and want to do it when it's convenient for them but I am really going to try to push to get them into the computer individualized program.

Evaluator: Is it because they don't have computers in their own homes?

Princess: I don't know. I think it's because they have been out of school for too long. They're coming back and they're afraid.

Evaluator: Do you have an introduction for new students in distance learning? Is there anything like that planned?

Sonia: I don't know. That probably wouldn't be run through me.

Evaluator: It is something that has helped in other situations.

Sonia: I know we have new student orientation. I don't know what all that involves.

Princess: What we usually do with the distance delivery is to have each instructor in some manner visit with the students. I think it would be a good idea if we had some type of orientation to show the students the whole process. One of the stumbling blocks that Patty and I ran into was that the students want to be able to pick up the materials after they get off work at four o'clock in the library. They want to know if I can leave it for them in the library. I said, "sure I could do that". They said that's fine. They could watch the tapes and do the work. I said that's not all there is to it. I explained they have tests they have to take periodically through here. Who's going to administer and monitor the tests? In the past when we did it with the distance the secretary had the tests and handed them out. The students took the test and gave them back to her. She either faxed them to me or sent them through

school mail. I asked who was going to do this now. Pat had no answer. They didn't want to go to Lander to do it. I explained that I couldn't really put them over the Internet because I don't have permission to do so. They are textbook publisher's tests. I said I couldn't ask the librarian to teach this English class.

Evaluator: Other teachers will have the same problem. Yours will not be the only class where this is a problem. If tests need to be given there should be a proctor. The student could come in at any time and take tests when they want to.

Princess: One of the problems that we often have is that in the library and labs we have student workers. It's not right to ask the student workers to proctor another student's test.

Evaluator: What sort of content is in this class?

Princess: This is a basic English class with mostly grammar, sentence structure and paragraph development.

Evaluator: So you might be able to have them fax it back?

Princess: That's an idea but it would still require that they be somewhere in a testing mode.

Evaluator: If it was used as a quiz rather than a formal test, it could be more of a teaching tool than a testing tool. It could provide the flexibility that is needed right now.

Princess: Yes. Most of their exercises are like that. That's another thing that we didn't even get to. In the past when they did their exercises there was a facilitator at the distance site to go over the answers and work with them. Now if these women want to do this at their own leisure there won't be anyone there to do that. We are running into some problems. What I'm going to try to do is steer them away from the video delivery to the computer. They will just have to come here to access the software. It's not available in Lander. Our labs stay open until nine o'clock at night. I really see that as their option.

Evaluator: What if you had a student who just couldn't come in?

Princess: If they couldn't come in to do the computer individualized class and they couldn't go to a distance site I'm not really sure what I could do. We also have night classes. If none of those options fit, it would be awkward. I would have to suggest they try it next spring or in the summertime. I also feel that the students have to do their share. They have to make some decisions about how many classes they take and whether they can work full time.

Evaluator: Is your course required?

Princess: It's required if they test into it. It's a developmental course.

They have to test into it. There are three students. They took the placement test like they were supposed to. One student placed into the regular English class, 1010. The other two placed in the 610, which is the beginning developmental course. For some reason all three of them went to the 1010 class at night that was offered in Lander. The two 610 students were just totally terrified as they well should be because they are pretty far behind already. The other student was convinced that it was going to be too difficult for her also. She wanted to take 610 also. I said no. We aren't accomplishing anything here. If she's unsure and she needs a little brush-up she should just take the 620 course which is short essay writing and getting you prepared for 1010. If the other two place into 610 that's where they belong so we have to find a class for them. That's what lead up to all of this.

Evaluator: It's a difficult course because of the problems that the students have in the first place.

Princess: Right.

Evaluator: Are these students who have been in literacy programs or do they speak English as a first language?

Princess: I think all three are Native Americans. When you say English speaking as a first language that's kind of iffy. It's not really a second language but it's not a very strong first language. They graduated from high school or got their GED but it was quite some time ago. They've been working for Head Start. Now they are pursuing a two-year degree in early childhood development. We haven't shut any doors and said no you can't do this. Maybe by the time I think about it tonight I'll have some idea of a good compromise that they can deal with. Frequently with students like this, everyone jumps through hoops except the student. Then two weeks into the course they say, "Oh, gee, I don't want to do this".

Evaluator: Have you enjoyed working and putting the materials together?

Princess: It was great. The course itself is really pretty much drill and practice. That's kind of bad but on the other hand the students that I have had in the past in my 610 courses have always indicated they needed more drill and practice in grammar. They really felt weak in grammar. They wanted to be able to write good sentences and write good paragraphs before I had them write four or five pages of an essay.

We redesigned both the 610 and the 620 just within the last few years as part of a Title III grant. Then we decided that we

needed to offer the 610 class for distance because in many of our outreach area students will test into the developmental courses but there are no courses offered or there aren't enough students to warrant a class. They just take these 610 students and dump them into a freshman composition class and watch them fail.

