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Mountain Plains Distance Learning Partnership

STARS

**Seamless Technology
for Access
by Rural Schools**

Star Schools Project

Evaluation Report 1998-1999

September 30, 1999

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Mountain Plains Distance Learning Partnership

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Evaluation Overview

This is the final evaluation report for the Mountain Plains Distance Learning Partnership STARS Project for the 1998-1999 grant year. This is the second year of the five year Star Schools Grant from the United States Department of Education. The grant began in 1997 and will continue through the year 2002.

Evaluation Activities

A number of evaluation activities were conducted. The full evaluation research design plan for the five years of the Project appears in Appendix A.

Evaluation activities included site visits, instrument statistical analysis, meetings required by OERI, planning for the Performance Indicators required by OERI, meetings with STARS Project administrators regarding the 1999-2000 research design plan to evaluate student and instructor learning impact.

The evaluator conducted two site visits for a total period of six days. The evaluator attended two Partnership Board meetings, both of which were held in Riverton, WY.

Focus interviews were conducted in person and through audio conferences with STARS Project administrators, staff, instructors, the STARS Project Board of Directors, and other participants in the grant. Full transcripts of the focus interviews appear in Appendix C of this report.

Survey instruments were prepared by the STARS Project staff and sent to instructors and students. Questions were both quantitative and qualitative. Statistical analyses were prepared for both instruments and are included in this report. Qualitative matrices were prepared for both instruments and are included in this report.

Other evaluation activities included participation in the monthly Star Schools Evaluators' audio conference calls and in the Star Schools Directors' and Evaluators' meeting in December, 1998, in Washington, D.C.

Star Schools Performance Measures and Benchmarks

The Star Schools Performance Measures and Benchmarks materials were reviewed for the Project. Comments were forwarded to Westat, the organization that is working on the performance measures survey instrument. Because of the technology basis for the project's first two years, very little of the form was applicable. Of the courses that have been developed under the auspices of the

grant, only a few pilot courses were offered which were able to use the broadcast systems put into place by the STARS Project.

STARS 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. The institutions providing leadership for the Project are the College of Eastern Utah and Central Wyoming College.

STARS is an acronym for “Seamless Technology for Access by Rural Schools.”

The STARS Project utilizes a variety of technologies to provide two specific activities to its four-state service area.

- Create a telecommunications infrastructure
- Provide instructional programming for students who otherwise would not have access to such courses.

Telecommunications Infrastructure

A major activity of the STARS Project was to build a telecommunications infrastructure. The installation is taking part in phases. Phase I focused on the components of the system that were geographically the closest to Riverton, WY. The installation and build out of Phase I the system took two years to complete. It provides connectivity for video and Internet. The system provides live, interactive, full motion, two-way audio and video capabilities. It uses a fully scalable, high

speed, digital ATM microwave technology that provides extensive infrastructure for Wyoming.

Distance education sites feature electronic classrooms with both receiving and transmitting capabilities. Sites can also access available programming from satellites and the Internet.

The project uses microwave transmission. Microwave was selected because ongoing expenses are less for participating institutions. Many of the institutions have limited resources to operate the microwave system and to maintain it.

The low ongoing costs have been a great factor in gaining support and commitment from the community and educational institutions. Project administrators feel that the low costs will be a significant factor in the ongoing use of the project beyond the period of federal Star Schools funding.

The schools assume the cost of acquiring the video classroom equipment, providing an on-site facilitator, and providing some technical support.

Initially, the bandwidth is comprised of eight T-1 lines available to all of the schools in the Wyoming initial build-out. During at least the first eight years of the contract, there are to be no charges to the participating schools. Specifically there will be no hourly, monthly, line, or maintenance charges. It is a free distribution system to the schools.

The STARS Project has agreed to utilize the data services through the state system. It is up to the individual schools to contract with an Internet service provider (ISP).

Instructional Programming

The second major activity of the STARS Project is to provide instructional programming to be carried over the new distance education system. Courses were identified and developed during the first two years of the Project.

Instructors received extensive professional development during this time period in the areas of instructional design, software use, and facilitation skills for video and the Internet.

Providing Equitable Access: The STARS Project provides access to an economically depressed area. The population is small and people are widely dispersed throughout the four-state region served by the Project. In most cases, the courses that will be made available through the STARS Project would not otherwise have been available to students.

Native American Populations: A priority of the STARS Project has been to provide service to Native American populations. Complete courses on Native American language, literature, history, and culture have been or are in varying stages of development. Wherever appropriate, teachers have been directed to incorporate Native American issues such as culture into the curriculum materials as they are being developed.

Instructors: Prior to the STARS Project, most schools were able to provide only limited curricula because it is difficult to recruit qualified instructors in advanced core area subjects. Instructor retention is also a problem in this region.

The vehicle that now addresses many of these problems is the STARS Project. The technology serves as a bridge to provide student access to qualified instructors and courses that they need to improve their economic outlook and opportunities. This type of access has been available to urban and metropolitan schools, and in many cases has been made available to rural schools. However, this is the first project in the region that enables the collaboration between institutions to provide access for all learners.

Service Figures

The STARS Project has served 3,509 students, adults, teachers and administrators, through the delivery of ninety-four courses. In its proposal, it was projected that by September 30, 2002, the Project would have served 3,000 learners. That projection was met and exceeded by the end of the second year of the STARS Project.

The project has served thirteen school districts. This included twenty-one public schools and three Bureau of Indian Affairs Schools which were located on eleven Indian reservations. An additional five post high school and/or community centers were served.

Courseware: A total of fifty-five courses have been developed. Some of the courses taught in Utah were developed previously under the Four Corners Project Star Schools Grant.

Courses include core subjects for Kindergarten through twelfth grade, and other courses were developed for adults. Core subjects focus on English, mathematics, and literacy. Courses for college level students have also been developed and cover a broad array of content.

Student Support for Distance Education Courses: Students shall receive training and continuing support to guide their adjustment to the new telecommunications system.

Two student orientations to online learning workshops were held in August 1999 and taught by Darrin Cheney. Ten college freshman participated in the Medical Terminology Workshop and twelve second year students participated in the Client in the Community workshop.

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.

Teacher/facilitators participated in seminars in the spring of 1999 to help teachers understand the new needs that they will see in students, and how to provide support for students in distance delivered classes.

It is recommended that in addition to the specific session addressed above, 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.

Currently, all students enrolled in distance education courses receive an information packet concerning that course. An orientation meeting is scheduled prior to the first day of class so that students and instructors are introduced. They review the course syllabus, and answer any questions the student may have concerning the course. Based on responses from students, this is not sufficient to help them easily transition into distance learning courses.

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, and providing proctoring services. Teachers need to have the same type of support services for students as they receive for traditional classes. 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.

Professional Development for Instructors

The STARS Project provides comprehensive professional development for the instructors. Components of the professional development program cover the use of technology for curriculum development and techniques for effective course delivery via telecommunications.

Instructional Programming Centers: Instructional Programming Centers were established. The Centers provide instructors' access to state-of-the art technology and full-time support staff. Members of the staff act as coaches and mentors for instructors who are designing interactive multimedia instructional materials.

Workshops were attended by a total of sixty-eight instructors from Colorado (23), Utah (16), and Wyoming (29). Darrin Cheney, Instructional Technologist for the STARS Project, provided training and technical support for instructors as they developed and then delivered courses as part of the STARS interactive multimedia curriculum. Hours of individualized professional development were provided to instructors as they converted courses from traditional classroom format to mediated instructional designs appropriate for an advanced distance learning system.

A special workshop was held in May, 1999 for Authorware training. Seventeen instructors from Wyoming attended the five day session. Instructors attended the Star Schools Summer Institutes, a faculty pre-service orientation conducted by the Utah Education Network for 27 faculty during the

Central Wyoming College pre-service orientation, and a Technology Fair held in Riverton, WY which was attended by about seventy-five members of the community.

Partner schools in Colorado and Utah were provided with technology training by Darrin Cheney at a site in Cortez, CO. The five day training schedule included Internet training, Web publishing software for teachers, Microsoft Word Training, Computer Basics for the Internet, and individual meetings. The day and evening sessions were attended by seventeen employees of partner schools.

Continuing professional development for instructors: Darrin Cheney is available to work with any teacher in the electronic classrooms to ensure that they are comfortable with the technology. He supports all teachers within the STARS Project partnership. If teachers or administrators identify specific needs, he will create a workshop to meet the needs. Workshops can be held at the teachers' site or at the Central Wyoming College site. Workshops can also be offered over the STARS Project Network. Each site has the ability to record the workshops and can use the tape for future reference.

Technical training opportunities were provided for K-14 teachers. The inservice workshops provided training in a variety of computer software programs, Internet software, distance learning syllabus development, CD-ROM development, PhotoShop, video presentations, PowerPoint presentations, and other necessary software content.

The courses specifically assisted K-14 teachers with the integration of technology into their curricular materials. Courses also helped teachers develop a level of comfort with technology so that they could easily use technology in their classrooms.

The classroom technology training classes included software programs such as Access, Windows 95, Microsoft, PowerPoint, Microsoft Word, Microsoft Excel, Encarta Encyclopedia, Magic School Bus Software, computer assisted Instruction, and Internet browsers.

A complete listing of STARS Project instructional programs and professional development programs for instructors which were offered during 1997, 1998, and 1999 is shown below (see Table 2).

Professional Development for Administrators

Administrators have also received professional development to support their new roles and responsibilities in the distance education program. The Administrators' Seminar was conducted by the Utah Education Network. Eighteen school administrators in Colorado and Utah participated in the seminar (see Table 1).

Other Professional Development

Other professional development activities were scheduled. Central Wyoming College hosted the second annual Microsoft Technology Conference from May 16-18, 1999. It was attended by over 200 information technology professionals, community members, and high school students (see Table 1).

About 157 parents have participated in distance education activities. Many of these parents have Kindergarten through twelfth grade students who will take courses that will be delivered in the third year of the STARS Project.

Technical Training for Technicians

Telecommunications Technician, Mike Nielson, supervised the installation of the telecommunications system and electronic classrooms. This included providing training for a total of ten site technicians. Four site technicians were trained in Wyoming and six site technicians were trained in Utah.

Control Center Supervisor, Bruce Fiordalisi, manages the Technical Operations Center at the Wyoming hub. He has provided professional development for instructors in skills to be successful in delivering courses over a video network. He has also trained support staff at the receiving classrooms. Sixteen staff and instructors have received training in Wyoming, Colorado and Utah (see Table 1).

During May, 1999, Lonny Fairfield, Wyoming Public TV broadcast technician and Mike Nielsen, MPDLP Telecommunication Technician participated in a course in FarScan for Windows with DVA multimedia CD-ROM. This microwave radio course was provided through Harris Communications, San Francisco.

Curriculum Development

During the period of time when the equipment and transport systems were sent out for bid, acceptance and installation, instructors were asked to submit proposals to teach courses on the new system. Proposals were received from the instructors and a number of them agreed to redesign their courses during 1997-1998. The Partnership approved twenty-seven projects for curriculum redesign. This represented about a twenty-five percent increase over what was originally proposed. Instructors 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 videotapes, PowerPoint presentations, and microscopy with the instructor. The course is designed for delivery from CD-Rom and examinations are 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 the World Wide Web.

Web Resource Site: Montezuma-Cortez School, CO, provides a comprehensive overview of the Ute Mountain Ute Tribe which will include streaming video interview sessions and 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, Bureau of Land Management (BLM) and Forest permits and other items.

Pathophysiology: College of Eastern Utah, Blanding UT, will 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, will provide parent/child activities to reinforce reading in the home, a program of pre-reading and beginning reading skills training to better prepare at-risk children in grades Pre-K-2; and will provide easy reading 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.

The courses listed above are to be offered on the STARS Project system during the Fall of 1999. The course selection for students ranges from nursing, English, Spanish, science, agriculture to Native American Literature. The

instructors are from Central Wyoming College, Shoshoni, WY, Fort Washakie, WY, Thermopolis, WY, Colorado and Utah.

Another request for proposals for course design was 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.

During the second year of the grant, thirty-eight courses were approved for development. Due to the fact that some teachers did not renew their contracts and would be returning to one of the partner schools, some redesign applications were voided. The final approved list contained thirty-three courses which developed by Utah, Colorado and Wyoming.

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. STARS Project staff also met with the College of Great Falls to coordinate potential distance learning courses.

Thus far, the Partnership has produced about one-hundred hours of finished video and has assisted instructors with the development of CD-ROM based course materials and other course resources. A substantial group of materials has been produced for nursing and allied health courses. While the courses have been taped, they could not be delivered via distance because the system was

still under installation. However, the videotapes and CD-ROMs will be used beginning in the Fall of 1999.

Teachers from K-12 partner institutions have also participated in the workshops and received support from Darrin Cheney, STARS Project instructional technologist. Local teachers participated in multi-media training at Central Wyoming College. Four sessions were held in June 1999. Each session lasted one week and was offered for three hours of credit.

Teachers had to apply to attend the workshop. Along with a letter of support from their principals and applications, they had to describe a multi-media project that they would use in the classroom. The workshops provided custom training based on what they have defined as a need for their classroom.

Workshops focused on showing teachers how to integrate technology into their lesson plans. Curriculum development included preparing PowerPoint presentations, downloading resources from the Internet and incorporating them into the curriculum, and using a laptop and video projector. They practiced using the interactive video and audio provided by the network.

A third request for proposals was issued in September 1999. Sessions were held at Central Wyoming College for eight CWC faculty on September 28, 1999. A separate session was held at CWC and via the STARS Network on September 30, 1999, for K-12 faculty. Twenty-three people attended the session. Each session lasted 1.5 hours. Collaboration between college and high school educators in the development of a seamless curriculum in core subject areas

was particularly encouraged in this round of proposals. Proposals for technology-based curricula designed for disadvantaged students, Native Americans, and ethnic minorities in core subject areas were highly encouraged.

The resources for successful applicants included stipends for course re-design, technical assistance, curriculum design assistance, and access to the latest software and hardware. Darrin Cheney facilitated the sessions.

As part of the curriculum development process, faculty prepare the following materials for their course:

- Cover with MPDLP copyright
- Instructor biography
- Program overview
- Course syllabus
- Course map
- Lesson plans
- Quizzes and/or examinations
- List of required teaching resources
- Course pre-requisites
- Copyright Clearance Letters
- Bibliography

The instructional technology is based on their prepared curriculum guide, the media files which they prepare, and an assessment plan.

The project assessment includes a project summary report which covers how they met their original proposal objectives, changes that were made and why the changes were made. A project assessment tool is produced. Finally, the project assessment produces the project results which includes the number of students participating in the course and the individual and collective student outcomes.

Table 1 has been prepared to show the entire range of courses that have been approved, redesigned, and produced during the first two years of the project. The table also includes all of the professional development courses that were offered for the instructors. The table was designed to be inclusive and shows an extensive amount of material about each course. Headings provide the course name, location, attendees (where the names are available), the total number of participants, the attendees location, the class length, non-credit or credit designation, instructor, the course produced deliverables, the date of approval for redesign, the date of redesign, and the date the course was first offered. The last two columns show when the course was offered in the 97-98 or 98-99 school year.

Table 1 is intended to show the great depth of work that has been completed in curriculum development during the first two years of the STARS Project. Because the STARS Project was proposed and approved as a total build-out and installation of a sophisticated telecommunications system, courses could not be

offered until the system was built. No other telecommunications system existed in the geographic area to be served by the STARS Project.

A few courses were offered as pilots during the spring of 1999. However, the system was not yet complete and the courses could not be delivered over the system. The first semester that courses could be delivered over the system was Fall, 1999.

Teacher training, curriculum development, and programming have been emphasized in this part of the grant. The MPDLP Grant has offered programs and training to over 600 teachers in the use of technology and multi-media training in the classroom.

Table 1

STARS Project Instructional Programs and Professional Development

Legend:

Curriculum = CUR
 Approved = A
 Redesigned = R

Spring = SP
 Summer = SM
 Fall = FL
 Winter = WN

Course	Location	Attendees	# Total	Attendees Location	Class Length	Credit	Instructor	Course Produced Deliverables	Approved & Redesign	Date First Offered	Offered 97-8	Offered 98-9
American Gvmt-POLC 1100	UT		NA			12UT	Clifford Coppersmith	CUR	A 1998-1999			
Biology II-LS1200	UT		NA				Mike King	CUR	A 1998-1999			
Chemistry CHM 1110	UT						George Uhig	CUR	A 1998-1999			
Intro to Psych – PSY101	UT						Kevin Simpson	CUR	A 1998-1999			
Keeping the Oral Tradition Alive	UT		NA				K.C. Benedict	CUR	A 1998-1999			
Guidance/ Career Development	UT		NA				John Dowell	CUR	A 1998-1999			
Career Exploration	UT						LeAnn Shumway	CUR	A 1998-1999			
Human Physiology	UT		NA				Dean Bell	CUR	A 1998-1999			
American National Government	UT						Robert McPherson	CUR	A 1998-1999			
Pathophysiology II	UT	Voided					Pamela Decker	CUR	A 1998-1999			
Summer English & Reading	UT		NA				Lyle Nielson	CUR	A 1998-1999			
Reading with Navajo Emphasis	UT		NA				Paul Dejoshua	Website	A 1998-1999			
UTE Contemporary Life	CO	Voided				10 CO	George Schumpelt Geri Sanders-Klein	Website	A 1998-1999			

Table 1: STARS Project Instructional Programs and Professional Development (continued)

Course	Location	Attendees	# Total	Attendees Location	Class Length	Credit	Instructor	Course Produced Deliverables	Approved & Redesign	Date First Offered	Offered 97-8	Offered 98-9
Technical GED Math Prep	CO		NA				Monique Clermont	CUR	A 1998-1999			
Experiential Learning Series	CO		NA				Pat Thomas	CUR	A 1998-1999			
Fundamentals of Accounting I	CO						Wendy Brassfield	Video Website	A 1998-1999			
HS Drafting	CO						Jeffrey Wilson	Web Materials	A 1998-1999			
Rural EMS Course	CO						Randy Smith	CUR	A 1998-1999			
Tech Training 6-12	CO						Karen Webster	CUR	A 1998-1999			
Auto Electrical System	CO		NA				Robert Duncan	CUR	A 1998-1999			
Electric Science Field Trip	CO						Dave Umbarger Jan Lytle	How to Website	A 1998-1999			
Vocabulary Development	CO	Voided					Stan Dunlap	CUR	A 1998-1999			
Increase Effective Reading & Writing Skills in Middle School			NA				Mary Davis	Internet	A 1998-1999			
8 th grade Science Standards	WY		NA			11 Crs WY	Jeff Bradley Scott Hemmingway	CUR	A 1998-1999	Hope to use SP00		
Internet Research	WY		NA				Mindy Young	CUR / Website	A 1998-1999			
Spanish	WY		NA				Troy Young	Website	A 1998-1999			
Writing for Science "Sense of Place"	WY		NA				Stephen Raines / Michael King	Website	A 1998-1999			
Writing Center	WY		NA				Ann Avery	Website	A 1998-1999			

Table 1: STARS Project Instructional Programs and Professional Development (continued)

Course	Location	Attendees	# Total	Attendees Location	Class Length	Credit	Instructor	Course Produced Deliverables	Approved & Redesign	Date First Offered	Offered 97-8	Offered 98-9
NRST 1520 Client Comm I	WY		23	Thermopolis, Riverton, Jackson, Hudson, Lance Creek, Lander	40 Hrs clinical required Student paced	2	Lita Burns	Website	A 1998- 1999	FA 99		9-99
NRST 2130 Med Surg Nurse II	WY	Voided					Billie Dutcher Sherry Herbert	CW131/ Video Tape	A 1998- 1999			
NRST 1525 Client Comm II	WY	Voided					Jane Rogalski	Website	A 1998- 1999			
Wellness	WY		18	Riverton, Lander, St. Stephens, Wilson, Jackson, Dubois, Arapahoe, Ethete		2	Nancy Larson	CD-ROM	A 1998- 1999	FA 99		9-99
Criminal Justice	WY		NA	Hopes to offer this course FA00. Is using the interactive portion of this project for his Criminal Legal Procedures class as a tool in CUR this FA99			Jeff Hosking	Website Inter- active	A 1998- 1999			
English 1010-08	WY		19	Riverton, 1Lander- Senior HS	1 _ hr	3	Wes Connally	Video Network	A 1998- 1999	FA 99		9-99
English 1010-60	WY		9	Tallahasee FL, Riverton, Lander, Shoshoni, Arapahoe	Student paced	3	Wes Connally	Internet	A 1998- 1999	FA 99		9-99
ABE GED	WY		NA				Pauletta Augustine, Peggy Forbis	Internet	A 1998- 1999			
Effective Reading & Writing	WY		NA				Mary Davis		A 1998- 1999			
NRST 1110 Mental Health & Illness	WY						Vicki Ferris Asst. Professor of Nursing		R 1997- 1998			

Table 1: STARS Project Instructional Programs and Professional Development (continued)

Course	Location	Attendees	# Total	Attendees Location	Class Length	Credit	Instructor	Course Produced Deliverables	Approved & Redesign	Date First Offered	Offered 97-8	Offered 98-9
Art 1110 Design 2D	WY		7	CWC	1 _ hrs	3	Willis Patterson	CUR	R 1997-1998		FA 98	
Art 1110 Design 2D	WY		11	CWC	1 _ hrs	3	Willis Patterson	CUR	R 1997-1998			FA 99
Span 1010 Spanish 1	WY		32	Dubois, Riverton, Lander, Kinnear, Shoshoni, St. Stephens, Jackson, Ft. Washakie, Thermopolis, Ethete, Rawlins, Kelly	Tele course	4	Marilu Duncan Instructor of Spanish	Video	R 1997-1998	FA 99		9-99
Clinical Assist. Training	WY		NA	Instruction of Adult Students in the workplace for Instructors. It is designed to be an introduction to provide the instructor with basic tools they will need to effectively instruct students in a Health Care environment		NONE	Deanna Dye Instructor of Physical Therapy		R 1997-1998			
NRST 1400 LPN Transitions	WY		NA				Jan McCoy Division Chair of Allied Health		R 1997-1998			
NRST 1050-60 The Older Adult	WY		32	Thermopolis, Arapahoe, Riverton, Jackson, Juliet MT, Lander Afton, Sundance		1	Jan McCoy	Internet	R 1197-1998	FA 98		
NRST 1050-60 The Older Adult	WY		23	Lander, Riverton, Jackson, Dubois, Ft. Washakie, Thermopolis, Pavillion, Shoshoni		1	Jan McCoy	Internet	R 1197-1998	FA 99		9-99

Table 1: STARS Project Instructional Programs and Professional Development (continued)

Course	Location	Attendees	# Total	Attendees Location	Class Length	Credit	Instructor	Course Produced Deliverables	Approved & Redesign	Date First Offered	Offered 97-8	Offered 98-9
Real World Math	WY		NA	Used as a tool for his class, but not offered as a course at this time.			Roger Melton Professor of Mathematics		R 1997-1998			
7th Grade National Science	WY		25	Ft. Washakie		Elementary	Jeff Bradley Technology Coordinator		R 1997-1998	SP 99		
Intro Spanish Language	WY		NA				Troy Young Spanish Teacher		R 1997-1998			
Multicultural Video	CO	Offered on the Internet. Unknown	NA	National	On going		Alice Wise Adult Basic Ed Grant Writer		R 1997-1998	FL 97 98		SP
Complete Library Serv.	UT		31	4 sites	10 weeks	3/4 hrs	Jared Brown technology Virgil Caldwell Small Business Coordinator / Teacher		R 1997-1998	1/98	WN SP 97 98	
Farm and Ranch	UT		19	1 site	30 hrs	NA	Joseph Barton Elementary School Teacher		R 1997-1998	6/99		SM 99
Multi-Generational Family Literacy Reading CUR	UT						Carol Barton Special Ed & Adult Ed.		R 1997-1998			
Pathophysiology I	UT		NA				Pamela Decker Nursing Instructor		R 1997-1998			
Computing Safety	WY	Faculty, staff, and administrators	150	CWC		NONE	Darrin Cheney Kevin Shultz Jeff Hosking	Seminar				1/99

Table 1: STARS Project Instructional Programs and Professional Development (continued)

Course	Location	Attendees	# Total	Attendees Location	Class Length	Credit	Instructor	Course Produced Deliverables	Approved & Redesign	Date First Offered	Offered 97-8	Offered 98-9
Interactive Video System	WY	9 faculty : Jeff Hosking, Roger Melton, Princess Killegrew, Donna Olson, Nancy Larson, Marilu Duncan, Billie Dutcher, Kris Greeny, Carol Reardin	9	CWC	1-1/2 day	None	Darrin Cheney Bruce Fiordalisi	Each faculty member designed and taught a 5-minute lesson utilizing the technology in the MPDLP DL class				1/99
Website Design using Microsoft FrontPage 98	CO	Teachers Jill Hutcheson, Patty Thomas, Paula DeJoshua, Bob Duncan, Dave Umbarger, Wendy Brassfield, Mary Davis, Karen Webster, Jeff Wilson, Randy Smith, Heather Young, K.C. Benedict, Pam Decker, Leecy Wise, Patty Thomas, Stan Dunlap, Mitzi Wallace	17	Pueblo Community College, Whitehorse High School, San Juan Basin Vo Tech, Cortez High School, CEU – Blanding, UT SWBOCES, Elementary School	1 day	None	Darrin Cheney	Each participant created 4 simple Websites and received teaching re-sources for the class-room.				1/22/99

Table 1: STARS Project Instructional Programs and Professional Development (continued)

Course	Location	Attendees	# Total	Attendees Location	Class Length	Credit	Instructor	Course Produced Deliverables	Approved & Redesign	Date First Offered	Offered 97-8	Offered 98-9
Microsoft PowerPoint Workshop	WY	Social work class	8	CWC	3hrs	None	Darrin Cheney	Each student designed minute presentation				2/99
Introduction to Multi-Media	WY	Teacher education class	21	CWC	3 hrs	3	Darrin Cheney	Future teachers saw an example of how technology can be used in the class				3/99
Brainstorm Session to discuss ways to utilize the Star Schools interactive classrooms	WY	Partnership Schools: Beverly Wilhelm, Robyn Tillman, Molly Hof, Steve Hoff, David Treick, Kim McKinnon, Tammy Cox, Jerri Boesch, Blake Snyder, Chuck Gomendi, Garry Trautman, Jerry McDonnell, Emma Applehans, Joleen M. Quiver	14	Ft. Washakie, Riverton Middle School, Riverton High School, St. Stephens, Lander S. Elementary, Wind River High School, St. Stephens	5hrs	None	Darrin Cheney	Several innovative ways to utilize Stars Schools network were explored. Teacher training was one topic discussed	Meeting			3/12/99
ITEC Teacher Education Class Multimedia Lecture / Demonstration	WY		21		3hrs 5days	3	Darrin Cheney					3/16/99

Table 1: STARS Project Instructional Programs and Professional Development (continued)

Course	Location	Attendees	# Total	Attendees Location	Class Length	Credit	Instructor	Course Produced Deliverables	Approved & Redesign	Date First Offered	Offered 97-8	Offered 98-9
<p>1. Distance Learning Opportunities for Students, and Using the Internet and Email in the Classroom.</p> <p>2. Using PowerPoint for Instruction and Student Presentation, Designing a Lesson</p> <p>3. Using word and the Internet with Students- Designing a Lesson</p> <p>4. Using Excel and the Internet with Students- Designing a Lesson</p> <p>5. Web Page Design for You and Your Students- Planning a Unit/Lesson</p> <p>6. Distance Learning, Web Page Design and Email</p>	WY Lab	Teachers, Staff, & Administration St. Stephens: Joe Chizek, Aleta Gould, Andrea Richardso, Babs Kruse, Chere' Gilbert, Christi Richard, Evelina Blackburn, Gerri Boesch, Gina Enos, Jake Bell, Lori Ute, Nancy Groover, Norm Moss, Steve Lanham, Virginia Widmayer, Maureen Matson, Darlene Powell, Kelly Johnson, Jodi Dieu, Joe Smith	21	St. Stephens	One 3-day class	1	Darrin Cheney					3/23-5/99
ITEC 2100SA Basic Windows 95	WY		14	Riverton, Shoshoni, St. Stephens	2/18-3/18/99	1	Martha Brown	Knowledge of Basic Windows 95	SP99			2/18/99
ITEC 2100SB Basic Windows 95	WY		9	Riverton, Ft. Washakie, Wind River	1/23/99-2/6/99	1	Martha Brown	Knowledge of Basic Windows 95	SP99			1/23/99

Table 1: STARS Project Instructional Programs and Professional Development (continued)

Course	Location	Attendees	# Total	Attendees Location	Class Length	Credit	Instructor	Course Produced Deliverables	Approved & Redesign	Date First Offered	Offered 97-8	Offered 98-9
ITEC 2101SA Basic Word	WY		14	Riverton, Shoshoni, St. Stephens	1/12/99- 2/9/99	1	Terri Svilar	Know- ledge of Basic Word	SP99			1/12/99
ITEC 2101SC Basic Word	WY		6	St. Stephens, Wind River, Shoshoni, Riverton	1/23/99, 1/30/99	1	Terri Svilar	Know- ledge of Basic Word	SP99			1/23/99, 1/30/99
ITEC 2102SA Basic Excel	WY		11	Riverton, Arapahoe, Shoshoni, St. Stephens	2/16/99- 3/16/99	1	Terri Svilar	Know- ledge of Basic Excel	SP99			2/16/99
ITEC 2103SA Basic Access	WY		10	Riverton, St. Stephens	4/1- 29/99	1	Terri Svilar	Know- ledge of Basic Access	SP99			4/1/99
ITEC 2105SA Intermediate Win 95	WY		11	CWC, Riverton, St. Stephens, Wind River	4/1- 29/99	1	Martha Brown	Know- ledge of Inter- mediate Win 95	SP99			4/1/99
ITEC 2105SB Intermediate Win 95	WY		9	Ft. Washakie, Shoshoni, Riverton, Lander	2/27/99, 3/17/99	1	Martha Brown	Know- ledge of Inter- mediate Win 95	SP99			2/27/99
ITEC 2105TA Intermediate Win 95	WY		3	Thermopolis	2/2- 18/99	1	Troy Young	Know- ledge of Inter- mediate Win 95	SP99			2/2/99
ITEC 2106SA Intermediate Word	W Y		16	Riverton, CWC, Shoshoni, St. Stephens, Wind River	2/18- 3/18/99	1	Terri Svilar	Know- ledge of Inter- mediate Win 95	SP99			2/18/99
ITEC 2107SA Intermediate Excel	WY		7	St. Stephens, CWC, Shoshoni, Wind River, Riverton	3/30- 4/27/99	1	Terri Svilar	Know- ledge of Inter- mediate Excel	SP99			3/30/99

Table 1: STARS Project Instructional Programs and Professional Development (continued)

Course	Location	Attendees	# Total	Attendees Location	Class Length	Credit	Instructor	Course Produced Deliverables	Approved & Redesign	Date First Offered	Offered 97-8	Offered 98-9
CMAP 1515LA Internet	WY		16	Lander	1/11-2/8/99	1	Paula Hunker	Knowledge of Internet	SP99			1/11/99
ITEC 2110LD Encarta	WY		13	Arapahoe	1/27-3/17/99	1	Darlene Haram	Knowledge of Encarta	SP99			1/27/99
ITEC 2106LA Intermediate Word	WY		13	Lander, Ft. Washakie	1/16-30/99	1	Paula Hunker	Knowledge of Intermediate Word	SP99			1/16/99
ITEC 2101LA Basic Word	WY		15	Ft. Washakie	1/12-2/4/99	1	Jeff Bradley	Knowledge of Basic Word	SP99			1/12/99
ITEC 2110LA Intermediate PowerPoint	WY		18	Lander	2/18-3/15/99	1	Lisa Hillmer	Knowledge of Intermediate PowerPoint	SP99			2/18/99
ITEC 2110LB Intermediate PowerPoint	WY		13	Lander, Ft. Washakie, Wyoming Indian	4/6-22/99	1	Lisa Hillmer	Knowledge of Intermediate PowerPoint	SP99			4/6/99
ITEC 2110DA Win 95	WY		NA	Not pd by Star Schools	4/16-4/20/99	1	Deborah LeJeune	Knowledge of Win 95	SP99			4/16/99
ITEC 2104 DA Web Pages	WY		NA	Not Paid by Star Schools	1/25-3/1/99	1	Robert LeJeune	Knowledge of Web Pages	SP99			1/25/99
ITEC 2100DA Win 95	WY		NA	Not Paid by Star Schools	2/17-3/31/99	1	Barbara Grubb	Knowledge of Win 95	SP99			2/17/99

Table 1: STARS Project Instructional Programs and Professional Development (continued)

Course	Location	Attendees	# Total	Attendees Location	Class Length	Credit	Instructor	Course Produced Deliverables	Approved & Redesign	Date First Offered	Offered 97-8	Offered 98-9
CMAP 1515DA Internet	WY		5	Dubois	3/15-4/19/99	1	Robert LeJeune	Knowledge of CMAP	SP99			3/15/99
ITEC 2100DB Op.Sys	WY		2	Dubois	2/18-4/1/99	1	Deborah Lejeune	Knowledge of Op Sys	SP99			2/18/99
CMAP 1515LB Internet	WY			Canceled	4/24-25/99	1	Kent Simon	Knowledge of Internet	SP99			4/24/99
CMAP 1515-LA Internet	WY		8	Wyoming Indian, Lander	5days 3 hrs/day	1	Lisa Hillmer	Knowledge of Internet	SU99			6/7/99
ITEC 2490, Designing Effective Multimedia for the Classroom	WY	Blake Snyder Barbara Snyder Carol Harper Tammy Cox Lita Allred Gerri Boesch Emma Applehans Joleen Quiver Maureen Matson	9	South Elem. Lander, Lincoln Elem. Riverton, St. Stephens Indian School	Four 1-day classes	1	Darrin Cheney	Lab computer instruction				4/8, 15, 21, and 5/12/99

Table 1: STARS Project Instructional Programs and Professional Development (continued)

Course	Location	Attendees	# Total	Attendees Location	Class Length	Credit	Instructor	Course Produced Deliverables	Approved & Redesign	Date First Offered	Offered 97-8	Offered 98-9
ITEC 2490, Preparing for 2000 and Beyond	WY	Jan McClaren, Bill Yankee, Gay Hughes, Terry Gallinger, John Howell, Vera Faerber, Millie Abernathy, Cady Shoutis, Lyn Fleak, Chuckie Aanestad, Susan Archer, Karin Muth, James Carton, Barbara Henderson, Sharon Higginbotham, Michelle Woodruff, Judy Newberry, Debra Fustos, Ann Hicks, Leann Sebade, Patricia Newlin, Kristy Richmond, Rosemary Graff, Sheryl Esposito, Cheryl Mowry, Kathy Rodgers, Cleo Goggles, Donna Hammer, Jeffrey Wilson	29	Riverton High School, Lander Valley High School, West Elementary, South Elementary, School Dist. 25, School Dist. 26, North Elementary, School Dist. 21, School Dist. 2, School Dist. 14, Montezuma-Cortez High School	Four 5-day sessions	3	Darrin Cheney					6/99 7/99

Table 1: STARS Project Instructional Programs and Professional Development (continued)

Course	Location	Attendees	# Total	Attendees Location	Class Length	Credit	Instructor	Course Produced Deliverables	Approved & Redesign	Date First Offered	Offered 97-8	Offered 98-9
7 th Grade Science Standards	WY		25	FT. Washakie		ELEM	Scott Hemingway	Knowledge of 7 th Grade Science Standard	R 1997-1998			SP 99
NRST 1120 Medical Surgical Nursing	WY		22	4 sites	CWC, Lander, Jackson, Thermopolis		Lita Burns	Knowledge of Medical Surgical Nursing	R 1997-1998			SP 99
SURG 1600 Orientation to Surgical Techniques	WY		4	4 sites			Dean Kendall	Knowledge of Surgical Techniques	R 1997-1998			SP 99
Internet and PC Essentials	WY		13	Shoshoni		HS	Tony Olson	Knowledge of Internet and PC Essential	R 1997-1998			SP 99
Internet and PC Essentials	WY		6	Shoshoni		Freshman	Created by Tony Olson used this semester by Ron Ankeny	Knowledge of Internet and PC Essential	R 1997-1998			FA99
Native American Literature and Philosophy	UT		36	6 sites			Bob McPherson		R 1997-1998			SP 99
Eighth Grade Science	UT		38	4 sites			Monty Lee					SP 99
2100-SD Basic Win 95	WY		7	Thermopolis, Riverton, Shoshoni	5 Days 3hrs a day	1	Bruce Roehrkasse	Knowledge of Basic Win'95	SM98		6/1/98	
2110-SC Intermediate PowerPoint	WY		2	Riverton	5 days 3hrs a day	1	Terry Svilar	Knowledge of Intermediate PowerPoint	SM98		6/1/98	
2105-LA Intermediate Win 95	WY		4	Lander	4 Days 3 hrs a day	1	Kathy Klouda	Knowledge of Intermediate Win'95	SU98		6/1/98	
2103-SA Basic Access	WY		7	Riverton, Wyoming Indian, Lander	5 Days 3 hrs a day	1	Terry Svilar	Knowledge of Basic Access	SU98		6/1/98	

Table 1: STARS Project Instructional Programs and Professional Development (continued)

Course	Location	Attendees	# Total	Attendees Location	Class Length	Credit	Instructor	Course Produced Deliverables	Approved & Redesign	Date First Offered	Offered 97-8	Offered 98-9
2101-SA Basic Word	WY		13	Riverton, Lander, Thermopolis	5 Days 3 hrs a day	1	Terry Svilar	Know- ledge of Basic Word	SU98		6/1/98	
2106-SA Intermediate Word	WY		9	Riverton	5 days 3hrs a day	1	Margaret Peart	Know- ledge of Inter- mediate Word	SU98		6/1/98	
2100-SA Basic Win 95	WY		7	Riverton, Arapahoe	5 Days 3 hrs a day	1	Bruce Roehrkasse	Know- ledge of Basic Win'95	SU98		6/1/98	
2100-SB Basic Win 95	WY		6	Riverton, Shoshoni	5 days 3 hrs a day	1	Bruce Roehrkasse	Know- ledge of Basic Win'95	SU98		6/1/98	
2105-SD Intermediate Win 95	WY		6	Lander, Riverton	5 days 3hrs a day	1	Bruce Roehrkasse	Know- ledge of Inter- mediate Win'95	SU98		6/1/98	
2106-SC Intermediate Word	WY		4	Wind River, Riverton	5 days 3hrs a day	1	Margaret Peart	Know- ledge of Inter- mediate Word	SU98		6/15/98	
2102-SB Basic Excel	WY		2	Riverton, St. Stephens	5 days 3hrs a day	1	Terry Svilar	Know- ledge of Basic Excel	SU98		6/15/98	
2107-SC Intermediate Excel	WY		1	Riverton	5 days 3hrs a day	1	Margaret Peart	Know- ledge of Inter- mediate Excel	SU98		6/15/98	
2101-SB Basic Word	WY		10	Riverton, St. Stephens, Shoshoni, Thermopolis	5 days 3hrs a day	1	Terry Svilar	Know- ledge of Basic Word	SU98		6/2/98	

Table 1: STARS Project Instructional Programs and Professional Development (continued)

Course	Location	Attendees	# Total	Attendees Location	Class Length	Credit	Instructor	Course Produced Deliverables	Approved & Redesign	Date First Offered	Offered 97-8	Offered 98-9
1515-30 Internet	WY		11	Riverton	5 days 3hrs a day	1	Bruce Roehrkasse	Knowledge of Internet	SU98		6/2/98	
2110-SB Intermediate PowerPoint	WY		4	Wyoming Indian, Riverton	5 days 3hrs a day	1	Terry Svilar	Knowledge of Intermediate PowerPoint	SU98		6/22/98	
2100-SC Basic Win 95	WY		11	Riverton, St. Stephens, Shoshoni	5 days 3hrs a day	1	Bruce Roehrkasse	Knowledge of Basic Win'95	SU98		6/22/98	
2105-SE Intermediate Win 95	WY		6	Shoshoni, CWC, Riverton, Lander	5 days 3hrs a day	1	Bruce Roehrkasse	Knowledge of Intermediate Win 95	SU98		6/22/98	
2112-LA Rain Forest	WY		NA	Not paid by Star Schools		1	Darlene Hallam				6/8/98	
2102-LA Basic Excel	WY		5	Lander	4 days 3hrs a day	1	Kathy Klouda	Knowledge of Basic Excel	SU98		6/8/98	
2105-SB Intermediate Win 95	WY		9	Riverton, Wyoming Indian, Lander, St. Stephens, Shoshoni	5 days 3hrs a day	1	Bruce Roehrkasse	Knowledge of Intermediate Win'95	SU98		6/8/98	
2108-SA Intermediate Access	WY		3	Wind River, Arapahoe	5 days 3hrs a day	1	Terry Svilar	Knowledge of Intermediate Access	SU98		6/8/98	
2102-SA Basic Excel	WY		8	Riverton, Shoshoni, Wind River, Thermopolis	5 days 3 hrs a day	1	Terry Svilar	Knowledge of Basic Excel	SU98		6/8/98	

Table 1: STARS Project Instructional Programs and Professional Development (continued)

Course	Location	Attendees	# Total	Attendees Location	Class Length	Credit	Instructor	Course Produced Deliverables	Approved & Redesign	Date First Offered	Offered 97-8	Offered 98-9
2107-SA Intermediate Excel	WY		4	Riverton	5 days 3 hrs a day	1	Margaret Peart	Knowledge of Intermediate Excel	SU98		6/8/98	
2105-SA Intermediate Win 95	WY		2	Wind River, Shoshoni	5 days 3 hrs a day	1	Bruce Roehrkasse	Knowledge of Intermediate Win'95	SU98		6/8/98	
2111-LA ENCARTA 98	WY		3	Lander	2 days 4hrs a day	1	Darlene Hallam	Knowledge of Encarta	SU98		6/8/98	
ITEC1200-JA CAI for Teachers	WY		8	Jackson	6 days 8hrs a day	1	Segerstrom	Knowledge of CA	SU98		8/13/98	
2100-SA Basic Win'95	WY		9	Riverton, CWC, Wyoming Indian, St. Stephens, Shoshoni	5 days 3hrs a day	1	Bruce Roehrkasse	Knowledge of Basic Win'95	FA98		10/7/98	
2100-DA Basic Win'95	WY		3	Dubois	6days 2 hrs a day	1	Barbara G.	Knowledge of Basic Win'95	FA98		10/13/98	
2101-SA Basic Word	WY		13	St. Stephens, CWC, Riverton, Wyoming Indian, Arapahoe, Shoshoni	5 days 3hrs a day	1	Bruce Roehrkasse	Knowledge of Basic Word	FA98		10/6/98	
2101-LA Basic Word	WY		12	CWC, Lander, Arapahoe, Riverton, St. Stephens	6 days 2hrs a day	1	Cora Lee Reynolds	Knowledge of Basic Word	FA98		10/22/98	
2102-SA Basic Excel	WY		12	Riverton, Wind River, CWC, St. Stephens, Shoshoni	5 days 3hrs a day	1	Bruce Roehrkasse	Knowledge of Basic Excel	FA98		11/10/98	

Table 1: STARS Project Instructional Programs and Professional Development (continued)

Course	Location	Attendees	# Total	Attendees Location	Class Length	Credit	Instructor	Course Produced Deliverables	Approved & Redesign	Date First Offered	Offered 97-8	Offered 98-9
2102-LA Basic Excel	WY		7	Riverton, Lander, St. Stephens	6 days 2hrs a day	1	Lisa Hillmer	Knowledge of Basic Excel	FA98		9/9/98	
2105-SB Intermediate Win'95	WY		8	CWC, Riverton, Lander, St. Stephens	5 days 3hrs a day	1	Bruce Roehrkasse	Knowledge of Intermediate Win'95	FA98		11/9/98	
2105-SC intermediate Win'95	WY		1	Riverton	3 days 8hrs a day	1	Martha Brown	Knowledge of Intermediate Win'95	FA98		10/24/98	
2106-SA Intermediate Word	WY		8	CWC, Riverton, St. Stephens	5 days 3 hrs a day	1	Beth Gray	Knowledge of Intermediate Word	FA98		10/7/98	
2107-SA Intermediate Excel	WY		6	CWC, Riverton, St. Stephens	5 days 3hrs a day	1	Beth Gray	Knowledge of Intermediate Excel	FA98		11/1/98	
2108-SA Intermediate Access	WY		5	CWC, Shoshoni, Riverton, St. Stephens	3 days 8hrs a day	1	Terri Svilar	Knowledge of Intermediate Access	FA98		11/21/98	
2110-SA Intermediate PowerPoint	WY		8	Riverton, CWC, St. Stephens	6 days 2 hrs a day	1	Beth Gray	Knowledge of intermediate PowerPoint	FA98		10/6/98	
2110-SB Intermediate PowerPoint	WY		2	Riverton, Shoshoni	3 days 8hrs a day	1	Terri Svilar	Knowledge of Intermediate PowerPoint	FA98		10/31/98	
1515-30 Internet	WY		13	St. Stephens, Wind River, CWC, Riverton, Arapahoe	6 days 2 hrs a day	1	Bruce Roehrkasse	Knowledge of Internet	FA98		9/10/98	

Table 1: STARS Project Instructional Programs and Professional Development (continued)

Course	Location	Attendees	# Total	Attendees Location	Class Length	Credit	Instructor	Course Produced Deliverables	Approved & Redesign	Date First Offered	Offered 97-8	Offered 98-9
1515-31 Internet	WY		15	St. Stephens, Riverton, CWC, Wyoming Indian	6 days 2hrs a day	1	Martha Brown	Knowledge of Internet	FA98		10/22/98	
1515-TA Internet	WY		5	Thermopolis	6 days 2 hrs a day	1	Eric Kay	Knowledge of Internet	FA98		10/12/98	
1515-DC Internet	WY		1	Dubois	6 days 3 hrs a day	1	Robert L.	Knowledge of Internet	FA98		10/8/98	
1515-01 Basic Win'95	WY		1	Riverton	3 days 8hrs a day	1	Martha Brown	Knowledge of Basic Win'95	FA98		9/26/98	
8 th Grade Science	UT		150	4 sites			Monty Lee	Knowledge of 8 th Grade Science	R 1997-1998			FL 98
Ute Mountain Ute History Unit 1	CO		52	3 sites			Geri Sanders-Klein	Knowledge of Ute Mountain Ute History Unit 1	R 1997-1998			FL 98
NRST 1050 Older Adult	WY		34	6 sites			Jan McCoy	Knowledge of NRST 1050 Older Adult	R 1997-1998			FL 98
NRST 1680 Pharmacology 1	WY		19	Cedar Ridge CO, Arapahoe, Lander, Jackson, Thermopolis, Riverton, Wilson, Douglas			Billie Dutcher	Knowledge of NRST 1680 Pharmacology 1 CD/ Video	R 1997-1998			FL 98
ZOO 2015 Human Anatomy	CW C		66	3 sites			Nancy Larson	Knowledge of ZOO 2015 Human Anatomy	R 1997-1998			FL 98