That's why we decided we need to have a distance program for these students. We looked through the telecourses and there was nothing. We still haven't gotten around to how it will be paid for. I'm doing it for free this semester just to make sure it goes. I told the division chair that by next semester they have to come up with a plan. I think all of the division chairs are being challenged at this moment to come up with something to compensate the faculty that do the distance delivery.

Evaluator: If you teach the course you will not be paid?

Princess: We have a plan right now. For the distance delivery courses that you are willing to teach without meeting the ten-student enrollment cap they will pay you \$20 per student. If you are an adjunct teaching the course you would be paid \$350.

Evaluator: For a three-hour course?

Princess: Yes.

Evaluator: At this point, you are not being paid to do that part of it.

Princess: The first semester I said I would do this. I said just go ahead and tape it in my classroom. Major disaster. There I was standing way down at the other end of the football field while they were taping this and there was this echo, echo. The students would ask questions. On the tape you couldn't hear what the students asked. I'd use the overhead and you couldn't see anything. There were about six that started out in that class in Lander watching those tapes and doing the exercises. The next plan was to do it in one of the rooms that had been set up. The debate was whether or not I would do it in front of a class or whether I would just do it during the summertime on my own. I decided that considering what I was going to tape it would be better if I rethought it. I just taped the lessons, the instruction part. I was going to try to master this all by myself. I had great fears that this was not going to be much better than the football field.

Then Darren came along and said they could squeeze me into the television studio. If I could get everything ready to go I could do it in the television studio. It really turned out quite well. I feel very comfortable that I accomplished what I was trying to accomplish. My original plan was that we would just use them for the distance classes to our sites. Then I got to thinking. Why just let these tapes just sit there. They're not that bad. Now in our regular 610 classes if a student is absent or misses a lecture they

can go to the library and check out the topic. They can watch it on their own. If a student sits in a class and hears a lecture on something and still is confused or needs a different perspective, they can check the tape out and watch it again.

Evaluator: Do you teach to learning styles?

Princess: I try to.

Evaluator: What have you done with Internet?

Princess: As far as this course is concerned, we have not done anything with Internet.

Evaluator: The students who cannot come to your class cannot use the Internet to get the class?

Princess: The Internet will not really be their choice. The computer part has to do with the individualized 610 class that is learning plus software based. Students can take the course that way but that is usually done here. They need to work with tutors and they need to work with the computer lab facilitator and they need to work with me a lot.

Evaluator: Why wouldn't you be paid to teach this course under the project.

Princess: I thought that once I did the project it went back to the divisions and then the divisions determined who was going to get paid and who was not. We had a real problem with my changing divisions in that the individualized courses were almost dropped. The distance delivery course, the individualized reading and 610 were almost dropped because I was the one who had designed them and I was no longer going to be teaching them because I was in a different division.

Evaluator: To which division did you switch?

Princess: I switched to the math-science education division from the humanities division. To keep them from being dropped I said if they were worried there was a problem I will do it for free. If I only have one or two students it doesn't bother me. I just don't want to see all this work put on a shelf and forgotten because you don't have the person doing it. That is probably the reason that I am not being paid for this semester.

I kind of felt that if there had been five or ten students in this class that I should be paid for it but we didn't have anyone enroll in the video part until two weeks ago. Now at least two of

these people will enroll. That gives me three for that part of it.

Other classroom teachers will hopefully use the videos.

Evaluator: Will you receive a stipend for that?

Princess: I have no trouble letting that be my contribution to the school. I was paid through Star Schools for the production.

Evaluator: Has there been anything put into place about how the materials will be used as they've been committed to tape?

Sonia: The tapes are copyrighted to Mountain Plains. The teachers are free to use them but cannot sell them for profit. All the tapes and CDs have the Mountain Plains logo on them.

Central Wyoming College

**Billie Betcher
Fundamentals of Nursing/Pharmacology**

**Jane Rogalski
Nursing Fundamentals**

**Nancy Larson
Math and Science Division
Human Anatomy/Human Physiology/
General Microbiology/Algebra**

**Jan McCoy-Chair
Allied Health Division
Older Adult NRST 1050/LPN Transition/RN Refresher**

**Dean Kendal
Allied Health Division
Surgical Technology Faculty**

**Deanna Dye
Physical Therapist Assistant Instructor**

Evaluator: How many distance learning courses do you teach?

Dean: We have one developed right now, the Orientation to Surgical Technology and we're working on the other two, Surgical Techniques and Surgical Procedures.

Deanna: I co-teach all the PTAT courses that we have. In addition I am the Academic Clinical Coordinator. I coordinate all the

practice for our students and I teach the clinical instructors how to instruct students.

Evaluator: What have you liked about working on this project?

Deanna: The things I liked were that we actually had the resources to do the project. We had the laptop. We had people like Darren and Mike who knew the equipment we needed to connect to the land so we could move files around. That's really novel because before we just plodded and plunked along and did the best that we could. The support was nice. We had laptops we could use.

Evaluator: Did you take them home?

Deanna: Yes. It was a summer project and we got to use them for a condensed period of time to whip the stuff out. That was really nice.

Evaluator: Were those parts of the project?

Deanna: The laptops were. We have four of them for faculty use.