Table 1: STARS Project Instructional Programs and Professional Development (continued)

Course	Location	Attendees	# Total	Attendees Location	Class Length	Credit	Instructor	Course Produced Deliverables	Approved & Redesign	Date First Offered	Offered 97-8	Offered 98-9
ENGL 0610 Fundamentals of Composition 1	WY		12	3 sites			Princess Killebrew	Knowledge of ENGL 0610 Fundamentals of Composition 1	R 1997-1998			FL 98
NRST 1000 Fundamentals of Nursing	WY		8	Jackson			Jane Rogalski	Knowledge of NRST 1000 Fundamentals of Nursing Video	R 1997-1998			FL 98
CMAP 2490-01 Win '95	WY		4	Riverton	4days 8hrs a day	1	Bruce Roehrkasse	Knowledge of Win'95	SP98	2/7/98		
CMAP 2490-03 Basic Word	WY		19	Riverton, Shoshoni, Arapahoe, St. Stephens, Wind River	5 days 3hrs a day	1	Terri Svilar	Knowledge of Basic Word	SP98	2/18/98		
CMAP 2490-04 Basic Access	WY		15	Riverton, St. Stephens, Wind River, Arapahoe	5 days 3hrs a day	1	Terri Svilar	Knowledge of Basic Access	SP98	4/1/98		
CMAP 2490-05 Basic Excel	WY		15	Riverton, Arapahoe, Wyoming Indian, Lander	5 days 2 hrs a day	1	Donna Olsen	Knowledge of Basic Excel	SP98	1/12/98		
CMAP 2490-06 Basic Word	WY		15	Riverton, Arapahoe	5 days 2 hrs a day	1	Donna Olsen	Knowledge of Basic Word	SP98	2/23/98		
CMAP 2490-08 Intermediate PowerPoint	WY		15	Riverton, Lander	5days 3hrs a day	1	Beth Gray	Knowledge of Intermediate PowerPoint	SP98	2/19/98		

Table 1: STARS Project Instructional Programs and Professional Development (continued)

Course	Location	Attendees	# Total	Attendees Location	Class Length	Credit	Instructor	Course Produced Deliverables	Approved & Redesign	Date First Offered	Offered 97-8	Offered 98-9
CMAP 2490-09 Intermediate PowerPoint	WY		9	Shoshoni, Riverton, Wyoming Indian, Lander	5days 3hrs a day	1	Beth Gray	Knowledge of Intermediate PowerPoint	SP98	4/2/98		
CMAP 2490-27 Basic Excel	WY		1	Thermopolis	4 days 3 hrs a day	1	Cheryl Peterson	Knowledge of Basic Excel	SP98	4/16/98		
CMAP 2490-28 Win '95	WY		5	ST. Stephens, Arapahoe	5days 3hrs a day	1	Cheryl Peterson	Knowledge of Win'95	SP98	3/2/98		
CMAP 2490-28 Win'95	WY		5	Thermopolis	5 days 3hrs a day	1	Cheryl Peterson	Knowledge of Win'95	SP98	3/9/98		
CMAP 2490-29 Win'95	WY		1	Thermopolis	4 days 3 hrs a day	1	Troy Young	Knowledge of Win'95	SP98	3/16/98		
CMAP 2490-30 Basic Win'95	WY		14	Riverton	5days 3hrs a day	1	Bruce Roehrkasse	Knowledge of Basic Win'95	SP98	1/19/98		
CMAP 2490-31 Basic Win95	WY		11	Wind River	3days 8hrs a day	1	Bruce Roehrkasse	Knowledge of Basic Win'95	SP98	3/7/98		
CAMP 2490-32 Basic Win 95	WY		9	Wind River	3 days 8hrs a day	1	Bruce Roehrkasse	Knowledge of Basic Win'95	SP98	3/14/98		
CMAP 2490-33 Basic Word	WY		13	Wind River	3 days 8hrs a day	1	Bruce Roehrkasse	Knowledge of Basic Word	SP98	2/7/98		

Table 1: STARS Project Instructional Programs and Professional Development (continued)

Course	Location	Attendees	# Total	Attendees Location	Class Length	Credit	Instructor	Course Produced Deliverables	Approved & Redesign	Date First Offered	Offered 97-8	Offered 98-9
CMAP 2490-34 Basic Excel	WY		15	Wind River, Wyoming Indian, Arapahoe	3 days 8hrs/day	1	Terri Svilar	Knowledge of Basic Excel	SP98	2/21/98		
CMAP 2490-35 Basic PowerPoint	WY		5	Wind River, Wyoming Indian	3 days 8hrs a day	1	Bob Hussa	Knowledge of Basic PowerPoint	SP98	4/1/98		
CMAP 2490-50 Basic Excel	WY		13	Riverton, Wyoming Indian, St. Stephens, Lander	5 days 3hrs a day	1	Bruce Roehrkasse	Knowledge of Basic Excel	SP98	1/14/98		
CMAP 2490-51 Basic Excel	WY		3	St. Stephens, Riverton	5 days 3hrs a day	1	Beth Gray	Knowledge of Basic Excel	SP98	1/14/98		
CMAP 2490-52 Basic Access	WY		10	Riverton	5days 3hrs a day	1	Beth Gray	Knowledge of Basic Access	SP98	2/18/98		
CMAP 2490-53 Basic Access	WY		8	Riverton	5days 3hrs a day	1	Beth Gray	Knowledge of Basic Access	SP98	4/1/98		
CMAP 2490-54 Basic Word	Wy		18	Riverton, Wyoming Indian, Lander, Wind River	5days 3hrs a day	1	Bruce Roehrkasse	Knowledge of Basic Word	SP98	2/18/98		
CMAP 2490-55 Basic Access	WY		13	Arapahoe, Wyoming Indian, Wind River, Riverton, Lander	5days 3hrs a day	1	Bruce Roehrkasse	Knowledge of Basic Access	SP98	4/1/98		
CMAP 2490-56 Basic Win '95	WY		8	Riverton, Lander	5days 3hrs a day	1	Bruce Roehrkasse	Knowledge of Basic Win'95	SP98	1/13/98		

Table 1: STARS Project Instructional Programs and Professional Development (continued)

Course	Location	Attendees	# Total	Attendees Location	Class Length	Credit	Instructor	Course Produced Deliverables	Approved & Redesign	Date First Offered	Offered 97-8	Offered 98-9
CMAP 2490-57 Basic Win '95	WY		5	Riverton	5days 3hrs a day	1	Bruce Roehrkasse	Knowledge of Basic Win'95	SP98	2/17/98		
CMAP 2490-58 Basic Win '95	WY		13	Riverton, Arapahoe	5days 3hrs a day	1	Bruce Roehrkasse	Knowledge Basic Win'95	SP98	3/31/98		
CMAP 2490-59 Basic Excel	WY		19	Riverton, Shoshoni, Wind River, St. Stephens, Wyoming Indian	5days 3hrs a day	1	Terri Svilar	Knowledge Basic Excel	SP98	1/14/98		
CMAP 2490-80 Win '95	WY		6	St. Stephens	5days 3hrs a day	1	J. Morehouse	Knowledge Win'95	SP98	1/10/98		
CAMP 2490-81 Win' 95	WY		14	Lander	6 days 2hrs a day	1	Paula Hunker	Knowledge of Win'95	SP98	2/19/98		
CMAP 2490-82 Win '95	WY		9	Lander	6 days 2hrs a day	1	Kathy Klouda	Knowledge of Win'95	SP98	2/26/98		
CMAP 2490-83 Win'95	WY		13	Lander	5days 3hrs/day	1	CoraLee Reynolds	Knowledge of Win'95	SP98	3/9/98		
CMAP 2 490-91 Word	WY		3	Thermopolis	4days 3 hrs a day	1	Mindy Young	Knowledge of Word	SP98	2/23/98		
CMAP 2490-92 Win '95	WY		5	Thermopolis	4days 3 hrs a day	1	Erik Kay	Knowledge of Win '95	SP98	2/10/98		

Table 1: STARS Project Instructional Programs and Professional Development (continued)

Course	Location	Attendees	# Total	Attendees Location	Class Length	Credit	Instructor	Course Produced Deliverables	Approved & Redesign	Date First Offered	Offered 97-8	Offered 98-9
CMAP 2490-93 Word	WY		5	Thermopolis	4days 3 hrs a day	1	Joan Fuchs	Know-ledge of Word	SP98	3/3/98		
CMAP 2490-94 PowerPoint	WY		4	Thermopolis	4days 3 hrs a day	1	Joan Fuchs	Know-ledge of Power-Point	SP98	3/23/98		
Creating Web Pages Beginning & Intermediate	WY	Dora Weller, Carol Baron, Brad Hishstreet, Chuck Gomendi, John Wood, Jeff Bradley, Gail Moravek, Ron Ankeny, Stephen Rains, Mike King, Darlene Hallam, Cheryl Peterson, Mark Noblitt, Carol Aanestad, Bonnie Hildner, Daria Wood	16	St. Stephens, Lander, Dubois, Wind River, Wyoming Indian, Ft. Washakie, Shoshoni, Riverton, Arapahoe, Thermopolis, Jackson	4 days 8hrs a day		Rhiannon Jones Consultant of New Horizons Computer Learning Centers, CO	Know-ledge of Creating Web Pages	SP98	1/5/98		
Web Design Workshop	WY	Lita Burns, Jeff Hosking, Carol Rardin, Kelly Dempster, Jay Jeude, Sonja Mathews	6	CWC	2 day		Darrin Cheney	Web design skill		7/21/99		7/21/99

Table 1: STARS Project Instructional Programs and Professional Development (continued)

Course	Location	Attendees	# Total	Attendees Location	Class Length	Credit	Instructor	Course Produced Deliverables	Approved & Redesign	Date First Offered	Offered 97-8	Offered 98-9
Intro to Computers/ PowerPoint Workshop	WY	Sylvia Miller, Ann Bennet, Becky Bertalan, Trisha DeClue, Felicia Wilson, Carol Healer-Ward	6	CWC	NA	0	Darrin Cheney	Skill in Power Point		8/99		8/99
Student Orientation Online Learning Medical Terminology, Freshmen	WY	Pamela Chavez, Amber Gunsaullu, Jessica Ferlayson, Cody Hendrickson, Sara Luckenbach, David Garbeck, Sheri Allen, Elizabeth Johnson, Vicki Moss, Shane Odenbach	10	CWC	NA	0	Carrin Cheney	Orientation		8/99		8/99
Student Orientation Online Learning Client in the Community Second year College Students	WY	John Hunsilar, Donna Lechner, Tammi Gunter, Deanette Brandt, Suzy Messer, Suzanne Nelson, Jeanne Deaton, Lora Kolnig,, Chris Bentley, Anita Richins, Liticia Jolley, Jessica Ferrel	12	CWC	NA	0	Carrin Cheney	Orientation		8/99		8/99

Table 1: STARS Project Instructional Programs and Professional Development (continued)

Course	Location	Attendees	# Total	Attendees Location	Class Length	Credit	Instructor	Course Produced Deliverables	Approved & Redesign	Date First Offered	Offered 97-8	Offered 98-9
Request for Proposal Workshop for CWC Faculty	WY	Donna Olsen, Jeff Hosking, Dick Winslow, Rob Richards, Jacque Taylor, Susan Lawson, Carol Rardin, Helsha Acuna	8	CWC	1.5 hrs	0	Darrin Cheney	New course proposals 3 rd year		9/28/99		9/28/99
Request for Proposal Workshop for Partner Schools	WY	Jeri Boesch, Kris Anderson, Martha Blankenship, Karleen Armajo, Jessica Sehnert, Holly Miller, Virginia Widmay, Jerry McDonnel, Kido Clark, Kija Craft, Doug Brenneman Sandy Barton, Bill Reiter, Karen Werth, Kim McKinnon, Allea Baltes, Sherman Flism, Matt Soper, Bonnie Hildner, Lynette Fleak, Chuckie Aanestad, Debra Smalley, Joanne Jeffres	23	CWS and St. Stephens Indian School STARS Network	1.5 hrs		Darrin Cheney	New course proposals 3 rd year		9/30/99		9/30/99

State Instructional Programming Administration

Because of the vast distances between the systems and service areas serviced by the MPDLP, it was agreed by the partners that each state would need its own group 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.

Native American Focus for all Courses

To ensure that courses were redesigned and incorporated a Native American focus, the following letter was sent to instructors.

February 17, 1999

Dear _____:

This letter is in regard to your Star Schools course redesign proposal for the current (1998-99) year. As you are probably aware, this year the Mountain Plains Distance Learning Partnership (MPDLP) Board has recommended teachers incorporate a Native American focus in the Star Schools curriculum redesigns where appropriate. In order to facilitate this, the MPDLP staff is willing to work with you and provide additional help, if desired.

Please contact Darrin Cheney (855-2292), Scotty Ratliff (855-2155) or the undersigned (Mohammed (855-2186) if you need any assistance. Thank you.

Sincerely,

Mohammed Waheed
Associate Director
Mountain-Plains Distance Learning Partnership

Teachers responded in a positive manner to the request. A compilation of the changes is shown here.

Blanding, UT

Paula DeJoshua, Reading (Navajo Emphasis)

My whole life during the past five years has been within the Navajo community. Ninety-eight percent of the time, I am the only white person present at weddings, funerals, and sacred ceremonies. I plan to incorporate Navajo vocabulary words into every lesson, plus data emphasizing Navajo culture in each lesson. I will embellish with photographs, interviews and data gathered locally.

K.C. Benedict, American Indian Oral Traditions

In reality, most public schools have limited time to discuss Indian literature. This curriculum will use literature from the North American Indian oral tradition as a tool to reinforce skills for the work place: reading, listening, summarizing, rewriting, editing.

Clifford P. Coppersmith, American National Government, College of Eastern Utah

A combination of factors make this course adaptable to emphasize content relevant to the Native American student body. The instructor holds a Ph.D. in Native American history and anthropology and has first hand knowledge of issues and government policies that have affected Native Americans throughout

the US and Native American populations who are served by the CEU and EDNET distance learning systems. The course will emphasize, when and where appropriate topics of discussion dealing with issues vital to Utah's Native American peoples, including Indian tribal sovereignty, Indian tribal government and US government relations, Indian tribal government and state relations, economic development issues, natural resource allocation, Native American social concerns, and the impact of modern tribal identity and cultural maintenance movements on American Indian tribal and federal government policy.

LeAnn Shumway, Career Development

Native American students have a difficult time especially in middle school realizing that there is more to life than getting through middle school. If they even think about a career, it is usually wanting to be a professional athlete or an artist. I would develop a curriculum that would use technology to interest these students in careers that are possible. Technology really seems to hold these students' interest.

Cortez, CO

Leecy Wise and Patricia Thomas, Holistic, Experience-Based, Distance Learning Math & Experiential Learning

The approach for delivery of instruction was selected because research determined that it is likely to succeed with Native Americans. The experiential approach is being modeled in several classes on Indian reservations. The success of those courses will serve as models for the instructional design. If successful, Native Americans are likely to emerge as new learners in the area, capable of competing in the economic scene. It is hoped that the approach used in this and similar projects will be replicated in all organizations serving Native Americans in the region.

Robert Duncan, Automotive Electrical Systems

A large part of this project is to be able to make available materials of substance that will aid our Native American students in make-up work as there seems to be many necessary family-oriented absences.

Jeffrey Wilson, Drafting/Design

A significant portion of our student body are Native Americans; some of the classes I teach are more than fifty percent Native Americans and the impact upon their learning and the opportunity a unit such as this may have on their lives could be great.

Randy Smith, Rural EMS Management

Many of the reservations have rural EMS systems in place and face many problems and challenges. This course would have particular interest to those providing EMS on reservations. The instructor has helped a few tribes with their EMS education and systems. The principles taught would particularly benefit tribes in rural areas who want to improve their current system.

Dove Creek, CO

Karen Webster, Multi-Media Student Presentations

Research at some levels will include research into area history, which will include Native American sites, family histories, and area folklore.

Price, UT

George Uhlig, Chemistry 1110 – Nursing Chemistry

We discuss Chemistry as it related to dyes and then relate this to the Native American dyes.

Riverton, WY

Ann Avery, Writing Center

A Native American component will be incorporated by use of culturally relevant examples. This will not be limited to Native Americans, it will utilize a multicultural approach.

Dean Kendall, Surgical Techniques

I am attempting to secure a clinical site for the practicum at the Crow Hospital, Crow Agency Montana, for Native American focus.

Billie Dutcher, Medical Surgical Nursing II

Cultural considerations are in all nursing courses, but not one particular cultural group is singled out.

Kris Greany, HLED1270 – Wellness

Wellness addresses prevention and treatment of chronic diseases (cardiovascular, obesity, diabetes, alcoholism) which have a higher prevalence in the Native American population. As a self-responsibility model, Wellness students learn to evaluate their health risks and behaviors, develop health-oriented goals, and modify attitudes and behaviors to optimize lifetime wellness. Distance delivery would allow degree-seeking Native American students to fulfill their physical education/wellness requirement off campus and would be an asset to those students reliant on limited public or shared transportation or those with complex family responsibilities. It would be beneficial for non-degree-seeking students to complete as an introduction to disease risk reduction and health promotion. Native American students are often eager learners and enthusiastically share new knowledge with others in their community. A potential outcome would be their ability to assist in preventing/controlling chronic disease for themselves and fellow Native Americans. Students would not usurp the role

of Indian health Services, but could serve as peer advocates for health-supporting behaviors.

Lita Burns, Client in the Community I and Nurse Care of Parent and Child

Students in the clinical portion of the class are encouraged to use settings where they can interact with the Native American people. This year students used St. Stephens High School, the Arapahoe Clinic, and the Ft. Washakie Clinic.

Thermopolis, WY

Mindy Young, Internet Research Website

Many of the topics chosen would give Native American students a chance to research items that otherwise would not be included in their curriculum. With limited resources, this program would allow any student in any BIA school to access information about a variety of topics and give them relevancy to their lives and their studies.

Troy Young, Spanish Verb Guide & Individual Practice Program

Practice materials are extremely important when learning a second language. With limited resources available for students on the reservations this program would allow Native American students the needed practice and resource to learn Spanish. Native American students may be unable to take

Spanish in continuing semesters and this program will give these students practice to maintain their skills.

Statewide Infrastructure

STARS Project TeleCommunications Transport System

The STARS Project will ultimately provide a telecommunications transport system to four states. The infrastructure system is being installed in phases.

Wyoming Infrastructure System

The STARS Project has built a statewide infrastructure system that significantly enhances and strengthens the Wyoming State Technology Plan and its outreach to Wyoming citizens.

Initially, the bid process for this system was delayed because of other Wyoming State projects. However, this was resolved during the first year of the project and the project began the build-out in the second year of the project. The Project has the full endorsement of the Wyoming Governor James Geringer.

The Wyoming infrastructure and classroom equipment installation components of the STARS Project were close to completion and were being tested during the April, 1999, site visit conducted by the evaluator.

Harris/Farinon, the contracting vendor, has ensured that it would provide continued services once the grant was complete and extend that through a ten year period.

The first four electronic classrooms were completed in March, 1999 and the STARS Project staff began to identify and correct system problems. The telecommunication transport system has been built so that it has the ability to integrate new technologies if and when they became available.

Eventually, the local schools in Fremont County will be linked to sites in Jackson and Thermopolis, as well as Utah, Colorado, and Montana. The system is also compatible with the Wyoming Equality Network, a compressed video system which will be linked across the state of Wyoming.

Utah Infrastructure System

A previous Star Schools project provides the statewide infrastructure for a portion of Utah. The Four Corners Star School Project operated during the previous round of Star Schools funding. It provided a microwave infrastructure, which was installed in Eastern Utah. The central hub was installed at the College of Eastern Utah in Blanding, UT. It has since been connected to the Utah EdNet system and to Cortez, CO.

Colorado Infrastructure System

Cortez, CO was a member of the Four Corners Project as well. Connections are between electronic classrooms and the Instructional Programming Centers. These completed components of the Four Corners Star Schools Projects are now being utilized for the current STARS Project.

State-to-State Infrastructure Connections

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

STARS Project School Site Identification - Wyoming

STARS Project staff conducted visits to each school district in the target areas to formally introduce the STARS program. The staff conducted a needs assessment for each district. The assessment identified curriculum that was needed by the district that could be delivered over the new distance learning STARS Project system. The needs assessment identified existing telecommunication infrastructure. The information gathered during the assessment was used to plan the design and scope of the infrastructure and to set the parameters of the system-wide capacity.

A total of twenty-eight sites in remote communities were identified as possible locations for development of classrooms to receive the future STARS Project educational programming. Eleven of the sites have been developed and are receiving classes through resources other than the current STARS Project grant.

Classrooms and Classroom Equipment - Wyoming

A second request for proposal (RFP) was developed for classroom equipment to bring the programming into the classroom over the statewide transport system. The RFP was mailed to two-hundred vendors. Fifty submitted letters of intent to bid, but of the nine bids which were received, only three were in compliance.

The interconnection of schools is made through a high-speed, high bandwidth, digital microwave system which links all Wyoming Partnership schools. 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 those using the following technologies:

- analog or digital telephone
- analog or digital microwave
- satellite delivery
- fiber optic cable delivery
- MPEG-2 digital
- H.320 conferencing standard

The hub can easily be expanded to approximately double the current capacity for future linkages with additional schools.

This Control Center and hub will link all Wyoming schools in a multipoint conferencing system. The system will allow two-way audio and two-way video;

fully interactive live course delivery, and video-on-demand. Schools will be able to receive courses at any time from a video storage server system.

School sites will include a new, fully integrated, wired classroom that will connect with the control hub and an existing wired classroom.

The Control Center and hub was completed in August 1998 and was fully operational to tape classes in the Fall of 1998. The telecommunications transport system is in place, and the hub is able to link to schools where the classroom equipment installations are completed.

The hub was built to initially accommodate up to twenty sites with six simultaneous conferences and/or video classes on demand. According to the staff, it can easily be expanded to approximately double that capacity for future linkages with additional schools. Eleven distance sites are currently planned.

Other features of the Control Center and Hub are as follows:

- MPEG-2 Digital transmission
- Able to handle six simultaneous conferences
- Able to handle eleven distance sites
- Full distance site monitoring/routing
- Connectivity with the WY State Equality Network
- Video Production Facilities
- Duplication Facilities
- Satellite Connectivity

Electronic Classroom Sites – Wyoming

Four new Wyoming electronic classroom sites were identified as ideal for initial development to meet the goals of the STARS Project. Areas and classrooms within the schools were selected based on convenience, ease of installation, room size, and other considerations. These sites were selected for development in 1997-1998. Remodeling was required at all of the sites so that facilities could accommodate the needs of distance education 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.

The four distance classrooms have similar equipment. This includes a Pentium computer, digital document camera, VHS cassette player and recorder, dual large screen monitors, two digital cameras with autotrack, and a touch screen remote control.

The CWC lecture classroom 129 has a Pentium computer, digital document camera, VHS video cassette player, dual large screen projectors, four digital cameras with autotrack, and a touch screen remote control.

The individual classrooms were completed before the Summer of 1999. All four sites are identical in their design. If an instructor is sent from one site to teach a course at another site, the functionality of the classrooms is the same. It will take only a few moments for the instructor to feel at ease with the electronic set-up at any of the electronic classroom sites.

Riverton High School, Riverton, WY

- Completed and fully functional
- Able to receive/send two-way full motion audio visual communications
- Received software programming updates
- Administrators, faculty and staff have had full demonstrations of the electronic classrooms, capabilities were explained and questions answered by Bruce Fiordalisi, Control Center Supervisor 8/24/99

St. Stephens Indian School, St. Stephens, WY

- Completed and fully functional
- Able to receive/send two-way full motion audio visual communications
- Received software programming updates
- Administrators, faculty and staff have had full demonstrations of the electronic classrooms, capabilities were explained and questions answered by Bruce Fiordalisi, Control Center Supervisor 9/14/99

Fort Washakie Indian Schools, Fort Washakie, WY

- Completed and fully functional
- Able to receive/send two-way full motion audio visual communications
- Received software programming updates
- Administrators, faculty and staff have had full demonstrations of the electronic classrooms, capabilities were explained and questions answered by Bruce Fiordalisi, Control Center Supervisor 8/24/99

Lander Valley High School, Lander, WY

- Completed and fully functional
- Able to receive/send two-way full motion audio visual communications
- Received software programming updates
- Administrators, faculty and staff have had full demonstrations of the electronic classrooms, capabilities were explained and questions answered by Bruce Fiordalisi, Control Center Supervisor 9/7/99

Central Wyoming College, Riverton, WY

- Completed and fully functional

- Able to receive/send two-way full motion audio visual communications
- Received software programming updates

Phase II Site Inspection

A site inspection was made from May 25-27, 1999 of the Phase II area of the STARS Project Telecommunications Transport System. This includes Copper Mountain, a mountain ridge which must be crossed in order to provide a microwave signal to Thermopolis. The site inspection included a review of existing towers, buildings and microwave dishes.

Other areas included in Phase II are Hotsprings County, Dubois Windy Ridge, Jackson Hole High School, and Rendezvous Mountain.

Participants in the Phase II site inspection were:

Harris Communications: Rich Peters, Field Design Engineer

Wyoming Public Television: Bob Connelly, Transmitter Engineer

MPDLP STARS Project: Mike Nielsen, Telecommunication Technician

Phase II Update on Connectivity

Phase II will provide a connection from the STARS Project to the Jackson High School, Jackson Hole, WY.

Through June 30, 1999, the following work was completed

- Engineering and architectural work to designate routes, relays, towers, buildings mounts, etc., for the two-way interactive digital microwave connection were completed.
- Central Wyoming College received clearance from the Federal Aviation Administration (FAA) stating that the proposed installations posed no hazard to air safety in the Jackson area.
- Teton County Planning Department (TCPD) accepted the Conditional Use Permit application for review. Hearings were held before the Board of County Commissions on August 3, 1999.
- Central Wyoming College is coordinating efforts with the architectural firm responsible for the new Jackson High School site,
- A contract was signed with the Harris Corporation to extend the signal from Copper Mountain to Jackson High School. Installation was scheduled to be completed by the December 31, 1999.
- The STARS Project staff has worked with the Jackson High School administration to assist in the selection of equipment for the electronic classroom which will be utilized as a receive and origination site.

Through June 30, 1999, the following work was completed

- Coax cable was pulled through the Central Wyoming College business office and classroom wings to connect the satellite feeds to the control room and

conference rooms. It was also pulled through the service tunnels to connect Wyoming Public TV to the control center.

- Debugging is done on a weekly basis. No major malfunctions have occurred.
- Harris Communications tower and civil crews started the Phase II installation in July, 1999. Towers, antennas, microwave radio and dishes, and satellite dishes have been installed for Wind River High School, Thermopolis High School, Shoshoni High School, Thermopolis repeater site, and the Copper Mountain site. Equipment was fine tuned to ensure signal reliability
- The Copper Mountain site took a week longer for installation than was expected because construction equipment was not available when it was needed.
- The equipment for Windy Ridge was delivered. Installation was delayed by the telephone company which was burying underground power and communications cable along the road to Windy Ridge. This made the road impassable.
- The Windy Ridge installation was rescheduled for the second week of October. A tower exists at Windy Ridge to which the MPDLP dishes can be attached once the engineering company has approved the integrity of the tower foundation.

Phase II Sites and Classrooms Update

In Phase II of the project four schools are being provided with electronic classrooms. These include four Wyoming sites -Thermopolis, Shoshoni, Dubois, and Jackson.

Thermopolis High School

- Received signal by the end of Summer 1999
- Needed to install their electronic classroom in order to utilize the signal.
- Towers, antennas, microwave radio and dishes, and satellite dishes have been installed

Shoshoni Indian School

- Received signal by the end of Summer 1999
- Needed to install their electronic classroom in order to utilize the signal.
- Towers, antennas, microwave radio and dishes, and satellite dishes have been installed

Dubois High School

- Received signal by the end of Summer 1999
- Needed to install their electronic classroom in order to utilize the signal.

- Harris Communications and CWC's Mike Nielsen started installation on the Dubois High School and the Dubois Outreach Center.

Wind River Indian School

- Received signal by the end of Summer 1999
- Needed to install their electronic classroom in order to utilize the signal.
- Towers, antennas, microwave radio and dishes, and satellite dishes have been installed.
- Bruce Fiordalisi met with administrators and technical coordinators to discuss the location and equipment needed for the new electronic classroom. Most of the equipment is ordered and will be installed when it arrives.

Jackson High School

Jackson High School will receive a signal before December, 1999.

Wyoming Indian High School

This high school is part of the Phase II expansion.

Technical Operations Center

Installation was completed for a C-band/KU-band satellite downlink. This will enable the STARS Project to downlink the PBS Adult Learning Service broadcasts.

Collaborations

One of the goals of the STARS Project was to foster and develop collaborations with other projects. The most promising collaboration to date is with NASA.

NASA Connect: The NASA Langley Research Center has nationwide responsibility for collaborations in distance education without actually offering courses as the agency is not meant to be an educational arm of the government.

Dr. Thomas Pinelli, Educational Technology and Distance Learning Officer, was searching for strategies to meet a Presidential Executive Order to enhance efforts to serve Native American populations as well as other generally underserved populations. Dr. Pinelli's other objective was to establish relationships with the various PBS stations across the county to make *NASA Connect* generally available to the public. *NASA Connect* is a series of video and Web based program which provides integrated mathematics and science program for middle school students. Each video segment is meant for a 30 minute time frame.

Teachers visit the *NASA Connect* Web site to register for the program <<http://edu.larc.nasa.gov/dl.html>>. They download an application form from the site. The programs are free and do not carry a copyright.

NASA currently has an estimated 26,000 teachers and 1.8 million students registered in the *NASA Connect* program which is mostly comprised of people

located east of the Rocky Mountains. NASA's objective for the 1999-2000 series is to significantly involve teachers and students west of the Rocky Mountains.

The seven *NASA Connect* programs for 1999-2000 will have a fundamental math look and feel. The focus areas are measurements, portionality, ratios, basic geometry, and basic algebra. NASA will begin with the math and will apply math via science. NASA research will be added to the programs to dramatize how all the math and science fit together in the workplace. When a student asks why or where they would ever use the information, they will see real world situations.

Each *NASA Connect* program features a classroom activity with the math and science teachers working together. The children on the program explain the day's activity to the audience. There is a challenge segment where the students challenge the viewers to answer a set of questions based on that day's activities.

With each set of programs, the teacher will receive a packet of information on a specific daily event. A new component to help students visualize data will be included in the packet. This may be a chart or graph with the project data plotted. A separate sets of questions will be included that strictly deal with the plotted data.

There is also a strong interactive Web component. An example would be aircraft noise where the objective would be to make the aircraft as quiet as possible. There would be three Web-based activities associated with this project.

1) NASA sound quiz: the student is given a series of questions with multiple

choice questions where one answer is correct. If the student chooses an incorrect answer, he/she is told why it is incorrect. 2) The Sound Machine which encompasses a wide variety of sounds, pictures, terminology, and definitions. 3) Career Corner where there are six to eight people who are involved in some way professionally with noise. An example would be a NASA researcher working on acoustics or someone who works on a sound stage. The student is given a series of questions that are directed at these professionals. For example, what does science and math have to do with my job, or how did I become interested in this profession? The professionals then answer the questions.

Langley Aerospace Research Summer Scholars Program: Rafaela Schwan, the coordinator of the Langley Aerospace Research Summer Scholars Program (LARSS), had also wanted to increase participation by Native American students and teachers in NASA programs. LARSS was established in 1986. It benefits undergraduate juniors and seniors and first-year graduate students who are pursuing degrees in aeronautical engineering, mechanical engineering, electrical engineering, materials science, computer science, atmospheric science, astrophysics, physics, chemistry, or selected space.

Two primary elements of the LARSS Program are:

- 1) a research project to be completed by each participant under the supervision of a researcher who will assume the role of a mentor for the summer; and,
- 2) attendance at technical lectures by prominent engineers and scientists.

Additional elements of the program include tours of LARC wind tunnels, computational facilities, and laboratories. Library and computer facilities will be available for use by the participants.

The main objectives of the LARSS program to encourage high-caliber college students to both pursue and earn graduate degrees and to enhance their interest in aerospace research by exposing them to the professional research resources and facilities of Langley Research Center.

Through these objectives the LARSS program directors hope to further educational excellence and provide students with the opportunity to study in their field of interest. At the same time, the LARSS program provides students with an environment in which they can also learn from each other. Since 1986, the LARSS program has served over 1,000 students.

The opportunities for research that are available at Langley through the LARSS program are numerous. They cover, but are not limited to, the fields of engineering and science. Schwan mainly deals in higher education where she works with college students. At the University level, NASA has a program called Langley Summer Schools where NASA brings in approximately 100-130 students to conduct research. The students are paid \$4,200 for a ten week period. There is also a program called "NEW" where teachers are sent to the NASA centers for two weeks of hands-on training. The teacher must apply for admission; if accepted all of their expenses are paid by NASA.

Another program targets preservice teachers which is offered three times a year in May, June, and August. The American Science Center for Educators (ASCE) brings faculty to NASA to conduct research. These faculty are paid \$11,500 for a ten week period to include \$500 for travel and \$1000 for dislocation.

NASA also offers a graduate program where the student is paid \$22,000 a year for three years to conduct research. This can be applied toward their masters degree.

MASTAP – a program which relates to teacher certification and is a two-or three week program. The URL www.nasa.gov Murad site has announcements for proposals and other related information.

Both officers visited the Project, met with the Board and then went to sites in Wyoming, Colorado, and Utah. These discussions led to a Memorandum of Understanding (MOU) that was signed with NASA by the MPDLP and the Wyoming Public Television station WPTV which is located on the campus of Central Wyoming College.

A number of initiatives have resulted from the NASA collaboration and MOU.

- Two of the 1999 NASA CONNECT segments will be produced at and feature MPDLP students and schools that are predominantly Native American.

- Four Native American students participated in a ten-week summer 1999 program with NASA. NASA covered the \$4,200 cost for each student.
- Two Native American teachers were approved to participate in a two-week program at NASA Langley Research Center during the summer of 1999.
- NASA is furnishing the rights to receive and use the NASA Connect video program series. This is designed for use in middle schools to promote mathematics and science education. Supplementary programs are provided through the Web.
- NASA initiated a project that will locate equipment and other resources to further enhance the integration of instructional technology for the MPDLP.

Other projects have been initiated with the Utah Education Network, Tri Corners Telecommunications, Mid-Continent Regional Educational Laboratory (MCREL), Arlington Public Schools and SERC, San Juan Forum, the National Alliance of Business and US Chamber of Commerce, Annenberg/CPB, and the University of Georgia Distance Learning Link.

Additional Grants

Two new grants have been awarded to Central Wyoming College.

Upward Bound will provide funds to work with high school students and with educationally disadvantaged students to show them that college is not out of their reach. Fifteen students will be selected in the county to work with the college.

CHAMP GEAR UP, the second grant, is a partnership grant beginning in October, 1999, which will involve the entire seventh grade class of Title I schools.

CHAMP GEAR UP is an acronym for “Community, Host, Academic, Mentoring Partnership – Gaining Early Awareness and Readiness for Undergraduate Programs.

The grant focuses on the entire system and community. The grant will follow the seventh grade students this year. The grant will follow this class forward through their graduation. In each year following, the grant will pick up a new seventh grade class and follow that group through to graduation.

It is hoped that grant-funded academic coaches can be hired for the schools. Counseling assistance will be provided through Central Wyoming College. The grant will provide an opportunity for staff training, curriculum development, and improvement of student tracking.

One of the strengths of the grant is its ability to be flexible to meet needs and collaborate with projects that are already established. The first task of CHAMP staff will be to coordinate and design activities that will enhance projects and coordinate with the STARS Project.

Summary

The STARS Project is current with its schedule as shown in its proposal. The equipment installation is almost completed, classrooms have been built and equipment installed and tested. Pilot courses were done in the Spring of 1999. The project is moving forward with its delivery of courses at the college level and the K-12 level.

The first two years of the project have been the preamble to the true focus of the project – bringing educational services to rural students. The learning impact that the project has had to date on the instructors has been substantial. It forecasts a significant change in education in the region for students.

Student Survey Instruments

Several courses were offered in a pilot mode during the spring of 1999. To determine how students felt that the distance learning class had served them, a student survey instrument was prepared by the STARS Project staff to administer to STARS students.

Of the 171 students participating in the pilot courses, 61 (n=61) students responded. Their responses are presented in the following pages.

A scale was used where the figure one indicated strong disagreement with a statement, and the figure four indicated strong agreement with a statement.

1 = Strongly Disagree

2 = Disagree

3 = Agree

4 = Strongly Agree

Completed survey instruments were returned to the STARS Project and forwarded to the evaluator for analysis. The survey instrument appears in Appendix C of this report.

The number of respondents is quite small because these were pilot courses. The results should not be generalized to the project or other distance learning programs at this time. However, this does provide an indication of the experiences of this group of students during the pilot programs.

Student Survey Instrument Responses

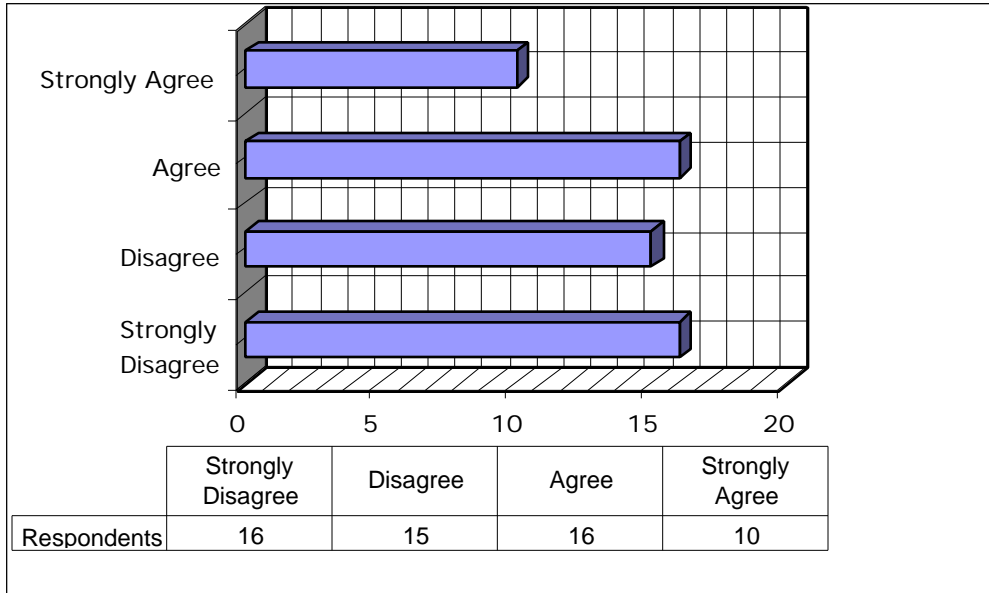
Student Perception About Achievement in the Distance Learning Class

Question: You did better in your distance learning class compared to a traditional class.

The sixty-one respondents indicate that a majority believed that they did not do better in distance learning than in their traditional class. (31 disagree to 26 agree). (See Table 2.)

Table 2

Students: You did better in your distance learning class compared to a traditional class.



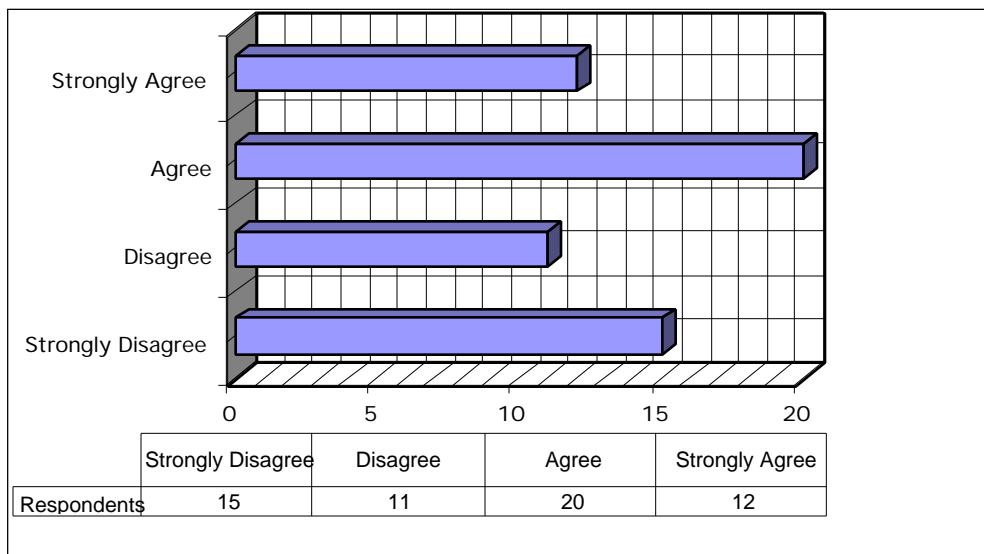
Student Preference for Distance Learning Class

Question: You prefer a distance education class compared to a traditional class

Students were asked if they “prefer a distance education class compared to a traditional class. Of the sixty-one students, over half, or thirty-two students prefer distance education while twenty-six do not. (See Table 3) This response is interesting because more students expressed a preference for distance learning (42) than reported that they did better with distance learning (26).

Table 3:

Students: Preference for Distance Education over Traditional Classroom?



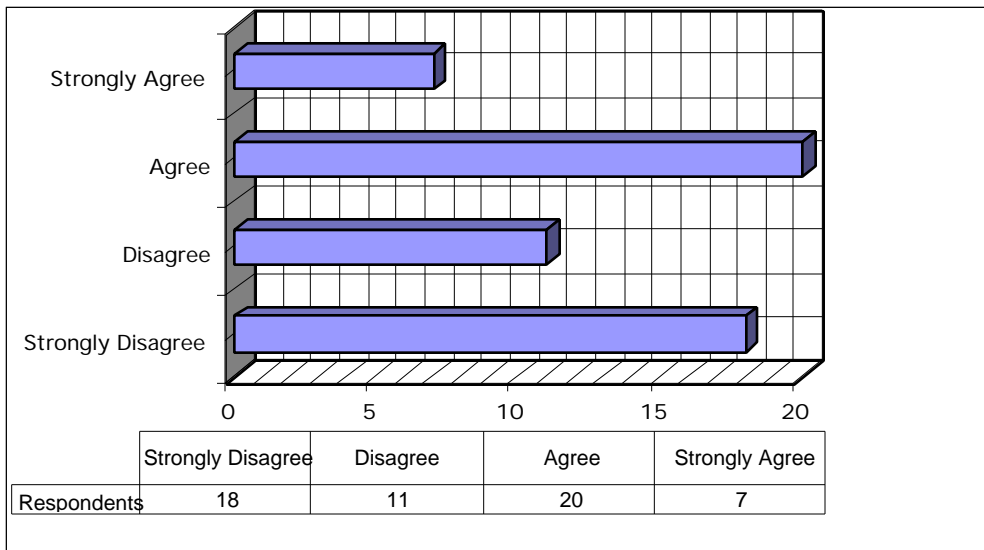
Distance Education Technology Enhanced the Class

Question: Distance education technology enhanced your class.

When asked if distance education technology “enhanced your class?” twenty students agreed that it enhanced their class and seven strongly agreed. In contrast, eighteen students strongly disagreed that distance education technology enhanced their class and eleven disagreed. . (See Table 4) Thus the strongest contrast is between the eighteen who strongly disagreed and the twenty who agreed that technology enhanced their class.

Table 4:

Students: Did Distance Education Enhance Class?



Interference of Distance Education Technology with the Class

Question: Distance education technology got in the way.

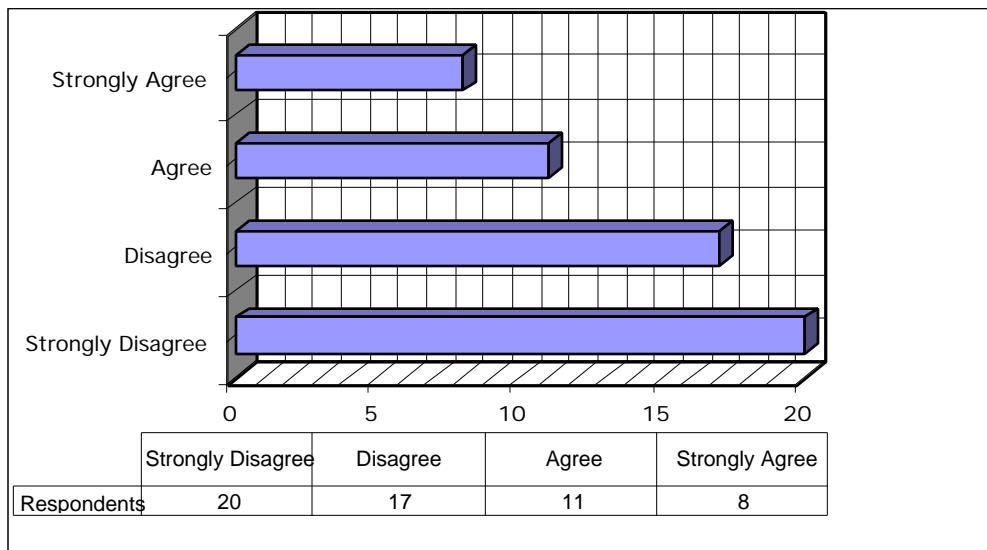
Technology was not in the way of education according to a total of thirty-seven students who disagreed with the statement. Note that disagreeing with the statement indicates approval of the distance education technology. Twenty students strongly disagreed and seventeen chose “disagree.”

Nineteen students felt that technology did get in the way and agreed with the statement. Eleven students felt that it was in the way, and eight felt so strongly.

(See Table 5.)