Evaluator: Do they have Internet access?

Deanna: Yes, if you are connected to the LAN.

Dean: We have modems, too.

Deanna: He didn't tell us how to do that.

Evaluator: You had all the resources, equipment, and technology in place.

Deanna: It was great. I really appreciated the support because I had done a project like this before and there was no support. When I was at a crossroads trying to decide what to do or how to do it, I couldn't. It was very, very frustrating. This time I really appreciated the support and I think Darren and I were very complementary to each other. What he didn't know, I knew and vice versa. I'm really very computer literate but I didn't have some of the experience that he had. We probably produced the most technologically advanced program of all of them because it's all burned into a self-contained CD. It interacts with ATOM at the same time and will have Web support.

Evaluator: Are you creating the Web part of it?

Deanna: Darren created the Web part of it and I'm providing him with the things that go on the Web. The things that will go on the Web will be the syllabus, reading schedule, study guide which has

all the terms that you have to know, the quizzes, all the lab reports that you need and weekly updates. I can put out a weekly notice. This is what you need to be doing. This is where you should be because these are the quizzes and this is when you take them. This is also an electronic way of posting the student's grade every week. They can access it and see what their grade is.

Evaluator: Is there an e-mail system that is part of this?

Dean: No, not yet. Right now we have e-mail accounts for faculty and staff and e-mail accounts for students. There is not a singular place that you can go, that is secure, that has everything.

We are exploring a couple of different options for this. In the meantime, we are going to use what we have. We can put things up on the Web in a secure directory. The server which is part of Star Schools hasn't been registered so no one knows about it yet.

Jan: All the Allied Health courses have course address so it separates them from our personal e-mail addresses. We put those addresses on everything including the CDs, tapes, etc. We encourage the students to access us through the course e-mail address so we have a way to separate students by courses.

Evaluator: Will students interact with you through e-mail?

Deanna: We think so.

Dean: I hope so.

Deanna: We didn't mention that these are password-protected accesses on the Web-site. I wanted to point out one more thing that was a valuable tool. We were able to go into Room 129 and use the computer. The computer was feeding the monitor directly into a tape with my voice over it. It created a tutorial tape on how to use ATOM. In the past that has been a very cumbersome process getting students to know what to do when each screen comes up. Now there is a tape. We're using it in the lab and it is going to be on reserve in the library.

We're looking forward to eventually getting a bulletin board web type of access for each of the courses. We don't have that set up yet but we're headed there.

Dean: We have a UNIX system that we are running for student e-mail. We're going to go with a Web board that is password protected for a couple of reasons. That way a student does not have to have an e-mail account to participate. All they have to have is Internet access. If a student happens to be a Shoshone and they don't have a computer at home they can go to the library and get access to it. If we were going to look at a Web delivery

product that would have URLs we don't have e-mail built into our messaging system. Right now we are utilizing what we have and looking at year two to expand that a step further. As you can tell there already is a desire. One of the things here too is that you have a video delivery course, you have a CD course. The idea is not one delivery method but you have a couple of different approaches all able to meet the needs of the student on their time, their schedule as opposed to our time, our schedule.

Evaluator: Do you have easy entry and easy exit for a CD-ROM course where there is no defined beginning of the semester?

Nancy: With Anatomy you can't do that because they have to participate in the lab on campus. They will receive a schedule from me that says this is where you should be on the CD on this date. Of course you could choose to be someplace else.

Deanna: The way I understand the tracking system that the state uses, it needs to be modified to what we call open entry, open exit. Right now we're handling it on a variable entry, fixed exit because we are staying on the semester system.

Evaluator: How variable is the entry?

Jan: The faculty member teaching the course identifies the date that the student must register by. For example, in the older adult course, it's something like October 13th. They cannot register past that date and be able to complete the work by the end of the semester.

Evaluator: So there is some flexibility?

Jan: We've talked about this. For some of us this is our first time. We'd like fixing it a little bit so we can see where the glitches are. It's a lot easier to become more flexible than to become more rigid.

Deanna: My project was unique in that it is not a for credit course. It's an adult learning course for clinicians that are out in the field. It doesn't have as many technicalities like worrying about grades and passwords. It's completely flexible. It's just a CD that we're going to send out. I found the technology very easy to use. The program that we decided to use and how it all went on the CD and the CD burners that they've acquired were just a breeze. I've found them extremely easy and user friendly. That's what I really liked.

Jan: The goal with Deanna's project was to train clinical preceptors regardless of the discipline. It could be used for the

physical therapists who are overseeing students or it could be used by the search techs overseeing students or it could be used by nurses out there overseeing students not necessarily just one discipline.

Evaluator: So you have a variety of things that you can do with it.

What about problems?

Jan: What I've noticed is that they get a taste of this and their imagination expands and they see all these other things that they can do. Darren just has to mention one little thing and it's "yea, I'd like to do that".

Dean: That's actually the most exciting part. I've worked in distance learning programs in several states. This is the first place I've been that has the mix. You have motivated faculty. You have a curriculum that's well designed from the get-go. You have people that are willing to work and work extra hours especially Nancy. There's still the enthusiasm after the end of the project to say let's do it again. You normally don't get that. You guys have been great to work with, too.