Table 5:

Students: Distance education technology got in the way



Use of Distance Education Technology Helped Students Understand Complex Concepts

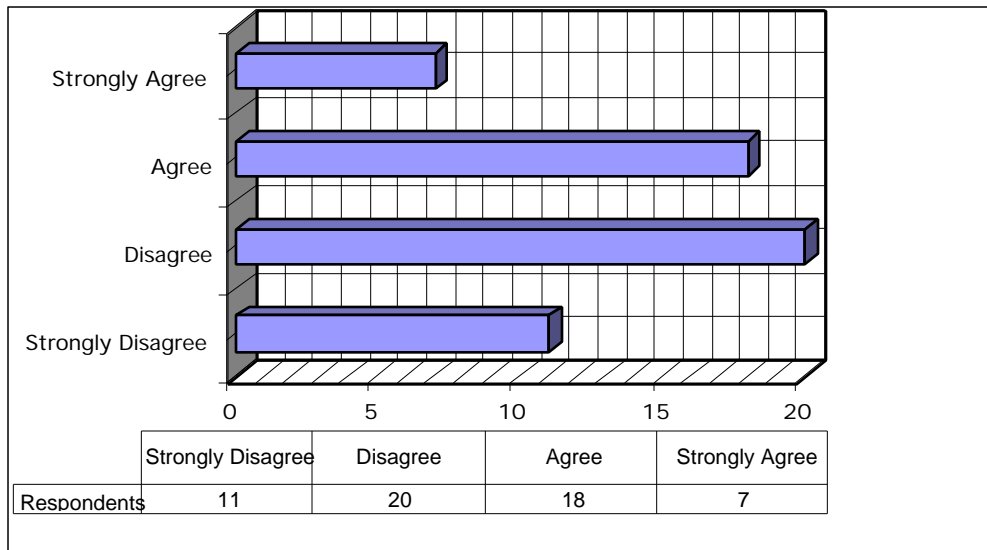
Question: The use of distance education technology helped you understand complex concepts.

Students were asked if “the use of distance education technology helped you understand complex concepts?” Thirty-one students felt that technology did not help in understanding complex problems, while twenty-five felt it did.

(See Table 6.)

Table 6:

Students: Technology Helps in Understanding Complex Problems



Student Reasons for Taking a Distance Education Class

Question: Why did you take the distance education class?

(Please check all that apply)

Required class in program

Self enrichment

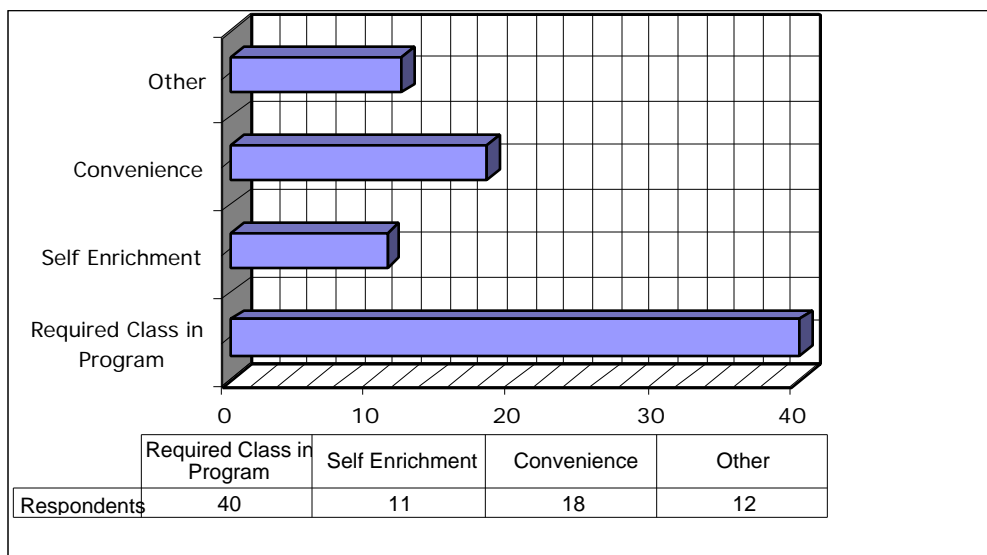
Convenience (e.g., does not require travel)

Other _____

This was a multiple choice question. Respondents could select all answers that applied including an “other” designation. Forty-three students took the class because it was required for a program in which they were enrolled. Eleven students indicated that they took the class for enrichment purposes. Eighteen students said they took the course because it was more convenient for them. Twelve had other reasons but they did not disclose them. (See Table 7.)

Table 7:

Students: Why Did You Take the Distance Education Class?



Student Reasons for Liking or Disliking the Distance Learning Class

Question: What do you like the most about taking a distance education class?

Question: What do you like the least about taking a distance education class?

The student survey questionnaire included questions which required qualitative responses. These questions helped to clarify the quantitative responses.

The first two qualitative questions asked what the student liked the most and least about taking a distance education class?

What students liked the most about the distance education class was the convenience of taking the course when it was convenient without interfering with their job and home duties. They appreciated not having to leave home and used travel time for study time. One student remarked that because she was so focused, it required less time to study for the course. Another said that it reduced stress because she was more focused. Almost every student had a positive reason for liking the distance learning class.

Most of the responses as to why students disliked the course focused on not having a teacher immediately available for clarification. Several students commented that they missed the interaction of a traditional classroom, but others felt that the Web interaction made up for it. One student wanted a better resource library, as she could not find things that she wanted. Other mentioned what they felt was an inadequate laboratory and laboratory resources. Several

mentioned that the timing of receiving materials was late and this was a problem for them.

The qualitative responses were much more positive than the survey questionnaire responses indicated.

So that an individual student's responses to both questions can be compared the responses are shown side by side in Table 8.

Table 8:

Students: What do you like the most and least about taking a distance education class?

Student	Question: What do you like the most about taking a distance education class?	Question: What do you like the least about taking a distance education class?
1.	Study time and test time flexible. Need to be at my job.	It is harder to contact teacher when problems arise
2.	Ability total class at my leisure. Ability to take a class not offered elsewhere and lighten my load.	Hard to answer ask questions
3.	Not having to leave home.	Missed the interaction found in regular classes
4.	Convenience and just the fact that the course was available.	Miss interacting with class and ability to ask questions and got answers right.
5.	I like the freedom of deciding when to do the required course work.	No easy access to instructors at times when we need to ask questions or get clarification.
6.	Is done at my own convenience.	Sometimes assignments get confusing. Do direct interaction with teacher.
7.	I could study at a decent pace & I didn't have to travel.	Sharing the tapes there were times that it was in use when I needed it! I also thought the length of time to do this was quite short. Too much information in a little time!

Table 8: Students: What do you like the most and least about taking a distance education class? (continued)

Student	Question: What do you like the most about taking a distance education class?	Question: What do you like the least about taking a distance education class?
8.	The freedom to choose when to communicate with teacher and work at your own pace, directly or indirectly with actual class.	I loved the convenience and creditability of these classes. No complaint.
9.	The freedom and convenience to work at your own pace!	Love the classes not completed.
10.	Saved time, let me do work all at once, let me take care of family all at once and then do school all at once. I was focused and it required less study at once. I was focused and it required less study because I got it the first time because I was focused.	The timing – Some things didn't reach me in the mail on time. The instructor was accommodating, but that changes the schedule.
11.	I could do it at my convenience	I didn't have the instructor there to ask questions
12.	It refreshed my skills and will help me better understand for future classes	Not counted towards my major
13.		
14.	Using the computer, working with book and teacher.	Nothing really just the fact that my class was scheduled for early morning.
15.	I know how to write from this class.	
16.	I like that a distance education class is good to take the most of	A least of taking and distance education class is good to take
17.		
18.	More time to learn it better, more hands on too.	Nothing
19.	The convenience factor	No complaint, enjoyed them
20.	The fact that if you had to miss a class & you had the opportunity to watch the video and learn instead of getting nothing	overall enjoyed it
21.	I liked the fact that we could take the tests on the computer, and the access that we had to Adam Anatomy	The fine details of the computer software and programs were not always correct i.e. the testing checking method didn't always grade correctly

Table 8: Students: What do you like the most and least about taking a distance education class? (continued)

Student	Question: What do you like the most about taking a distance education class?	Question: What do you like the least about taking a distance education class?
22.	I was a part of the live lecture, but appreciated the opportunity to review the tapes before tests, in case I didn't fully understand something	That the sound system often was a source of trouble/frustration for the teacher to deal with.
23.	You can do classroom work & lectures on your own time instead of a specific one.	I took physiology via video because the class conflicted with my calculus class at the High School. Many of the videos lacked sound or picture, many had problems w/tracking. There were also times when the man taping wasn't even taping Nancy, I am sure that it is much better now because the taping is automated.
24.	Less stress. Last semester I worked a few hours went to class went to work a few more hours and back to class. I was never focused on one task at a time and it really required more study than now.	A few times the material didn't get delivered until 4:30 and I had to take exam at 8:00 a.m.
25.	Didn't have to sit through lecture.	Hard to understand
26.	It is very convenient for a full time professional to supplement his/her education	It seems very difficult to provide adequate laboratory facilities and equipment for science classes often required by healthcare degree programs.
27.	I could study where I live – Jackson Hole	Lack of resources! Specifically Lab resources
28.	Small class size and excellent teacher made for a great learning experience with tons of individual attention	Occasionally class props were not available (skeleton muscle charters lab materials combine both anatomy & physiology)!
29.	The fact that it is in my hometown & I can still work my job & go to school.	I wish that there was a better resource area. The library just didn't have everything you needed.
30.	I could still work while taking the class.	
31.	Had a great teacher! The class was required- but it was very educational & informative!	My travel. I had to drive 60 miles to take the class

Table 8: Students: What do you like the most and least about taking a distance education class? (continued)

Student	Question: What do you like the most about taking a distance education class?	Question: What do you like the least about taking a distance education class?
32.	I didn't have to travel to Riverton for a class since I work full-time.	Not being able to actively ask questions and participate in a class.
33.	Convenience and the fact that is even offered.	There were no computers at CWC branch in Jackson for students taking CD-ROM classes. Had to pay for using a computer at a game store!
34.	Non-structured format.	
35.	The flexibility	The computers in Lander were not compatible with CD ROM program which was why I was interested in the call, besides it being required. What should have been easy to deal with was a big challenge
36.	Self-scheduling	Very poor way to teach/learn – Very difficult to stay focused. Exams did not reflect material covered on CD
37.	Nothing	No teacher & can't ask questions
38.	You get credit for every project you take – You are able to do we 4 research	Some-times you can find time to seek help from your teacher because you don't see them and you must schedule and appointment
39.		
40.	Free to take class when you are able to.	Couldn't get in contact with instructor. She was always out of her office.
41.	I did not have to travel to attend a class	The design of the tests was not geared to the text.
42.	What's the difference if you watch a video in Riverton or in Thermop!	
43.		
44.	Nothing	No teacher, can't ask questions.
45.	N/A	N/A
46.	That the tapes were on review in CWC library.	That I could not have a live instructor or my questions answered right away
47.	I liked this class because of the teachers, the fact that it was a distance learning class to me was irrelevant and did not effect my course in a positive or negative way at all.	My class (live lecture) was not affected by the distance learning component in either a positive or negative way.

Table 8: Students: What do you like the most and least about taking a distance education class? (continued)

Student	Question: What do you like the most about taking a distance education class?	Question: What do you like the least about taking a distance education class?
48.		
49.	Not having to leave home.	I missed the interaction found in traditional classroom settings. However, I knew what to expect.
50.	Non structured format	
51.	The freedom to do the course work on my time schedule. This is very important for those of us who must work or have families.	The sometimes limited access to instructors is a little frustration. The Mental Health nursing course is a great example of a distance course that “works” because there was a web site for all of the students to ask questions of the instructor. It was great and very interactive.
52.	It is done at my own convenience.	No direct contact with teachers.
53.	Nothing	There was no interaction!
54.	Nothing	No teachers, can’t ask questions.
55.	Nothing	Very poor presentation – No interaction
56.	I think it’s probably very helpful for folks who can’t commute to campus. It helps provide learning throughout the whole state without making folks uproot to go back to school.	I was very frustrated that I personally signed up for a live lecture, not distance learning and was forced to watch all the lectures on video, not live. I do not learn well when you watch a video as a group and cannot stop the tape, debate, or ask questions of the instructor.
57.	Doing it on own time.	Not having a real person being here to answer questions you may have for that day.
58.	Not having to leave home.	I missed the interaction in regular classes.
59.	No structure. Learned at my own time.	
60.	I like the freedom of deciding when I wanted to “go to class”, this is so helpful for those of us who work or have families and are also attending school.	I would have liked having more interaction with instructors so I could ask questions or get clarification on a topic.
61.	It is done at my own convenience.	

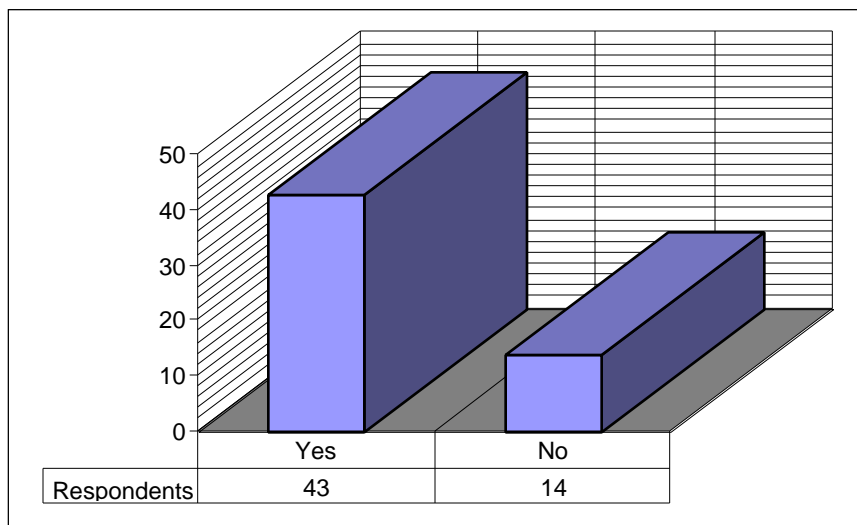
Recommend Distance Learning Class

Question: Would you recommend this class to a friend? If not why?

The next question asked if the student would recommend this class to a friend?" This required a yes or no response. The phrasing of the question did not ask about the use of technology for the class. Forty-three students said they would recommend this class to a friend. Fourteen would not. (See Table 9)

Table 9:

Students: Would You Recommend This Class to a Friend?



The second part of the question asked the students who responded “no” to say why they would not recommend the distance learning class to a friend. (See Table 10.) Only sixteen students provided answers to this part of the question.

Of those, five responded yes, but added a qualifying statement to yes which still seemed to indicate that they would recommend the class to a friend. A sixth student responded with a qualified “maybe” because some people like distance education classes better. Of the remaining ten respondents, six indicated they felt they needed a “live” teacher. Three students indicated it was too hard, uninteresting, or too hard to stay focused.

Table 10:

Students: Why Student Would Not Recommend the Class to a Friend

Student	Question: Would you recommend this class to a friend? If not why?
7	Yes – But only if they couldn’t go to a traditional class! There were parts that were too advanced, if you didn’t understand some of it already!
8	No – I didn’t feel I learned the difficult material for this particular class without the hands on experience with traditional classes.
22	Yes – Mostly because the teacher was amazing, not because of the distance education content.
23	Yes - I know that the quality of the videotapes has gone up from when I took physiology.
25	No – Was hard to learn from.
33	Yes – Only if they have their own computer.
36	No – I do not like distance education unless it is absolute last resort.
37	No – No teacher, can’t ask questions.
40	No – No help from instructor.
41	No – It was an uninteresting class.
44	No – No teacher, can’t ask questions.
46	No – It’s hard to pay attention.
47	Yes – If they attend the live lecture or understand they will be watching videos.
54	No – No teacher, can’t ask questions.
56	No – Not if they were counting on a live lecture. If they were planning on a video I would recommend they watch it alone so they can stop as they please.
57	Maybe – Some people like distance classes better than others.

Would the Student Enroll in Another Distance Education Class?

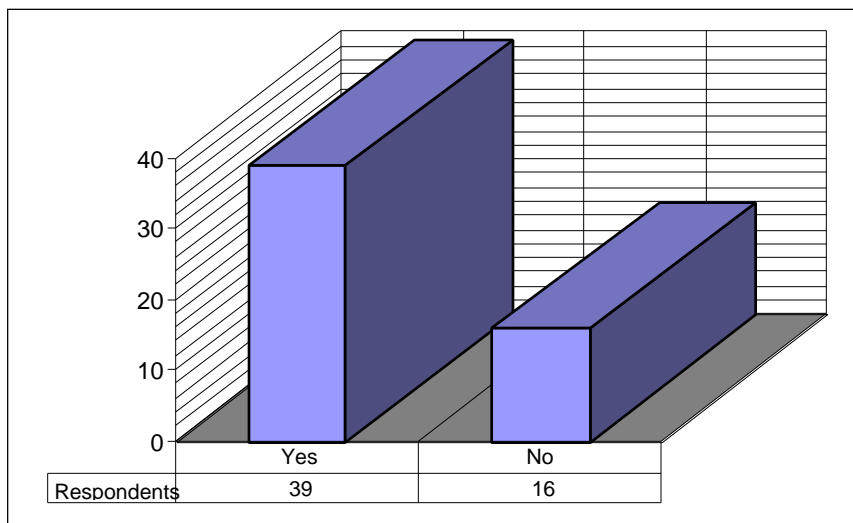
Question: Would you take another distance education class?

If not why?

In the next questions the student was asked if he or she would “take another distance education class? This required only a yes or no response. The response was quite positive. Thirty-nine students indicated that they would take another distance education class. Sixteen indicated that they would not take another course offered via distance education. (See Table 11).

Table 11:

Students: Would You Take Another Distance Education Class?



The second part of the question asked the students who responded “no” to say why they would not enroll in another distance learning class. (See Table 12.)

Sixteen students responded to this part of the question and three of those indicated that there were circumstances under which they would take another distance education course. Of the remaining thirteen, all indicated that they definitely would not take another distance education course. Six students wanted a live instructor with whom they could interact. One said that the credits were not counted toward their major. Another said the class was hard to understand, while another felt it was hard and boring.

Table 12:

Students: Reasons for Not Taking Another Distance Education Class

Student	Would you take another distance education class? If not why?
12	No – Credits not counted towards major.
15	No – I don't need others.
22	Maybe – Possibly, but I do not learn near as well on video as I do with a live lecture.
23	Only if I have to. I like the interactive atmosphere of the classroom much better.
25	No – hard to understand
35	No – Only if it is the only option. I think the program is great for some and the idea is great I just don't learn well by monotone non-interactive videos/CD's.
36	No – I do not like distance education unless it is absolute last resort.
37	No – If you don't understand something, you can't ask questions.
41	No – I like the interaction of a classroom.
44	No – If you don't understand something, can't ask questions.
46	No – Their (sic) hard to follow and boring.
47	No – Only if mandatory for my major or if there is a live lecture option.
53	No – I think that Nursing education is so important that the needs of the students can only be met in a "live" course.
54	No – If you don't understand something, can't ask questions.
56	Maybe – I don't have a choice. All of our nursing classes are distance education classes. Given a choice I would always opt for live lecture.
57	No – I feel I put it off too much.

Student Suggestions to Improve Distance Learning Classes

Question: What would you suggest to improve distance education classes at Central Wyoming College?

Another qualitative question asked students to suggest ways to improve the distance education classes.

Improvements suggested by the students included more advertising so that they could find out about courses, making more computers available to students in remote areas, and using e-mail rather than regular surface mail. Several suggested having a Web site for each class for interaction, and another suggested meeting electronically once a week for interaction. Three said that courses such as the nursing classes were too important to offer at a distance. (See Table 13).

Table 13:

Students: Suggestions to Improve Distance Learning Classes Qualitative Matrix

Student	Question: What would you suggest to improve distance education classes at CWC?
1.	More visual aids on videos
2.	Advertise it more! I live in Grand Lake, Colorado and I've never seen any type of advertising on it here. Get it into remote areas.
3.	No improvements needed
4.	Make computers (and TV/VCR) available to students interested in distance education.
5.	Provide more access to instructors
6.	
7.	Try to extend the length of the class & not make it so hurried up
8.	Only consider basic distance classes like math, English, etc. Harder more intense classes such as Pharmacology require lots of lab. Or extra time requiring travel time, which isn't the purpose.
9.	Have a limited # of classes, students tend to overload on distance classes.

Table 13: Students: Suggestions to Improve Distance Learning Classes Qualitative Matrix (continued)

Student	Question: What would you suggest to improve distance education classes at CWC?
10.	Use email rather than mail.
11.	
12.	
13.	
14.	
15.	Let students write more argumentations (sic). When they learn English, they can think life. It is very important because many students don't think life. So they have a lot of problems not to resolve. You have seen Columbia High School shooting. We should think this.
16.	I will like (sic) to take an education class at San Juan Basin Vo-tech school will be good for me to take.
17.	
18.	I think it is just fine.
19.	Have select classes depending upon regions programs
20.	I'm not really that familiar with it.
21.	None
22.	
23.	
24.	Encourage the use of the discussion group site for posting all quizzes and written assignments. The mail is slow but email is instant as long as long as the server is working.
25.	Have the instructor know what she is doing
26.	Ensure the integrity of the laboratory curriculum
27.	
28.	More upper division classes (pre-med)
29.	
30.	
31.	
32.	
33.	Have computers available at college branches away from main college.
34.	
35.	
36.	Do not offer nursing classes distance! They are too important.
37.	None
38.	I liked all services that were offered during my long distance classes.
39.	
40.	
41.	
42.	I'm not sure.
43.	
44.	

**Table 13: Students: Suggestions to Improve Distance Learning Classes
Qualitative Matrix (continued)**

Student	Question: What would you suggest to improve distance education classes at CWC?
45.	None
46.	Do not offer nursing courses distance – it weakens the nursing program at this school.
47.	
48.	
49.	
50.	No improvements needed.
51.	
52.	Try having a Web site for each class so questions can be ask (sic) on line. That way students feel as though they have easy and immediate access to the faculty.
53.	Have class available on the Web (or a specific Web site) so others in class can have interaction
54.	I think that Nursing education is so important that the needs of the students can only be met in a “live” course.
55.	None
56.	No nursing classes should be offered this way - - they are too critical and learning does not occur. This makes it hard to support or recommend the CWC RN program
57.	None.
58.	I don't know
59.	No improvements needed
60.	I would be content with this distance learning experience if we could meet electronically once per week for a question and answer session.
61.	I would like a Web site set up for better communication between students and students teachers.

Student Suggestions for New Distance Learning Classes and Delivery Method

Question: What other distance education classes would you like offered from Central Wyoming College?

Class

Delivery Method (Interactive video, Internet, CD-ROM)

The next qualitative question asked students to answer two related questions.

The first part of the question asked students to suggest courses that they would like to take. The second part of the question asked students to state which delivery method they preferred for the class they wanted to take. The delivery method options were interactive video, Internet, or a CD-ROM.

Only eleven students answered the questions with other courses or delivery method. Most of these students wanted additional allied health field related courses. One respondent wanted women's studies. Two respondents requested English courses and one respondent requested math courses

Most students said they wanted all three delivery methods, several wanted video. One student wanted live instructors with laboratories. (See Table 14.)