Evaluator: You worked over the summer. Did you have the access that you needed?

- Deanna: Yes, we have keys.
- Nancy: For me without an adequate computer I never could have done what I needed to do and I appreciated Darren supporting that. Secondly, I couldn't have completed it without that lab. That was very fortunate.
- Evaluator: What aspects of the lab do you think are the most important components?
- Nancy: Well, the CD burner is much better and faster than any we have on the campus. The computers run at the fastest speed possible, which I need for these huge programs. There is plenty of RAM. We have the ability to scan and manipulate images that we've never had before. I frankly couldn't have produced the project without them. It's not just the scanning or the acquisition of the image. It's the ability to change the format, to crop, to expand, etc.
- Evaluator: You use Adobe PhotoShop?
- Nancy: That and Microsoft Image Composer. We would never have finished without the support. There were myself and three other people working 60 hours a week per person to pull it out.

Evaluator: Because of all the extra time that you have all put in, what do you expect back. What are your expectations? Why do you put in so much time?

Deanna: I expect it to help students. As a side benefit it will help me be a better teacher because I will not be dealing with frivolous problems. You can concentrate on teaching when you're not concentrating on frivolous, time consuming minutia.

Evaluator: Is your course going to have a live video component or is everything on a CD?

Nancy: That's just as a backup. Everything is on the CD.

Evaluator: When you say as a backup, how would it be used?

Nancy: It was used this week because the CD wasn't ready. It probably will be used as a supplement. We have the facilities to tape. I'm in the room where the tape is going on. We have lots of tapes that we just tape over. My in-class students have always enjoyed going to the library and looking at a tape over and over again. I have people that are very new to science, maybe have had very little science background or it has been so many years that they are very frightened. They need that kind of support. The plan is that the CD should stand-alone.

Evaluator: Are there segments with you speaking?

Nancy: Yes, there is one in the introduction. The rest of it is all bulleted text with objectives for each topic. There are pretests, then material. You read down a certain amount of material then it sends you out to ATOM to perform some interactive exercises. It brings you back. If it's histology there are slides with arrows and labels of what it actually looks like. When you finish this little topic you take a post test. It gives you the answers and you may go back and check to relearn that material. You can take the test over and over again and go through each unit over and over. You can exercise a find item. If you want to find a deltoid muscle it will find that for you.

Jan: Mine is bulleted text also. I have inserted sound on mine in the introduction. Darren gave me this thick book that I took home and marked all the pictures that I wanted to use. I also wanted some pictures of real people just to make it a little bit more interesting so I used pictures of my family.

Evaluator: Is your CD ready now?

Jan: Yes, it's already being used. We burned 35 copies. This course last year had an enrollment of 15 and this year has an enrollment of 36. Billie's course beat me.

Billie: It's up to 46 now. It's video.

Jan: What's interesting on that one is that she has a student in California and a student in Colorado.

Evaluator: Tell me about your video. How is that working out?

Billie: That remains to be seen. We did the videos last summer. We're getting them copied and putting them in the various centers for people who can't come to the Lander, Riverton, or Jackson areas. We're sending them their own video for the course and the tests. They need to return them to get a grade.

Nancy: We didn't charge for them because of the way we received copyright permission on some of the material we used. Our agreement was that we would not rent them, sell them or lease them. So they are basically on free loan and we hold their grade until we get them back. They sign a release which also points out that tampering with them is considered academic dishonesty. We have to get a release before we send anything out.

Billie: For the testing because we don't have it on-line we have a form that we send to them along with the materials which asks for the name of a proctor. It gives the specific qualifications for the proctor. When they send us the name of the proctor then we send all the tests to that person. They administer them and send them back.

Jan: If we are looking at one big problem, it's the form development, trying to figure out how we can make this run smoothly. What I noticed was that there were three of us developing forms. The division assistant would pull these three forms and she would come to me and say they are so similar. Can't I just combine these and make one. It's developing the processes, what goes where and how are you going to get it there and what are you going to use that's kind of new territory for some of us.

Evaluator: So your advice to a division beginning to do this would be to jointly develop the forms?

Jan: Actually my advice is to develop a centralized office here.

Deanna: We do need some continuity.

Jan: We called around to a couple of the divisions to see if they had some forms. I stopped at the telecourse office. Sharon shared everything with me. We looked at what she was using with telecourses. She's been doing this a few more years than we have. There's nothing that is uniform.

Dean: One of the biggest things for new folks as they are developing projects is copyright permission, how much time it takes and what is involved to make it happen. Each publisher is different. On Nancy's particular project it took us upwards of six weeks to get a response back from somebody. It was constant faxes and phone calls. For example, the Edison Wesley book, when we finally got to the right place, the right person to talk to which took six weeks, we secured copyright permission only to put it on the CD, no other form of delivery. We have one year and then we have to reapply for it. We can't sell it. We can't charge anything for the CDs. We can't do anything. There's a huge list of things that we have to include in the credits. I understand this. We have all been through this, too. If you put together a project it's pay me, show me the money or let me see it. On an education side even if you're using the same textbook, when you go from a live class to a video class you put it underneath the document camera, that's your copy. Thus it's being retransmitted. When you put that on videotape, now you've taken it and transferred it into a different medium. You've violated the copyright unless

you've got permission. If I come in March and we start rolling tape in April for something you already have on the schedule and you want to start the project in June, if you haven't secured copyright permission and everything you need to well before then you're going to be in rough shape or you're going to end up coming up with other images to make this happen.

Evaluator: What do you think is the appropriate lead time?

Dean: Depending on the publisher, I would look at probably sixty to ninety days prior to the start of the project to make sure you have copyright permission secured before you start the project.

Deanna: They won't give you blanket permission. You have to go through illustration by illustration. That is time consuming.

Dean: We had a few exceptions. Nancy uses a lot of ATOM images. Of course ATOM is real particular. There might be a CD for \$500 for 2000 images that we could use. You then own the rights to be able to use those images in things that you produce. You sign for that and you pay the price for it. On the administrative side, for a course say for Nancy's class, you pay the amount for her to develop the course. You look at any supplies and time and such but then in some cases you may end up having to pay a copyright charge on top of that. That might

need to be considered as projects are approved down the road because you can't always get copyright approved stuff or clip art that you can find. There are going to be certain things such as a picture of a liver where it has to be this liver. The only people who have that liver are these people. If you were a commercial enterprise and were going to make money off it that would be one thing, but we're not. We're just trying to enhance education. That is a major factor as we look at expanding other projects especially as Mountain Plains opens the copyright on a project. That's what comes back to what Jan was saying about having a centralized office or at least one entity on campus that says, okay we will coordinate the copyright permission, we will make sure that we maintain those records and that we're clear on that stuff. If there is a question, that one office handles that, not each division or school.

Deanna: You also need to make sure that the hardware and the platform can support the high tech things that you produce. We've had that problem with Authorware. You probably need at least a 200 processor, a minimum of 24 RAM and not everybody has that. Not every computer on the campus is going to run like that. You need to address those things too when you develop a course.

Dean: I know the whole purpose of a project is to develop programs and then share them with the consortium members but

there may be some constraints that you may not know about or you might have to think about ahead of time.

Evaluator: Have there been ways that you have all developed a lot of new materials?

Deanna: You don't want to see them. If you can't get the copyright, you draw them.

Jan: I think Dean is doing something a little bit different using CD-ROM. You need to explain the breadth of this project.

Dean: It's pretty all encompassing. It's a pretty hands-on sort of a field, surgical technology. To try and figure out a way to put this in terms that a student can understand and have it demonstrated for them in such a way that they can grasp what is going on is my challenge. Hopefully I can watch these people that are a little ahead of me and figure some of that out. I know they have some virtual reality things out there that would be real neat to do because it is such a hands-on field. The majority of what you are showing them is hands on. I'm having troubles figuring out just how that's going to be done. The preceptor package will have to out and the students will have to pick their own preceptors and mentors at a facility somewhere. We thought we were just going to do it in this confined area but it just keeps expanding.

- Jan: We have a partnership with the Association of Surgical Techs. We can take this program national.
- Dean: We got one signed up for it in Hawaii today. It's expanding far and wide.
- Jan: There is a conference that I am going to later this month with the Surg Tech Association, the community college, Milwaukee Technical Institute, the Army and some corporate hospitals. We're all in this together. The other two colleges are doing first assist where we're doing the entry level surg tech. The Army wants a program set up in Saudi Arabia. It's really been challenging for Dean, being new faculty, and then trying to figure out how to deliver this stuff in a way that could basically be an open entry, open exit process.
- Evaluator: How many people do you think will enroll in two years.
- Dean: We've had a lot of hits.
- Jan: One hundred and four as of this morning.
- Dean: That's quite a few. I wish I had the program in my back pocket ready to go at this point and time.

- Evaluator: It's going to be CD-ROM?
- Dean: I'd like to see it all on CD-ROM. I'm not sure about the parameters involved with videos. I know video on CD-ROM takes up a lot of space. It takes a lot of RAM. It takes a fast computer. I don't want to set the parameters so high that the students have to have technology developed in the last six months to run it.
- Evaluator: What types of things are you having problems with?
- Dean: Right now just finding the time. I have a class every day of the week from eight in the morning until twelve-thirty. Trying to find the time to put into developing these courses and getting them going is real tough. I still have a family and a home life.
- Deanna: We all do this in the summer because we're all way too busy to put that amount of work in during the year.
- Billie: An additional advantage, at least for us because we team teach, is that we've never been able to be sick and not come in because we had these long lectures to do and that sort of thing. Now that we will have all of our nursing courses on some format she can plug it in if I'm not there. It's not only the distance people that get the advantage but it benefits the people on campus too.

Jan: They also may be able to go to a conference. Your classes have to be covered. When you work in a specialty area there's not always someone who can cover it. This way there could be a way to cover the class.