Table 14:

Students: Suggestions for New Distance Learning Classes and Delivery Method Qualitative Matrix

Student	Question: What other distance education classes would you like offered from CWC?
1.	Class: 2 nd . Semester Pharmacy Delivery: Video
2.	
3.	
4.	Class: Women's Studies Delivery: Internet or video
5.	
6.	
7.	
8.	
9.	
10.	Class: Physical Therapy, Occupational Therapy Delivery: I like all 3.
11.	
12.	
13.	
14.	Not really sure.
15.	
16.	Class: Math 600, English 0700, Math 1000, Math 800
17.	
18.	I'm not too sure
19.	
20.	I think any class would work well.
21.	
22.	
23.	
24.	Class: How about PT or OT Classes. Delivery: All three methods are great when used together
25.	NONE
26.	Class: Microbiology Delivery: Internet
27.	Class: Biology, Chemistry, Physics Delivery: Real instructors with Labs
28.	Class: Advanced anatomy
29.	
30.	
31.	
32.	

Table 14: Students: Suggestions for New Distance Learning Classes and Delivery Method Qualitative Matrix (continued)

Student	Question: What other distance education classes would you like offered from CWC?
33.	Class: Pathophysiology Delivery: Interactive Video/CD-ROM
34.	
35.	
36.	
37.	
38.	Class: English Delivery: Interactive Video
39.	
40.	
41.	
42.	
43.	
44.	
45.	
46.	
47.	Class: ARST 1000 Delivery: Interactive video
48.	
49.	
50.	
51.	
52.	
53.	
54.	
55.	
56.	None
57.	None
58.	
59.	
60.	
62.	Delivery: Interactive video/Internet

Recommendations:

The main feature of a traditional class that students missed was the ability to interact immediately with the instructor. As a transition for students who are just beginning to take distance education classes, it would be useful to have the instructor hold audio conferences several times during the week until students feel more comfortable with the new methods. After several weeks, students could be asked if they want to continue meeting this way.

Broadcast e-mail from a class list serv would also help students become connected with the teacher on a regular basis. Teachers would not have to answer the same questions frequently. As the same questions continue to be asked, a FAQ (frequently asked questions) for the course could be developed.

To help students become involved in the class immediately, a useful technique is to assign a collaborative and interactive exercise to be done over the Internet. The exercise should not require a great deal of preparation off line, but should encourage students to share information or pertinent experiences and begin their development as a community of learners.

Instructors have long known that the first day of class is important way to set the tone of the class. In a new environment such as distance learning, this is even more important as students are looking for reasons to feel comfortable and pleased with the new environment. If they find nothing that invites them to participate, the tendency is to “lurk” and not participate unless required to do so for specific assignments. Usually, assignments are due later in the class.

Research in distance learning indicated that a series of small assignments involved the students and led them to believe that they could work and succeed in the environment.

Another method to gain participation is to have a specific grade and rules for participation. Students have seldom heard a definition of what constitutes appropriate participation in the traditional classroom. As students move into new learning environments, they search for old rules that will apply. Finding none, they tend not to interact and wait for others to lead. If a clear set of guidelines is set and expectations are defined for participation, the student's level of comfort in the environment will rise.

There are many excellent methods that have moved students and instructors to new levels of interaction and the sense that they are building a new community of learners online and through other distance education delivery methods. These methods have been well documented through research.

It is recommended that the existing courses be reviewed again for a high level of early interaction with students, as well as a continuing level of collaboration and interaction throughout the course. New methods may need to be added or existing methods may need to be strengthened and/or increased.

Instructor Survey Instruments

An instructor survey was prepared by the STARS staff to administer to STARS faculty. Eight faculty members took part in the survey and returned the instrument. Their responses are presented here. A Likert scale was used where the figure one indicated strong disagreement with a statement, and the figure four indicated strong agreement with a statement.

1 = Strongly Disagree

2 = Disagree

3 = Agree

4 = Strongly Agree

Instructors returned the survey instruments to the MPDLP and all surveys were sent to the evaluator for analysis. The instructor survey instrument appears in Appendix C of this report.

Note that the number of respondents is quite small as this was the pilot test for the MPDLP. The results cannot be generalized to the project or other distance learning programs at this time. However, they are an indicator of the experiences of this group of instructors during the pilot courses. The courses were offered during the spring of 1999.

Instructors' Survey Instrument Responses

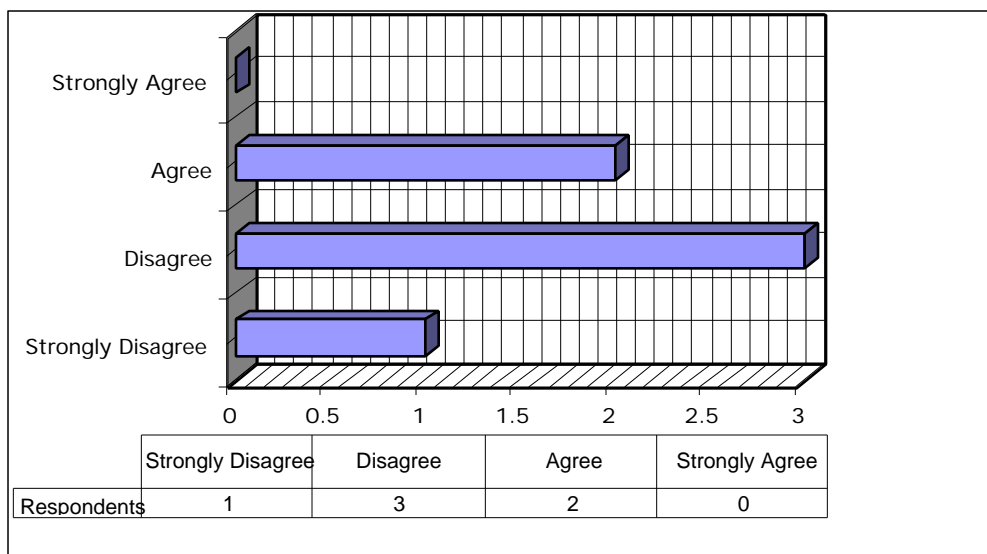
Student Achievement in the Distance Education Class

Question: Your students achieved better in your distance learning class.

The first question asked if the instructor felt that “Your students achieved better in your distance learning class.” Two teachers felt that their students did better with distance learning. Four of the six teachers responding believed that their students did not do better in distance learning than in their traditional class. (See Table 15).

Table 15:

Instructors: Student Achievement Better in the Distance Learning Class?



Student Achievement in the Traditional Class

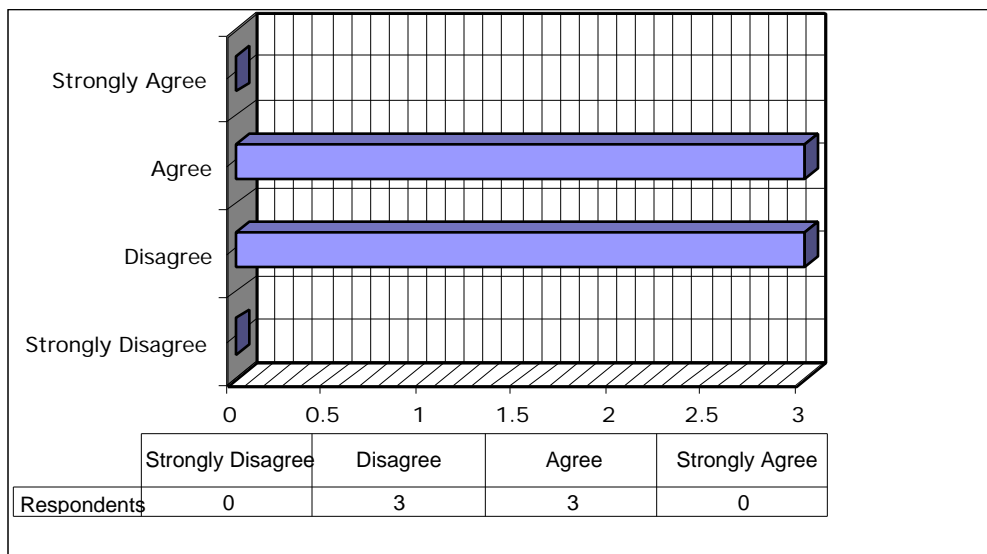
Question: Your students achieved better in your traditional class.

Instructors were asked if they felt that “Your students achieved better in your traditional class”. Responses from six of the eight teachers indicate that their opinion is evenly split between those who agree and those who disagree that students achieved better in their traditional class. (See Table 16.)

Note that this is a change in opinion from the previous question about student achievement in the distance learning class where one instructor strongly disagreed.

Table 16:

Instructors: Student Achievement Better in the Traditional Class



Preparation for Distance Learning Class

Question: You were better prepared to teach your distance learning class.

The next question asked the instructor if he/she felt “You were better prepared to teach your distance learning class?” Responses from five of the six instructors responding indicate that they felt they were not better prepared in their distance learning class, although one strongly felt better prepared. (See Table 17.)

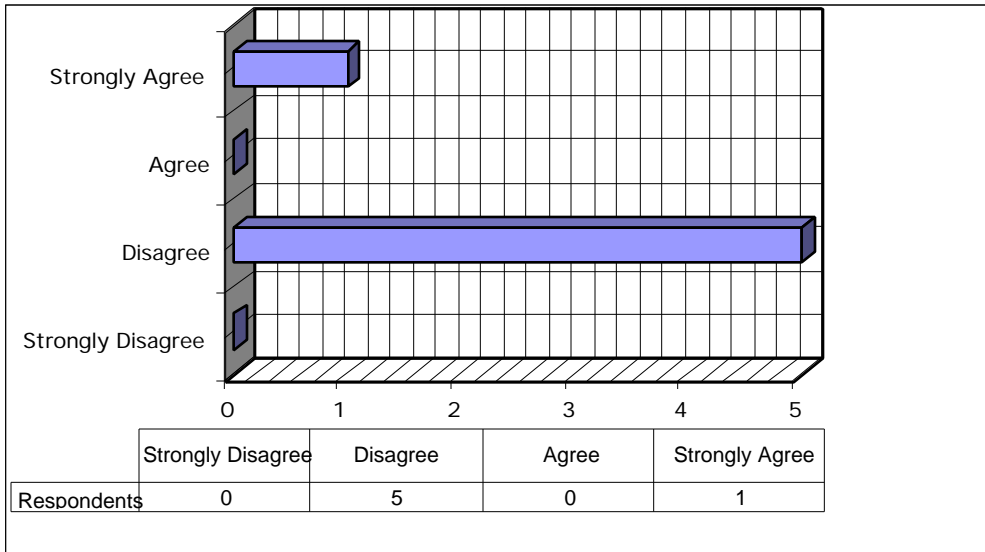
The question did not set a standard of excellence by which the instructors were to judge their preparation. Their personal opinion is reported in the response. This group of instructors experienced what was thought to be an ideal situation for their professional development to prepare and teach their class. The instructors had access to a new instructional design laboratory with multimedia computer equipment specifically installed for their use. An instructional technologist was assigned to support and help them almost exclusively throughout the development of their course. Approximately \$6,000 was allotted to pay for the development costs for each course according to the instructor’s own proposal. Given these advantages, it is puzzling to find a persistence in the responses that the instructors did not feel well prepared.

A deeper probe will be conducted as part of the ongoing evaluation to determine what the instructors felt was necessary to better prepare them. It is

plausible that their inexperience in teaching in a video environment led to this level of discomfort.

Table 17:

Instructors: Better Prepared for the Distance Learning Class



Preparation to Teach for Traditional Class

Question: You were better prepared to teach your traditional class.

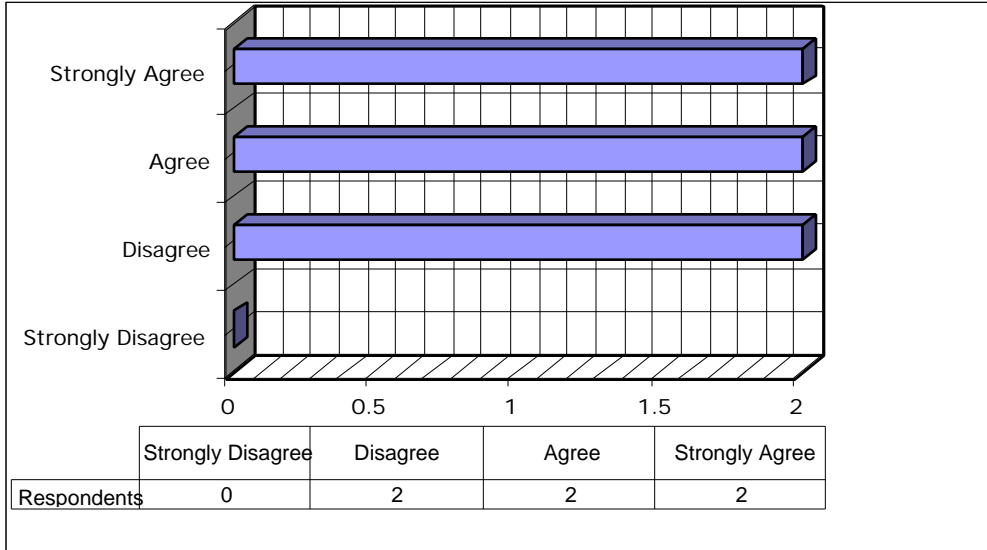
For comparison, the instructors were asked if “You were better prepared to teach your traditional class?” Responses from six of the eight instructors indicated that the majority (four) felt they were better prepared for their traditional class. Two disagreed that they were better prepared. (See Table 18.)

Note that there is an opinion shift between this question and the previous question about preparation to teach the distance learning class. Where five did not feel better prepared to teach the distance learning class, there is an expectation that there would be strong agreement that they were better prepared to teach the traditional class. Instead, we see three moving to other positions, and two still indicating that they are not prepared to teach traditional classes.

The evaluation will continue to monitor these positions to determine what might be provided as part of the project to move instructors to more positive feelings about their teaching.

Table 18:

Instructors: You Were Better Prepared for the Traditional Class?



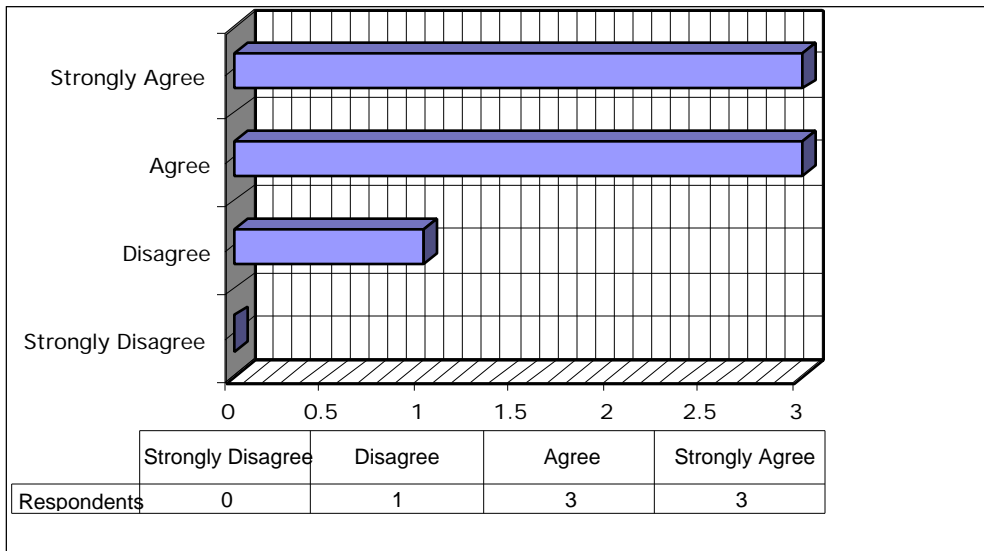
Distance Education Enhanced the Class?

Question: Distance education technology enhanced your class.

Instructors were asked if “Distance education technology enhanced your class?” Six of the seven instructors who responded indicated that distance education technology had enhanced the class. One instructor did not agree with the statement. (See Table 19.)

Table 19:

Instructors: Did Distance Education Technology Enhance the Class?



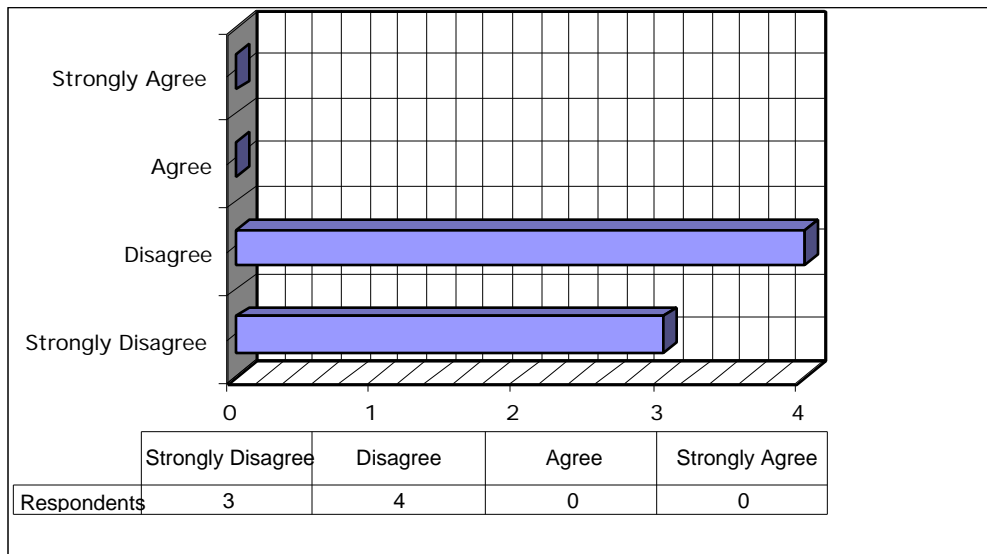
Does Distance Education Technology Interfere with the Class?

Question: Distance education technology got in the way.

Instructors were asked if “Distance education technology got in the way?” Responses from seven of the eight teachers indicate that distance education technology did not get in the way. Three felt strongly about this. None of the respondents agreed with the statement. Note that because of the way the question is worded, disagreement with the statement indicated that technology did not get in the way. (See Table 20.)

Table 20:

Instructors: Distance Education Technology Got in the Way



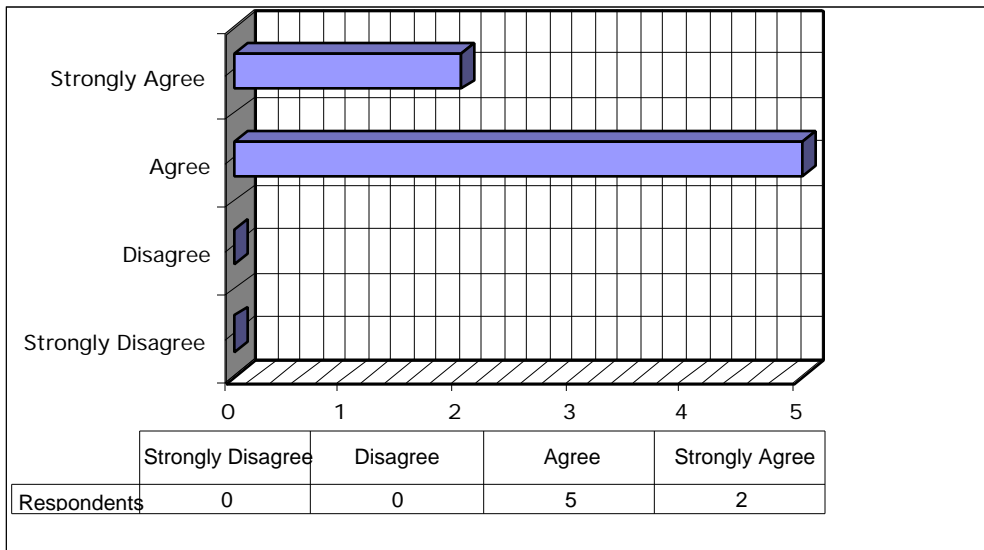
Distance Education Helps Present Complex Concepts

Question: The use of distance education technology helped present complex concepts thus enhanced student achievement.

Instructors were asked if they felt that “The use of distance education technology helped present complex concepts thus enhanced student achievement?” Notably, all seven of the instructors responding indicated that technology helped present complex concepts and thus enhanced student achievement. No instructor disagreed with the statement. (See Table 21.)

Table 21:

Instructors: Distance Education Helped Present Complex Problems and Thus Enhanced Student Achievement



Instructors' Reasons for Teaching a Distance Learning Class

Question: Why did you teach the distance education class?

(Please check all that apply)

- Volunteered
- Required
- New Opportunity
- Other _____

Instructors were asked, "Why did you teach the distance education class?"

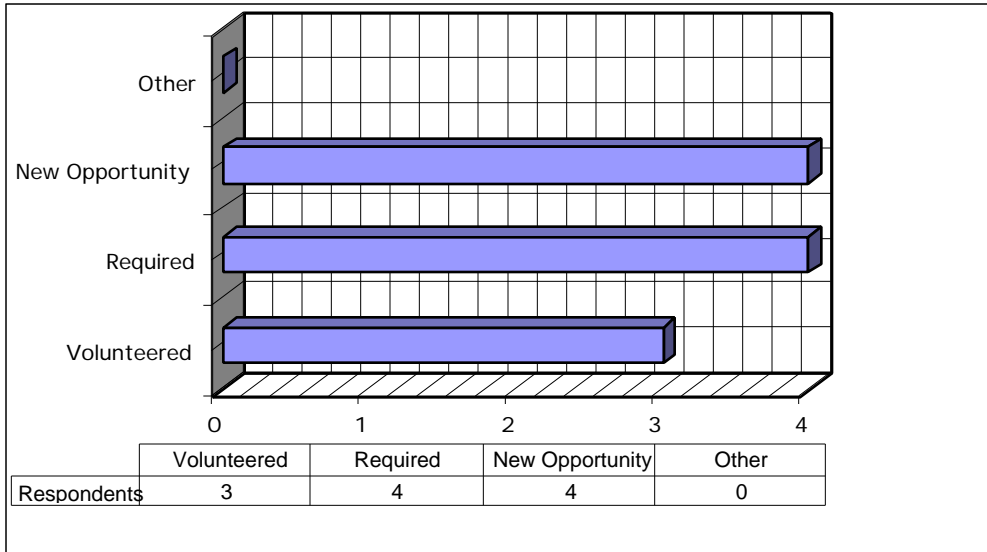
They could choose any or three possible reasons, or they could provide a different reason by using the "other" blank. The possible responses were:

- Volunteered
- Required
- New opportunity
- Other _____

Responses from seven of the eight instructors indicate that three volunteered to teach the distance education class. The remaining four indicated that they were required to teach the distance education course. Four also indicated that they considered teaching the distance education course appeared to be a new opportunity for them. (See Table 22.)

Table 22:

Instructors: Why Did You Teach the Distance Education Class?



Instructor Reasons for Liking or Disliking Teaching a Distance Learning Class

Question: What do you like the most about teaching a distance education class?

Question: What do you like the least about teaching a distance education class?

The instructor survey questionnaire included questions which required qualitative responses. These questions helped to clarify the quantitative responses.

When asked what they liked the most about teaching a distance education class, most responded that it was an opportunity to try something new that was needed for the students and the geographical area. Only one instructor mentioned the flexibility of teaching at a distance.

When asked what they liked least about teaching a distance education class, instructors commented about the lack of interaction, but as a function of students not taking responsibility for their own learning. Most of the literature on this topic suggests that it requires time for students to become accustomed to facilitation and that if all instructors require it, students will begin to change.

Instructors suggested that more time be allowed to develop the course, that support continue for instructors, and that threaded discussions be added to the online tools to provide interaction. Many commented that there was a need for more coordination before the class and more systems to assist them in this.

So that an individual instructor's responses to both questions can be compared, the responses are shown side by side in Table 23.