Vicki Faris

Lita Burns

Nursing Instructors at CWC

Vicki: This is my ninth year here. I co-teach with Lita, Parent-Child Nursing in the fall and I also teach Medical Terminology. In the Spring I teach Mental Health and Illness and assist Lita a little bit in Med-Surge I.

Lita: I'm in my eighth year at Central Wyoming College. In the Fall I teach Parent-Child Nursing and Client in the Community. In the Spring I teach Med-Surge 1 and Nursing Trends.

Evaluator: Which courses will be on the distance learning network?

Lita: All of them but for this year it is Med-Surge I that we did at the studio.

Evaluator: When will you begin teaching that one at a distance?

- Lita: In January, 1999. It's all ready to go.
- Vicki: The lectures that I did with Lita for Med-Surge 1 are done and ready to go in January, 1999. I'm also doing Mental Health and Illness primarily as an Internet class because I don't like to lecture in that very much. It's still not quite done. It will be offered in January.
- Evaluator: Tell me about the type of support that you've gotten from the college? Tell me about the Med-Surge first since you both worked on that one?
- Lita: What was nice was that we did have the technology finally. We had access to the computers that enabled us to use PowerPoint 97.
- Evaluator: Could you use that type of equipment or program before?
- Lita: We were using PowerPoint in previous years but we had not updated to 97. It has a few more bells and whistles but it was not new to us. I had converted a lot of my lectures about two years ago. This particular course is a new course for me. I just switched to Med-Surge I last spring so I was redoing those completely new for the Jackson program. Darin was an asset in

that he was there to provide some support to us. I don't think that I utilized him as much as he would have been available for because I was already off and running in terms of preparing the lectures themselves. When I got to the studio he was a real asset in terms of telling me where to be and what to do.

Evaluator: Did they give you a lot of training in the video portion of it?
Did you feel comfortable?

Lita: I don't know that it required a lot of training. He ran through it the morning that we started. That was enough. We got what we needed but I wouldn't say that it was a lot of training. We probably did it in about a half-hour to forty-five minutes time.

Evaluator: You felt very comfortable?

Lita: Yes and they were there to coach us so there was no problem.

Evaluator: What about you, Vicki?

Vicki: I agree that we had good support with everything to get us there. Video taping in front of a camera without students is not my favorite thing to do. It's not an area where I feel like I shine. About five years ago we video taped our lectures in the

classroom. I prefer to watch those over the more technologically produced ones. They probably look nicer but I just think I do a better job in front of students.

Evaluator: It could be that if you do some more of these you could have students in there with you if you wanted to.

Vicki: Their feeling previously was that it was distracting to the students watching the tapes to have the sound noise in the classroom. We weren't always very good at remembering to repeat students' questions. Their feeling was that it looked a lot better and would be less distracting to students to just do it in the studio. The problem for me is maintaining enthusiasm for a three or four hour lecture without any students to interact with. The camera makes me a little nervous. That wasn't a problem in the classroom when the students were there. I wasn't thinking about the camera. We really don't have a classroom at this point where we can do that. We have Rooms 131 and 129 but they are booked during the hours that we have to do our class.

Evaluator: You two will never be able to use that classroom?

Lita: Not for the nursing courses. The nursing program is so intense and our courses are so long that we would tie up that classroom.

Vicki: We have managed to arrange it for some skill labs. An hour here or there we can fit in but to fit three to four hour blocks at a time isn't going to happen.

Evaluator: Are you going to be able to use the compressed video classrooms when you're working with students at other sites?

Vicki: I don't think it's in the plans at this point.

Evaluator: Do you think it should be?

Lita: Oh, yes. I think that if we could have our greatest dream come true it would be to get that type of a classroom in our building so that we could. I think if we could we would design some of our courses so that we could use it for many things. There are different places we could expand to besides just Jackson. The way the setup is now we are pretty limited. Given a classroom like that down where we are, I think that there would be lots of possibilities.

Evaluator: Do the schedules look like they are going to be busy at night as well? Saturdays, Sundays, everything?

Vicki: I think that they do have some evening classes booked in them. I don't think it's completely booked nor are Saturdays and Sundays.

Evaluator: If you feel very strongly that it would be a real help to your students or it would prevent them having to come here for testing or practicum or whatever they might be doing, could you arrange something a couple of times a semester to do that.

Lita: There are courses in the nursing program that I think will fit that sort of a schedule. For instance, in the springtime when they teach Trends, it's a weekend seminar course. That would be perfect. That will fit right in and I will probably try to book that classroom for it next year. It's a second semester, sophomore level course. That's a course that I think would fit very well over there. For the core courses in nursing it might not be feasible to go to weekend scheduling sorts of things. I know that the PTA program and the Surge-tech program both tried to do weekend courses just to utilize our campus better. It didn't work for the on-campus students because of jobs, travel, etc. Even our on-campus students travel a tremendous distance. I'm not sure it would be good use of faculty time to duplicate things to teach on the weekend. It would take some real ingenuity to try to schedule that on weekends and evenings and make it work for the core curriculum of nursing.

Evaluator: Are they for the most part now coming in for the classes?

Is that the way it works? Do you do outreach? Do you go to any other campus?

Vicki: We do not. This is the first year we have run Jackson for about five years. What we are doing currently is that they come here for the first week of their first semester along with the instructor. The instructor that is hired for those students is a clinical instructor and she'll be doing all their clinical in hospitals or nursing homes and she will also be precepting their tests. She won't be doing any actual theory. They're all here right now and our plan is to have them come at least once a semester just so that they are more part of the group. We didn't do that last time. When they graduated we didn't even know who they were. They knew us because they had seen us on video all those years but we didn't have a clue who they were. We felt like they kind of missed the college experience.

Lita: Presently we have students that come mostly from the Bighorn basin. That's where we get our biggest number of students who travel on a daily basis. In each class right now we're serving students from Dubois which is a sixty-mile drive. We also have a student from Ork Springs, which is 130 miles away.

- Vicki: She stays here during the week.
- Lita: Those students usually choose to commute and whenever they're not in clinical then they sometimes can get three day weekends until the weather prevents them from doing that because it's over a mountain pass. We do have students coming from all over Wyoming but we have not gone out to any other sites. Part of the reason we don't go out of our service area is because there are nursing schools all over the state.
- Evaluator: Is there any collaboration between any of them?
- Lita: There hasn't been to this point. I think money is going to drive that to happen in the future. That's my personal opinion. At some point in the future because we will have the technology at multiple sites I think the state will probably force us to condense at least the theory part of it and maybe have clinical sites elsewhere. If that happens I certainly hope that we are one of the primary sites in terms of the delivery because we've got so much going for us already. We've kind of laid the foundation for that.
- Evaluator: Do you think that there is any planning going on?

Lita: The political arena in Wyoming right now in terms of the community colleges is volatile at best. I think that it will take some time to get over what is going on right now and allow some people to mend some fences and begin to collaborate a little bit more. We kind of go through periods where we collaborate very well and then it sort of dissolves. It usually is around money issues because there is no money in Wyoming and we have to fight over what little money there is. The fighting over the money separates people again and they build up camps again. I think it will happen but I don't think the planning for that is going on at this point.

Vicki: Mostly it's fun and it's been a way to learn new skills and have some time to focus on classes when you weren't in the midst of teaching them. I think it's really going to improve our classes. It's kind of a growing experience personally. It's also very time consuming. I'm not really anxious to continue working that many hours a week all year long.

Evaluator: Do you feel it was because of a learning curve or was it just because it took that much time to commit the materials?

Lita: I think mostly the latter because Darin has been wonderful about doing the technology stuff for us. He hasn't expected us to take over that. For my two courses that are going to be on the Internet they've done all that. Once they have that set they are

planning to teach me the front-page so I can make modifications but I haven't had to do that yet. It's just been production of the material.

Evaluator: Is it a CD-ROM?

Lita: No mine will be on the Internet. There is one class that's videotaped but the rest of the mental health classes will be on the Internet. For distance students I'll still have a live class on campus.

Evaluator: Is he taking any of the video and turning it into quick time movies to put on the Internet?

Lita: No.

Evaluator: There are some things that he has put on CD-ROM that would work beautifully on the Web. They're just brief little clips of things. There are a lot of things that you could do that way. What about with your class?

Vicki: The truth of the matter is that in the nursing area we have been trying to make this transition for a long time. It wasn't like we took a course and completely redesigned it for this. We have been in the redesign mode for about three or four years. Lots of

the preliminary work was already in place by the time we got to production.

Evaluator: So you have been trying to integrate media and instructional technologies into your traditional face to face class.

Vicki: Yes, we have been. What has really been nice is finally having a resource person like Darin because before that we struggled and floundered on our own time. That takes a tremendous amount of time which of course we were not compensated for either up until this year. In some ways it was very nice just to get some compensation. At least you felt like finally someone appreciated everything that we were doing. I haven't watched my videos completely but I'm really pleased with the snippets that I have watched. It's going to be so nice for the students to have something that looks like it's been done professionally. I think they are going to enjoy it so much more. The only thing I have to go on is what we did several years ago and it was very amateur. We hired this lady who also ran the gift shop to run our video camera. I think the quality of the product is really something that is going to be helpful for the students.

Evaluator: Does your class have a lot of Internet as well?

Lita: The class I did for the spring does not. This Fall I am teaching a course called Client in the Community. By next Fall I have to have that completely on the Internet because it is more of a discussion class. It's not something where I can stand in front of the camera and lecture. I have to put it in a format where I can have discussion groups with distance learning students as well as on campus students. I want to integrate the two things. I want my groups next year to have on campus people and distance people in the same discussion groups because I think it will add to the knowledge. That's going to be my challenge for next year is to get that designed. That will be really different for me. That will really be taking some knowledge and material I already have and putting it in a completely different content.

Evaluator: Do you consider yourself to be a facilitator?

Lita: Yes.

Vicki: Yes.

Evaluator: Have you gone through training in that area or how do you come to being a facilitator?