Table 23:

Instructors: Reasons for Liking or Disliking Teaching a Distance Learning Class

Instructor	Question: What do you like the most about teaching a distance education class?	Question: What do you like the least about teaching a distance education class?
Pharmacology 1	<ol style="list-style-type: none"> 1. All the phone calls and paperwork to keep in contact with students to make sure the course work was completed. 2. Grading tests asynchronous with class 3. Limited tutoring of distance students 	
Orientation Surg. Tech	The opportunity to try a different format.	Tracking Students
Fund.Comp 1	It provides a needed method of delivery for our area.	Not being able to give immediate feedback. I was disappointed that our students still refuse to take any responsibility for their learning even with a class like this which almost forces them to.
Human Anatomy		
	Flexibility – my time was better managed.	Student contact – the in-class exchange of ideas was missing
Fundamentals of Nursing	We now have professionally videotaped lectures	Took much preparation
Med. Surg. Nursing	Served a need for students at distance site.	Lack of communication with the students

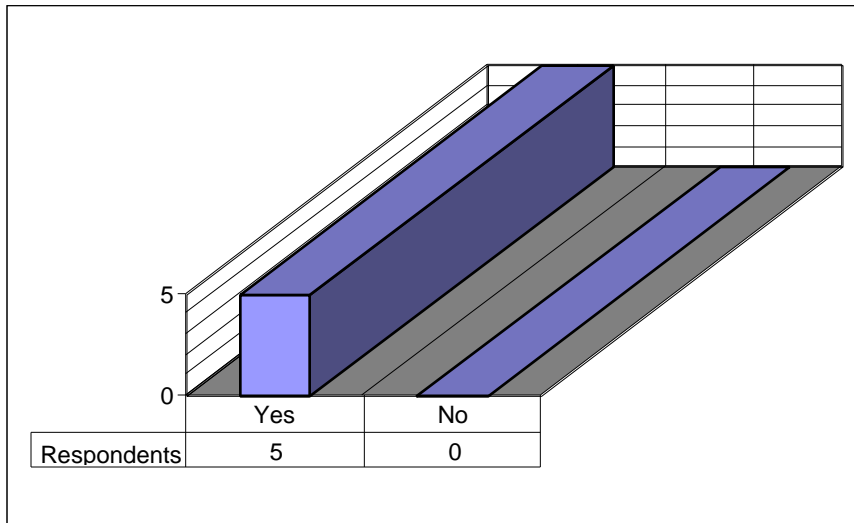
Desirability of Teaching Another Course by Distance Education

Question: Would you teach another distance education class?
If not why?

Instructors were asked if they would teach another distance education class. This required a yes or no answer. Five instructors responded to this question. All five indicated that they would teach another distance education class. (See Table 24.) There were no qualitative responses to the “If not why?” portion of the question.

Table 24:

Instructors: Would You Teach Another Distance Education Class?



Suggestions to Improve Distance Education Classes

Question: What would you suggest to improve distance education classes at Central Wyoming College?

Instructors were asked what they would suggest to improve distance education classes at Central Wyoming College. This required a qualitative answer. Six instructors responded to this question and five of them taught in the health area. Instructors said they wanted more support services to develop the course, more time to work on the course, better organization in the system that moves materials to and from students. One instructor suggested more coordination for dates. (See Table 25.)

Table 25:

Instructors: Suggestions to Improve Distance Education Classes

Instructor	Question: What would you suggest to improve distance education classes at Central Wyoming College?
Pharmacology 1	Better organization – a system to get course work and tests to and from students
Orientation Surg. Tech	Greater technical support to these developing the courses.
Fund.Comp 1	More time is needed to create, prepare and assess the course.
Human Anatomy	
	1. Convert to internet and add threaded discussions. 2. Change testers from multiple choices to short answer essay.
Fundamentals of Nursing	Continue to provide assistance and resources (i.e. laptop computer.) Perhaps set up a class so will based classes would be similar format
Med. Surg. Nursing	More coordination prior to the course start date regarding s of communication, interesting dates, returning materials to students, giving feedback to students

Other Distance Education Classes to Teach and Preferred Delivery Method

Question: What other distance education classes would you like to teach from Central Wyoming College?

Instructors were asked if there were other courses that they would like to teach as distance education classes, and if so, the delivery method which they preferred. The delivery method choices were interactive video, Internet, and CD-ROM. Only two instructors responded to this question but both indicated that there were two courses that they would teach. Internet and CD-ROM were the delivery methods that were indicated. (See Table 26.)

Table 26:

Instructors: Other Distance Education Classes to Teach and Preferred Delivery Method

Instructor	What other distance education classes would you like to teach from Central Wyoming College?
Pharmacology 1	
Orientation Surg. Tech	
Fund.Comp 1	
Human Anatomy	
	Class: St. Pharm. Course Delivery: Currently Teaching on CP
	Class:RN Refresher Delivery: CD or Internet
Fundamentals of Nursing	
Med. Surg. Nursing	Class: NRST 1520 Client in the Community 1 Delivery: Internet
	Class: NRST 2400 Nursing Trends Delivery: Internet

Comparison of Student and Instructor Survey Instrument Responses

Students and instructors received survey instruments for the pilot courses taught during the Spring 1999 semester at Central Wyoming College.

In some cases, students and instructors were asked the same questions. While the figures are too small to generalize the responses to this project or to other distance education projects at this time, it is important to note where there was agreement and disagreement among the instructors and students.

Did Students Do Better in the Distance Learning Class or the Traditional Class

Students' question:

“You did better in your distance learning class compared to a traditional class.”

Instructors' two questions:

“Your students achieved better in your distance learning class.”

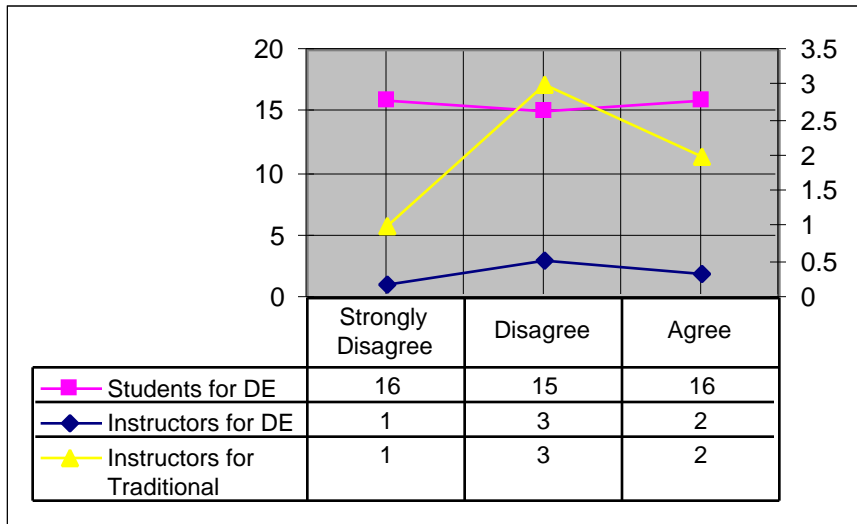
“Your students achieved better in your traditional class.”

Students and instructors both felt that students did not do better in the distance learning class than in the traditional class. However, in the second

question posed to instructors, respondents were split evenly over whether students achieved better in the traditional class. (See Table 27.)

Table 27:

Students & Instructors: Comparison of Achievement in Distance Education and Traditional Classes



Distance Education Technology Enhanced the Class for Students and Instructors

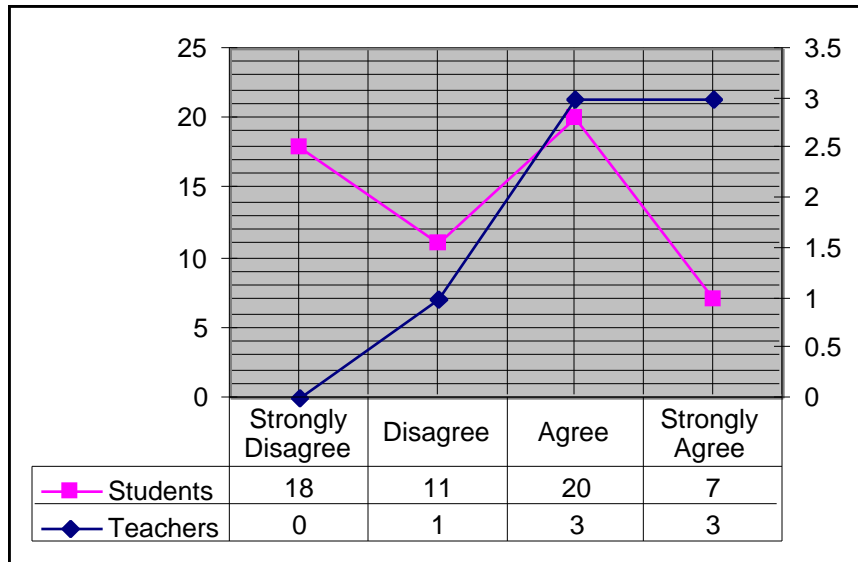
When students and instructors were asked if distance education technology "enhanced your class;" teachers felt strongly that technology did enhance the class. Students were more evenly split on the answer with twenty-seven liking the way technology was used and twenty-nine not liking the technology as much.

This disparity may indicate an increase in the comfort level that instructors had developed in working with the technology. Students had not had the same amount of time or intensity of endeavor as instructors had experienced during the conversion of the class from a traditional to a distance education class. It takes time for students to become accustomed to the use of technology and comfortable in mediated classes. This was the first mediated class taken by the majority of the students. (See Table 28.)

Table 28:

Students & Instructors: Comparison of Distance Education Technology

Enhanced the Class



Distance Education Technology Got in the Way for Students and Instructors

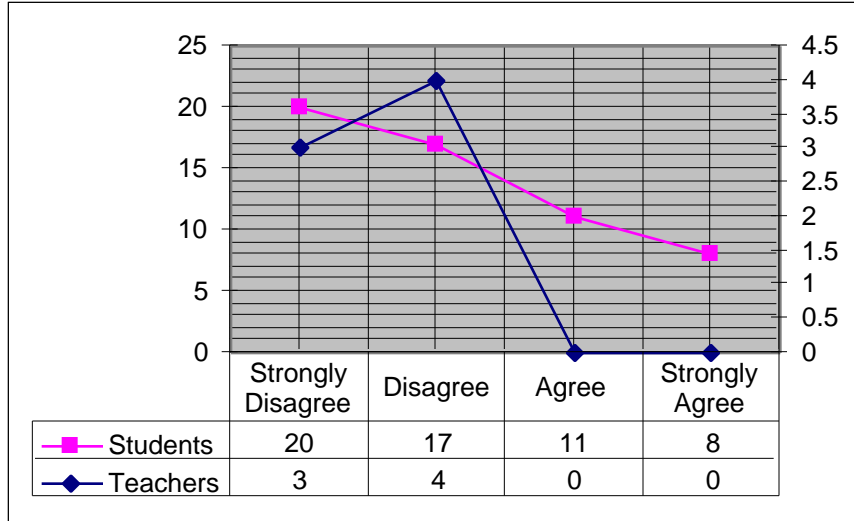
Students and instructors were asked if technology got in the way? Instructors felt that it did not get in the way. Of the students responding, thirty-seven did not feel that it got in the way and eighteen felt that it did get in the way.

Students who felt that the technology hampered them in some way may have just begun to work through technology. Based on the qualitative student responses, having access to the teacher and class interaction were the items that probably contributed to this answer.

To some extent this is a perception question for the instructor. Did they perceive that technology got in the way of learning for their students? However, the question could also have been interpreted by the instructor as asking if the technology got in the way of their teaching the class. For example, did the instructor feel that it was harder to teach the class because of technology. (See Table 29.) Note that a response of strongly disagree or disagree indicates that technology did not get in the way.

Table 29:

Students and Instructors: Technology Got in the Way



Did Distance Education Technology Help Students Understand Complex Concepts as Determined by Students and Instructors

Students were asked if "the use of distance education technology helped you understand complex concepts?"

Instructors were asked if they felt that "The use of distance education technology helped present complex concepts thus enhanced student achievement?"

Note that while these questions are similar, they are not quite the same.

Of the students responding, thirty-one felt that the technology did not help them understand complex concepts and twenty-five felt it did help them understand complex concepts.

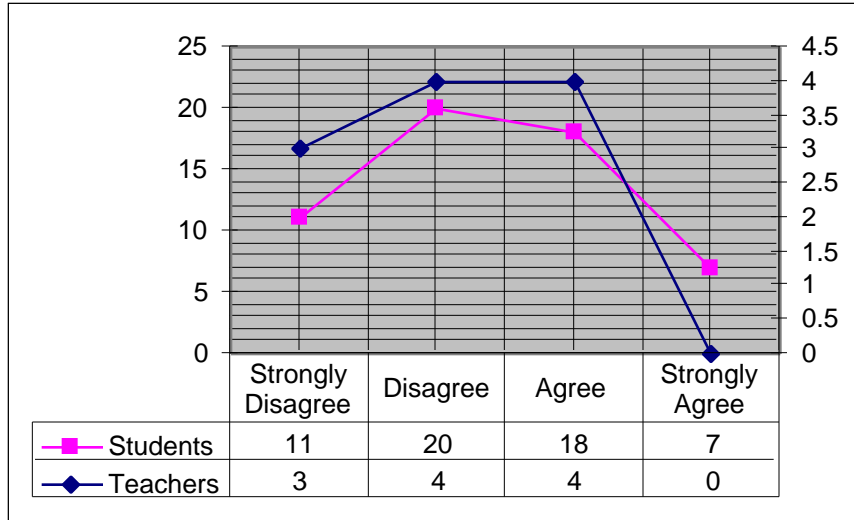
The instructors felt that the technology did help students understand complex concepts and thus it enhanced student achievement. (See Table 30.)

The compared responses show a difference in opinion about the use of technology as well whether its use helps students to understand complex concepts. The questions did not clarify which component was being addressed.

It is possible that the instructional design of the mediated material did not meet the learning style needs of all students or it might not have been as clear as it should have been. As there was no follow up question to determine the real reason, a further process for the evaluation will be to determine what would help students understand complex materials.

Table 30:

**Students and Instructors: Use of Distance Education Technology Helped
Students Understand Complex Concepts**



Would Students Take Another Distance Education Class

Would Instructors Teach Another Distance Education Class

Students were asked if they would take another distance education class. Of the fifty-five students responding about two thirds said they would take another class. Sixteen indicated that would not take a distance education class.

Teachers were asked if they would teach another distance education class. Five teachers responded to this question and all five said they would teach another distance class. Two teachers did not respond to the question which indicates uncertainty. It cannot be determined whether they tend to the positive or negative side of the question.

The students who responded to the “If not why?” portion of the question were quite definite in their answers. The responses indicated a high comfort level with the traditional classroom where they felt they learned better. This could be because they are accustomed to that delivery mode. It is highly possible that these students have not begun to move into a self-directed and independent level of learning where the instructor facilitates the class. Becoming a self-directed and independent learner is a process. It can be perceived as a skill that can be learned over a period of three to six months.

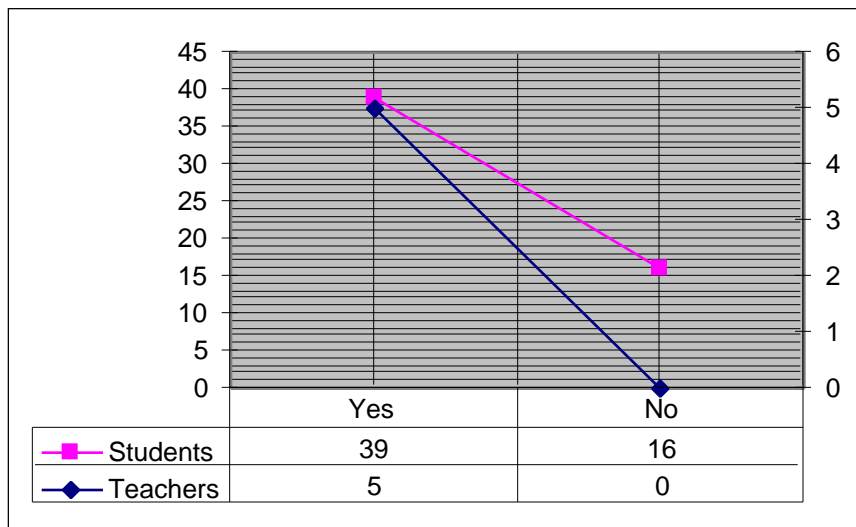
Students who say they will not take another distance education course because of their need for interaction and a live instructor may need an additional course in learning how to learn. Few students realize that they are dependent learners until the situation is made apparent to them.

It is equally true that few instructors realize how they maintain students at a dependent and teacher directed level until it is made apparent to them.

Can too much be made of the reasons students choose not to take additional distance education programs? Without attributing great significance to these responses, it is possible that one third of the target audience for this project may not benefit from it. (See Table 31).

Table 31:

Students and Instructors: Would You Take/Teach Another Distance Education Class



STARS Project Evaluation Sites

1999-2002

To date, the STARS Project has primarily concentrated on the technology plan, requests for bid proposals, contractor selection, equipment selection, conversion of classrooms, and equipment installation. The other primary activity has been the selection of courses for development and conversion to mediated instructional methods supported by the STARS infrastructure technology. Professional development for instructors, administrators and technicians has also occupied an extensive amount of time.

A minimal number of students have taken part in pilot courses delivered at a distance, but not necessarily over the STARS system.

In anticipation of the distance learning courses that would be delivered beginning in the Fall of 1999, a set of requirements for in-depth evaluation sites was established.

A STARS Board Meeting was held in the Spring of 1999 during which the focus site guidelines were explained in depth. A major topic of discussion was student learning impact and how students would be followed throughout the remainder of the grant.

At that meeting college and district leaders agreed that they would participate in the STARS in-depth longitudinal study of students. They also agreed to an in-depth study of instructors who will be impacted by the STARS Project. The following set of guidelines was accepted at a board meeting of the partners. The

sites will be contacted during the Fall of 1999 with further information about the evaluation. The selection guidelines are listed in Table 32.

Table 32:

STARS Evaluation Focus Site Requirements

Requirement	STARS Project Sites
Evaluation Focus Site Selection	<ul style="list-style-type: none"> • Sites self select for participation as a focus site • At least one site per partner is preferred • Sites can be rural, urban or suburban
Evaluation Duration	<ul style="list-style-type: none"> • The site agrees to serve as a STARS Project Focus site through June 2002. • Focus sites will actively participate as soon as the system is installed and classes are routinely offered at the site.
Evaluation Participation	<ul style="list-style-type: none"> • Evaluation instruments will be provided online and filled out entirely by instructors and students (if provided). • The evaluator will conduct focus interviews at the site or by audio conference with the instructors and administrators. • The evaluation sites agree to be available for site visits during which the evaluator may interview administrators, instructors, students and parents.

Table 32: STARS Evaluation Focus Site Requirements (continued)

<p>Use of Program Modules</p>	<ul style="list-style-type: none"> • Use all courses provided by the STARS Project for the appropriate age level at the site and specific classroom. 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 site events, the site will obtain tapes of the missed programs and use them for the class along with Internet access.
<p>Materials Duplication</p>	<ul style="list-style-type: none"> • 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.
<p>Program Reception</p>	<p>Receive and use programs live or via tape during the same week that the program airs.</p>
<p>Student Program Viewing</p>	<p>Students view their program in their own classroom and not in a general resource room used by other students. Students may view programs at home or at work.</p>
<p>Interaction via Internet</p>	<ul style="list-style-type: none"> • Students will use Internet to access materials through a computer located in the classroom (computer lab access is not sufficient). • The instructor will actively use Internet as part of the class participation in the program.

Table 32: STARS Evaluation Focus Site Requirements (continued)

<p>Interaction via Telephone</p>	<ul style="list-style-type: none"> • 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 when this is appropriate.
<p>Other Program Enhancements</p>	<ul style="list-style-type: none"> • No other content source will be used except the textbook adopted for use by the school district. • The class will not use materials, demonstrations, or manipulatives provided by other projects or publishers for the same content. • Using other enhancements is a confounding variable that would destroy the validity of the research for that classroom.
<p>Technology Use and Maintenance</p>	<ul style="list-style-type: none"> • The site will maintain a minimum level of technology and use it as part of the STARS Project so that it can be evaluated. • Malfunctioning equipment including microwave and/or satellite dishes and computers will be repaired immediately so that students will be able to complete all programs in a timely fashion.
<p>Criterion Referenced Testing</p>	<p>If the state or district uses criterion referenced testing, access to scores for students will be provided to the evaluator</p>
<p>Professional Development</p>	<p>Instructors will view all professional development programs provided for the course by the STARS Project.</p>

Table 32: STARS Evaluation Focus Site Requirements (continued)

<p>Participation by Principal, Department Chair, or Administrator</p>	<ul style="list-style-type: none"> • The principal, department chair, or administrator agrees to hold a meeting with students, their parents/guardians (if this is appropriate for the students' age), and instructors to review the school's expectations about using the STARS Project, the improvements that have been made to accompany the STARS Project, the nature of the evaluation, and to answer any questions. • The principal, department chair, or administrator agrees to hold monthly meetings with all STARS Project instructors to keep them informed about successes and problems.
<p>New Courses</p>	<ul style="list-style-type: none"> • If the STARS Project adds new courses during the remainder of the grant, the site agrees to use the new programming without dropping the use of other Project programming. • All of the educational technology provided by the STARS Project will be used by the evaluation site. For example – the classroom would use all video, multimedia, and Internet.

Student Identification

Students who participate in STARS Project courses during the 1999-2000 year will be identified by grade level. Plans will be made with the school districts to follow students to determine what, if any, learning impact transferred to their work at the current grade level and what effects can be observed in their work, grades, and tests in future grades through 2002 when this grant ends.

Student Longitudinal Study

Meetings were held with the MPDLP staff to begin the process of planning how to track students after classes begin in Fall, 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 STARS student will impact the student's learning and progress in the future.

The process includes the following steps:

1. Identification of instructors and classrooms where the STARS Project programs will be used for several years.
2. Identification of instructors who may have used a distance learning project before 1997.
3. Identification of classes where the STARS Project 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 STARS student

5. Identification of future benchmarks suitable for the STARS Project 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 500 to 1,000 students who meet the above requirements and others which may be identified.

Participation by School District

The following school districts and their superintendents are participating in the evaluation at this time (see Table 33.) Other districts will be added.

Table 33:

School District Participating in the Evaluation

School District	Dist #	School	Superintendent
Fremont County School District	1	Lander	Tom Martin
Fremont County School District	2	Dubois	Lon Streib
Fremont County School District	6	Wind River	Duane Roehrick
Fremont County School District	14	Wyoming Indian	Lon Hoffman
Fremont County School District	21	Fort Washakie	Karl Berlin
Fremont County School District	24	Shoshoni	Craig Beck
Fremont County School District	25	Riverton	Mike McClaren
Fremont County School District	25	Riverton High School	Larry Jenkins Principal
Fremont County School District	38	Arapahoe	Ken Eggleston
St. Stephens Indian School		St. Stephens Indian School	Gerri Boesch Technology Specialist

1999-2000 Survey Instruments

New programs and procedures have been put into place for the Mountain Plains Project as Phase 1 infrastructure and equipment installation nears completion. Survey instrument 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, determine what procedures work well and where corrections are needed. The instrument will question participants about the adoption and implementation stages that occurred at the sites.

Survey instruments will be developed and published for online use by K-12 and higher education students, teachers, and administrators . The data will be collected in a database and statistically analyzed. The courses that will be offered in Fall 1999 and Spring 2000 have not been fully approved.