Vicki: I have probably come to that partly through experiences with students and partly through conferences that we've attended,

nursing education conferences over the last few years where more and more the goal has been not to spoon feed the students. They'll learn more and be better critical thinkers. They'll be able to gather new information and make decisions when they're out of here much better if we're not just spoon feeding them and teaching them how to take tests. Our goal has been to do that for a number of years but it is time consuming.

Evaluator: Has that been at the departmental level? Is that something Jan has put into place?

Lita: I think that it has been at the departmental level but I'm not sure that it was a directive from Jan. Jan certainly is a role model in it in that she herself is a very dynamic lady and is continually wanting to learn and change and have the latest and greatest. She sort of provides that role model for us. She hasn't told us we had to do it but certainly we wanted to be on the bandwagon without a doubt. So we jumped right in there and made sure it was happening for us too.

Evaluator: Has anyone provided you with enough information about students as distance learners, their needs and how they differ?

Lita: I was the assessment person here at the college when it originated and so I did a lot of traveling nationally to different

conferences about assessment. In addition to that I attended a conference last fall in Phoenix on distance learning. I think I've gained a lot of knowledge about distance students. Vicki also went to a conference basically the same.

Vicki: Yes, in Indiana this summer. We also had some presentations here last January from Utah. I think what I picked up from Indianapolis is that our distance students who happen to be in nursing will probably be very well suited for this. They're feeling was that the students that did best were older. They had jobs, they had families. They really appreciated the opportunity to be able to continue their jobs and continue to take care of their families, have a life, and be able to further their education without disrupting everything. That pretty much fits the profile of the people who come into our program. We don't have very many 19-year-olds fresh out of high school whether they are on campus or off. I think for them it will probably work all right. Certainly there was the implication that it's going to involve a lot of personal effort on their part and probably a lot more time for the faculty in order to facilitate that as well as carry on your regular on campus load.

Evaluator: Is there a nursing library or other resources that they're going to need in order not to feel isolated?

Lita: They are coming to campus. They are spending three days here this week and then they probably won't be back the rest of the semester. I know I don't have plans to bring them here next fall for Med-Surge I but Vicki has something in mind to bring them to campus. Most hospitals have a resource library. We all pretty much share the same sort of books. I think our own little hospital's library probably has as many resources in terms of journals and books and things like that as we hold for them here on campus. I'm hoping that they will use that as a resource and now I think we're going to have to rely heavily on the Internet.

Evaluator: Are these free sources?

Lita: Most of them are free. If a student wanted to, for about twelve to fifteen dollars a semester, they could subscribe to the University of Colorado's library. Last year I had a free preview for a month of it. You could get anything you wanted.

Evaluator: Are those full documents?

Lita: Yes.

Vicki: Even our on campus students tend to use that source more than they do their library now.

Darin: This is what I want to do here. These folks are very busy. They are very talented but they only have so much time. I want to make it as easy as possible for them. I want to make sure that they have access especially at home on Sunday morning or in the evenings. They can do it when it is convenient for them. It's also secure enough so that somebody in Maryland isn't going to borrow their stuff. If it works I want to go beg. I can beg real well and come up with money and we'll figure out how to do it. I'd like to get a conferencing system or some sort of a Web core system. I'll be doing some of that research when I get back next week. We're 90 percent close on getting hers up and running but if there were something easier out there then I'd like to look at it.

Evaluator: Virtual reality with a haptic tool could be quite useful?

Vicki: Yes that would fit very well within this framework too. It would be perfect for that.

Lita: Surgical Technology is a program of its own aside from Nursing.

Evaluator: Would the course that you are teaching together, Medical Surgical Nursing, have any application with this?

Lita: I think that every aspect of nursing could have application with this if it's done well. I don't think there is a course in nursing that you couldn't teach through this.

Vicki: It would be really awesome for skills such as giving I.V. injections, starting IVs or putting in catheters.

Lita: It would be great to be able to do that before we take them to a clinical setting where they actually work on patients. Right now, for many of their skills they work on each other. There are certain skills we don't require such as putting in a catheter. Wouldn't it be nice to be able to use that little tool and direct the catheter into the urethra on a female, on an elderly female, on a baby female? Right now we have these models that are hard plastic and their urethras are this big and it's not too hard to hit. When they get into a clinical setting it's like, "she doesn't have one". It would be wonderful.

Evaluator: Virtual reality is becoming much more affordable.

Lita: There is a surgeon in Denver that is doing surgery from his home. I saw it on the Channel 4 news about a month ago. It was on a child. I can't remember what kind of surgery it was. He manipulates a computer at home, which communicates with a computer in surgery.

Evaluator: Are you doing other types of telecommunication or telemedicine? There are a lot of things out there particularly for rural areas.

Lita: I don't think a lot of that is going on here.

Vicki: I think maybe the Radiology department does a little bit of that sort of stuff at the hospital but I don't know how much. I have read several articles recently particularly about school nurses doing that. I don't think there is much of that going on in Wyoming. I don't know why. It certainly would be an ideal place for it as scattered as our population is.