As part of the student learning component of the evaluation, instructors will develop an authentic assessment and a set of rubrics to assess the student's work. Ideally, students will also be able to participate in the development of the rubrics to increase their understanding and skill in self direction. Across the board reporting rubrics will be developed so that consistency in reporting to OERI can be created. Teachers and students will take part in the scoring and reporting.

OERI Performance Indicators: The OERI performance indicators data will be collected 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.

Causal Assumptions for MPDLP

Providing equitable access to equipment and courses includes the responsibility of providing the additional professional development for teachers. It is also recognized that students must be provided with additional courses and required work so that the provided access can be beneficial. Making the equipment and programming available is not sufficient.

A number of variables can contribute to student learning. Instructor development has a causal effect on student learning. Available equipment and programming has a causal effect on student learning. Students' knowledge about their ability to learn and how they learn has a causal effect on their learning. The student's level of self direction and independence has a causal effect on their learning. Cultural, family and other variables have a causal effect on learning.

MPDLP does not assume that students will automatically learn because the material is being delivered via technology. Orientation for students has been established. The pilot study shows that this is not enough for students to successfully transition from traditional to distance education courses. The students' needs for access to instructors and interaction with instructors must be

recognized. These components of the program must be increased if the program is to be successful for more students.

Over the past two years, MPDLP has taken the additional steps that provide strong professional development for faculty. Faculty members now need to take the additional step of understanding that their professional development impacts student learning.

Instructors were asked if they saw gains in their students' learning that they could attribute to the course's technology delivery. They were not asked if their professional development and preparation of the course contributed to the gains in the students' learning. When this question is asked during the 1999-2000 evaluation, it will be a device to determine what accounted for the biggest gains by students. It will also be used as a device to connect the causal relationship between faculty professional development that leads to increased student gains.

The literature is clear about the detrimental impact of low levels of professional development for the instructor and the student in technology based programs. However, the research has not looked at the reverse situation to determine how professional development in technology based programs contributes to learning impact for students. What professional development is necessary? How much time is necessary for professional development? What skills are necessary in multiple media based programs? What ongoing professional development level is needed? What coaching and mentoring support can enhance the program? How do teacher groups enhance the

motivation to improve the program and student learning? What are the expectations that must be met by a project's audiences including the student end user, the project administration, the US Department of Education and Congress?

There is a body of literature about instructor and teacher professional development and who assumes responsibility. Most projects do not have the funding to assume the entire financial burden to retrofit faculty to effectively use technology.

- Schools of education have tended to respond too slowly and continue to graduate new teachers who are not technology literate.
- Inservice programs for K-12 teachers typically provide two to four days of state or district mandated development that may not touch on technology.
- Higher education tends to assume that faculty will take the responsibility for their own continuing development, an assumption not sustained by expertise demonstrated in the classroom.

It becomes clear that as we move deeper into the an expanded age of information and communication, responsibilities and expectations of the faculty for K-20 must be revised. Distance education and distributed learning are no longer viewed as demonstration or pilot programs. Sufficient studies have shown that there is no significant difference in learning between traditional and mediated classrooms.

While the research on using the medium of television has been accepted, the research has not been done on the impact of multiple media classes such as those presented by video, Web, audio conferences, textbooks, and manipulatives. Is there a synergistic effect of multiple media? Do multiple media impact student learning styles and multiple intelligences differently than a one medium technology delivery? We have barely asked these questions and do not have the answers that can be generalized to the field.

MPDLP has been focused on infrastructure installation without the significant pressure of having to air courses during the project's first two years. Because of this, more time has been spent on instructor development than has been the experience of most Star Schools Projects. This provides the evaluation with the unique opportunity to observe and interview teachers who have had a model professional development background coupled with the time and funding to develop courses which they have taught in classrooms for several years.

The variables of their experience that contributed the most to their success and to their students' learning can be studied in detail. During the next year of the project, the evaluation will examine what variables contributed most to student success.

It is important to observe that different faculty may have changed in different ways although they received the same professional development. While there is always an attempt to provide consistency in professional development, it is not always possible. Instructors who are at different levels in their own professional

development and years of teaching will respond and develop differently. The research design will present a number of variables. The small number of instructors may prevent the globalization of findings. However, the search for variables that consistently develop strong faculty members will be valuable if the causal relationship to student learning can be validated.

An additional level of complexity may be added by forming faculty groups with members who are at different levels of professional development so that they might benefit from sharing information and mentoring. Subgroups may be developed among instructors with similar learning gains identified in their students.

K-12 instructors will begin teaching courses in the Spring and Fall, 2000. They will add additional levels of complexity to the Project's research and evaluation. K-12 and college level instructors tend to feel that they have little in common, yet there are common instructional strategies in the traditional classroom and in the mediated classroom that cross K-20 borders. The collective group of K-20 instructors constitute the system of education that operates in a region. Together they are largely responsible for the educational level in the region. As such, they are a major factor in the economic success of the region whether this is acknowledged or not.

Because of this, the evaluation will attempt to determine how the technology impacts the entire system of education in the region. It is one of the few Star Schools projects that crosses the traditional line between K-12 and higher

education with one administration. It is the only project that currently has the authority to build infrastructure in a four-state area.

Because the technology is just now being completed in the Riverton region, the initial and longitudinal impact of the technology has not been determined. How does the connectivity in a rural area change the area? How does access to previously unavailable basic and advanced courses change the student, the instructor, and the region? What is the economic impact of the connectivity on the region, the state and the partner states? What shared goals can be accomplished and how are lives changed? Are the changes profound? Does equitable access create a profound change in a project area?

Summary

Perceptions of how technology impacts one student have been shown in the microcosm of this pilot study. Some students learned well in a mediated course and some students felt that they did not learn as well. If the course is pivotal to a degree program and the person's future skill, one course can impact a lifetime.

What would have been the impact of not having access to the course and taking it?

Appendix A

Mountain Plains Distance Learning Partnership

Five-Year Evaluation

October 1, 1997-September 30, 2002

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

**Carla Lane, Ed.D.
Principal Evaluator
The Education Coalition
San Clemente, CA 92672
949-369-3867**

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:

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:

- To what extent were 160 distance learning classes developed?
- To what extent did the educational institution integration of technology into the curriculum actually improve student achievement.
- 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
- 3c. All target schools will remain active in the use of distance learning

Performance Indicators:

- To what extent did all teachers participate and complete training.
- To what extent did teachers participate after training
- To what extent did teacher productivity increase which is directly attributable to the training
- To what extent did student learning improve as a result of professional development
- To what extent was distance learning used to provide staff development in other areas
- After training, to what extent did teachers move through the stages of adoption 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 that 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
<p>Course/Curriculum Development Model for teachers</p> <p>What strategies used to develop courses? What strategies used to train instructors?</p>	<p>Documentation; Interviews; Surveys</p>
<p>Teacher Inservice to Teach at a Distance and to Meet Standards, Guidelines</p> <p>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 methods?</p>	<p>Documentation; Interviews; Surveys Review curriculum, manuals/other materials teacher inservice</p>
<p>Courses: Review Courses</p> <p>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?</p>	<p>Documentation; Interviews; Surveys; Review tapes of live transmissions; computer programs; print materials; constructivist methods utilized</p>
<p>Engineering Design</p> <p>Smooth integration path Upgradable; Expandable; Interoperable</p>	<p>Documentation; Interviews;</p>

<p>Use of multiple technologies Location of classrooms; Location of studios Design of classrooms; Design of studios Problems; Recommendations</p>	<p>Surveys Photos of installations</p>
<p>Coordination with Other State Networks</p> <p>Efficient use of existing networks Build on existing infrastructure in partner states Smooth integration of networks Smooth transition to services</p>	<p>Documentation; Interviews; Surveys</p>
<p>Teacher Training Model</p> <p>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</p>	<p>Documentation; Interviews; Surveys Evidence of: staff interest; equipment proficiency; continuing use; adoption and diffusion</p>
<p>Student Outcomes</p> <p>Demographics of students - diversity and age Enrollment patterns Teacher evaluation of student outcomes Was the delivery method effective 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</p>	<p>Documentation; Interviews; Surveys Evidence of student interest; equipment proficiency; content proficiency; change observed by parents</p>
<p>District/or Area Adoption</p> <p>Additional Funding Other Resources Other evidence of commitment</p>	<p>Documentation; Interviews; Surveys</p>
<p>Build the System</p> <p>Upgrade/expand studios Upgrade/expand sites/classrooms</p>	<p>Documentation; Interviews; Surveys</p>
<p>Strengthen curriculum and academic offerings or students in rural, geographically isolated communities</p>	

<p>in target area through use of DL strategies.</p> <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 	<p>Documentation; Interviews; Surveys</p>
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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

Mountain Plains Distance Learning Partnership

Student and Instructor

Survey Instruments



Distance Education Student Survey

Our records show that you were recently enrolled in a distance education class from Central Wyoming College. This class was re-designed for distance education as part of a Federal Stars Schools grant. We are required as part of our continued funding to provide feedback on classes designed and delivered via distance education. Please take a moment to complete the following survey about your distance education class and return it in the enclosed envelope. Thank you for your assistance!

Please list the distance education class (es) and the semester which you were enrolled at Central Wyoming College.

Class	Semester	Location
_____	_____	_____
_____	_____	_____

Using the following Likert scale where 1= Strongly Disagree; 2 = Disagree; 3 = Agree; 4 = Strongly Agree, please respond to the following statements.

- | | |
|--|---------------|
| You did better in your distance learning class compared to a traditional class. | 1 2 3 4 |
| You prefer a distance education class compared to a traditional class. | 1 2 3 4 |
| Distance education technology enhanced your class. | 1 2 3 4 |
| Distance education technology got in the way. | 1 2 3 4 |
| The use of distance education technology helped you Understand complex concepts. | 1 2 3 4 |
| Why did you take the distance education class? (Please check all that apply) | |
| r Required class in program | |
| r Self enrichment | |
| r Convenience (e.g., does not require travel) | |
| r Other _____ | |

What do you like the **most** about taking a distance education class?

What do you like the **least** about taking a distance education class?

Would you recommend this class to a friend? r Yes r No
If not why?

Would you take another distance education class? r Yes r No
If not why?

What would you suggest to improve distance education classes at Central Wyoming College?

What other distance education classes would you like offered from Central Wyoming College?

Class	Delivery Method (Interactive video, Internet, CD-ROM)
_____	_____
_____	_____
_____	_____
_____	_____

***Thank you for your assistance! Please return the survey in the enclosed envelope to
Mountain Plains Distance Learning Partnership
Central Wyoming College
2660 Peck Avenue
Riverton, Wyoming 82501***



Distance Education Teacher Survey

Our records show that you recently taught a distance education class from Central Wyoming College. This class was re-designed for distance education as part of a Federal Stars Schools grant. We are required as part of our continued funding to provide feedback on classes designed and delivered via distance education. Please take a moment to complete the following survey about your distance education class and return it in the enclosed envelope. Thank you for your assistance!

Please list the distance education class (es) you taught from Central Wyoming College.

Class	Semester	Location
_____	_____	_____
_____	_____	_____

Using the following Likert scale where 1= Strongly Disagree; 2 = Disagree; 3 = Agree; 4 = Strongly Agree, please respond to the following statements.

- | | |
|---|---------|
| Your students achieved better in your distance learning class. | 1 2 3 4 |
| Your students achieved better in your traditional class. | 1 2 3 4 |
| You were better prepared to teach your distance learning class. | 1 2 3 4 |
| You were better prepared to teach your traditional class. | 1 2 3 4 |
| Distance education technology enhanced your class. | 1 2 3 4 |
| Distance education technology got in the way. | 1 2 3 4 |
| The use of distance education technology helped present complex concepts thus enhanced student achievement. | 1 2 3 4 |

Why did you teach the distance education class? (Please check all that apply)

- Volunteered
- Required
- New opportunity
- Other _____

What do you like the **most** about teaching a distance education class?

What do you like the **least** about teaching a distance education class?

Would you teach another distance education class?
If not why?

r Yes

r No

What would you suggest to improve distance education classes at Central Wyoming College?

What other distance education classes would you like to teach from Central Wyoming College?

Class	Delivery Method
_____	_____
_____	_____
_____	_____

***Thank you for your assistance! Please return the survey in the enclosed envelope to
Mountain Plains Distance Learning Partnership
Central Wyoming College
2660 Peck Avenue
Riverton, Wyoming 82501***

Appendix C
Focus Interview
Transcriptions

Central Wyoming College

**Billie Betcher
Fundamentals of Nursing/Pharmacology**

**Jane Rogalski
Nursing Fundamentals**

**Nancy Larson
Math & 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**

September 1998

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

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

Evaluator: What things can you tell us about that can help make an easier transition for the next faculty group?

FeDean: The things I liked were that we actually had the resources to do the project. We had the laptop. We had people like Darrin and Mike who knew the equipment we needed to connect to the LAN 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?

FeDean: 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?

FeDean: The laptops were. We have four of them for faculty use. We had Internet access by connecting to the LAN.

Dean: We have modems, too.

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

I really appreciated the support also 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 Darrin 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 Adam at the same time.

Evaluator: The online.

FeDean: Yes and its going to have Web support.

Evaluator: Are you creating the Web part of it?

FeDean: Darrin 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, the reading schedule, something I call the study guide which are all the terms that you have to know, the quiz's, all the lab reports that you need and weekly updates. I can put a weekly notice out. This is what you need to be doing. This

is where you should be because these are the quiz's 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 an e-mail system part of this?

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

Evaluator: Are you looking at something like that?

Dean: We are exploring a couple of options. Until that happens, 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: Do you feel that the students are going to be interacting with you through e-mail for most courses?

FeDean: We think so.

Dean: I hope so.

FeDean: 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 Adam. 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.

FeDean: We're looking forward to eventually getting a bulletin board Web type of access for each of the courses that we're doing. 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 type of a thing 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, CD, CD, CD. The idea is not one delivery method but you have a couple of different approaches all looking to be 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 at this point. 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.

FeDean: 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: 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. Darrin 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: Did you have the access that you needed?

FeDean: Yes, we have keys.

Nancy: For me without an adequate computer I never could have done what I needed to do and I appreciated Darrin 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 that you saw as standing above and beyond?

Nancy: Well, the CD-ROM 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: Do you use PhotoShop?

Nancy: That and Microsoft Image Composer. We would never have finished without the support. There were myself and three other people working sixty hours a week per person to pull it out.

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

FeDean: 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 pieces 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. Darrin 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: How is the video 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 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 another division beginning to do this would be to jointly develop the forms?

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

FeDean: 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 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.

FeDean: 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 Adam images. Of course Adam 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 stuff, not each division or school.

FeDean:

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?

FeDean: 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 you will have enrolled in this in two years.

Dean: We've had a lot of hits.

Jan: As of this morning - 104.

Dean: That's quite a few. I wish I had the program in my back pocket ready to go at this point and time.

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 are the current problems?

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

CWC Nursing Instructors

September, 1998

Vicki Ferris: 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 Burns: 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 Burns: 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 Burns: In January, 1999. It's all ready to go.

Vicki Ferris: 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 Burns: 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 Burns: 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. Darrin 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 Burns: 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 Burns: Yes and they were there to coach us so there was no problem.

Evaluator: What about you, Vicki?

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

Evaluator: Do you think it should be?

Lita Burns: 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, Saturdays and Sundays?

Vicki Ferris: 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 Burns: 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 PATA 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: Do you go to any other campus?

Vicki Ferris: 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 Burns: 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 Orric Springs, which is 130 miles away.

Vicki Ferris: She stays here during the week.

Lita Burns: 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 them?

Lita Burns: 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 Burns: The political arena in Wyoming right now for the community colleges is volatile at best. We 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 Ferris: 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 Burns: I think mostly the latter because Darrin 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 Burns: 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 any of the video being converted to QuickTime movies to put on the Internet?

Lita Burns: No.

Evaluator: What about with your class?

Vicki Ferris: 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 Ferris: Yes, we have been. What has really been nice is finally having a resource person like Darrin 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 Burns: 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/Vicki Yes.

Evaluator: How did you become a facilitator?

Vicki Ferris: 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 Burns: 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 Burns: 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 Ferris:

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 Burns:

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 Burns: 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 Burns: Yes.

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

Darrin Cheney: 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 ninety percent close on getting hers up and running but if there were something easier out there then I'd like to look at it.

Lita Burns: 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 virtual reality and haptic tools?

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

Lita Burns: 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.

Lita Burns: 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?

Vicki Ferris: 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.

Facilities Tour

Darrin Cheney, Instructional Technologist, Central Wyoming College
Tony Smith, Technology Trainer
Dr. Tom Pinelli, NASA Ed Tech/Distance Learning Officer
Ann Miller, Director of Adult Education, Southwest Corner Cooperative Services in Cortez, Colorado.

April 12, 1999

Darrin Cheney: We do everything with removable hard drives so that we can teach the Microsoft curriculum. The lab right here happens to be a Cisco lab. We offer the full NCSE curriculum here and we just started the Cisco training in January. What the Cisco training allows us to do is basically all of the other additional networking. We have partnership agreements set up with two of those, which is part of the grant. They are also written as partners in the grant. The courses that we run are typically eight weeks or shorter. That's one major component. This is Tony Smith, one of our main trainers. What's going on right now?

Tony Smith: Computer browsing. We can do the instruction here and also do the lab. We can reconfigure the lab in about fifteen minutes between courses. The students can walk in, take the classes and walk out with certification in hand. That's built into our core system. This is our Microsoft lab. We offer a two-year degree, which is what we encourage them to get because they walk out with an MCSE plus a degree. We also have a one-year

program that offers just a certificate. We encourage them to finish that degree. We have a company that has told us that if someone has their MCSE and a degree they will hire them on the spot. They'll take all we can give them. This is our Cisco training lab. Cisco is set up for networking plus we also use it for some other Microsoft courses.

Evaluator: Were the labs here before the STARS Grant?

Darrin Cheney: I think the Microsoft lab was. The agreement with Cisco came after. Microsoft is one of the college's major partners. We're doing this as well as some teacher training. If you come around here for a second, I'll show you what we have here. We can offer certification tests now, anything from Cisco, Novell, etc. We don't offer Novell here but we have a full blown testing facility, whether it be for our own students or other students that want to come in and pay for the tests to become certified. As part of our Microsoft courses the test is built into the course so your final for say, Essentials, is the test. You walk out with the certification. If they don't pass the test, they can retake the test at their cost, which quite a few students do.

The idea is that you actually walk out with the training and the paper in hand that says you are an MCSE or whatever you choose. All the testing is done here.

Our PBS station is right here. It is the only PBS station in Wyoming.

This is our instructional technology lab. Our philosophy is that we want to be able to provide the teachers with the training and educational experience to be successful. This lab is one of three that is set up for the partnership. Each area has one. You have one and Utah also has one. I'm the Instructional Technologist here. I work with folks here as well as the partnership doing curriculum development and integration of multimedia into the curriculum. Part of that is the lab that was funded to give us the tools to do that.

What I offer here is specialized training for teachers. I've done two trainings in the last two weeks. One was for a group from St. Stephens at one of our reservation schools. It was simple, basic, how to incorporate Office 97 into the classroom. It was to give them the skills to be able to use the tools to develop some things. I'm also doing some other teacher training. I can do everything and anything in here from basic Word all the way up to Authorware training and digital imaging. If you can think about it we do it.

We have a Web server for the project. We're also doing Web based courses such as Web design and a whole bunch of different things. If a faculty member says "I want to be able to do a course and I want it to be Web based" - great. I'm also trying to incorporate other delivery methods. A student might be 35 miles

away from campus. If they only see the instructor Monday, Wednesday and Friday from nine to ten and they have a question, how can they have it answered? What I first started off with was setting up discussion groups so they could ask questions and converse during the week. We're trying to use multimedia delivery.

We can do just Web. We can do Internet to video. We can do CD-ROM. The idea is to make this interactive and user friendly for the students and the teachers. If they want to shoot some video we can digitize that, put it on a Web site and do other things with it.

Tom Pinelli: Is there any reason to presume that public school teachers in K-12 in Wyoming are any more or less proficient in technology than they would be anywhere else in the United States?

Board Member: I'm from Cortez, Colorado. That's in the Four Corners area. We probably are behind just because we haven't had access to the Internet. Communication is a problem because of the mountains that surround us. Darrin comes down and does the training for us but compared to here we're really out of it. We don't have this kind of facility. We're just starting to build it up.

Tom Pinelli: In addition to buying the equipment, wiring the school, training the teachers, geography is also a huge problem.

Evaluator: Do you have a template that you ask them to follow?

Darrin Cheney: Yes and it's customized based upon each faculty member. We use the template and it gets tweaked depending on the topic. For example, some of the things we might do in nursing we are not going to do in political science but the fundamentals are the same. Once we have one set up then we follow through for the entire course. In her particular class, here's a class review, the things they go through, the text and other things that they discuss. Then there's a discussion group. She facilitates the discussion group. She posts the questions they are going to talk about. Then they go in and they post their input.

This is all Web based. There are advantages to this approach as opposed to say, Top Class. Top Class is from a company out of Devlin Island. The way that it is purchased is that you buy a license based upon how many concurrent users you want. Right now I think we have a 25-user package which means 25 people can be logged on at one time. We can increase it to 50, 100, 200, 300, 400. I can have as many accounts as I want on the system.

Evaluator: Are these at set times?

Darrin Cheney:

These are all asynchronous. You can do synchronous but most of our adult learners are in a situation where they just finished work, put the kids to bed, it's Sunday night and they are now ready to go to class. I have done both. My graduate research area is in distance learning, especially on-line learning and one of the things I found through research is asynchronous is the way to go.

The way the Top Class is set up, I enroll the students in the course. The Top Class system runs either on a Windows NT platform or it can run on our Windows 95 platform. It's real simple to install and to maintain. There are two parts. One part is the course creation. The other part is set up for the student taking the course. If I want to work at home in Colorado, on the beach with a wireless, I can actually design courses. Likewise, from the student's perspective, if they are on the road as long as they have access to the Internet they can take the classes. Top Class will actually go in and create the class announcements and the discussion lists automatically. It's part of the system. I don't have to do that separately. For this Fall we are working on an English 1010 course, Criminal Justice, Medical Terminology, Intro to SurgTech and we are also doing a Wellness course this way.

Tom Pinelli:

How difficult has it been for your teachers to make the transition from a traditional lecture type class to a distance learning environment?

Darrin Cheney:

We are at an advantage here especially with our College of Technology. The level of technical expertise is fairly high. Likewise, the openness to try different things is very high here compared to other schools. I was at a community college in Illinois. I was the Director of Distance Learning there and we set up interactive video. We set up book courses and they didn't want them. When I walked into this project they said give us all you've got and then we want more.

I sat down with the faculty, especially the Criminal Investigations instructor, and said here are the best methods for you to do the course and I ducked. He said okay. In fact I met with him last Friday and told him that to complete his project he needed to do this, this and this. Well, he came in with a packet of stuff this morning and said here's what you asked for. It was exactly what I asked for.

The design procedure is to go through and do a course map to make sure the course is set first. Then they know how they are going to teach it, how the course is broken down. I do a whole, part, whole process here. Whole, figure out how you do the whole course. Figure out how it integrates. Part, break it down into each individual week. This is different. You're not doing it day by day. You are probably doing a weekly format, all the things you need to cover for that week. Then you go back into whole. You can start putting the pieces together. I'm focusing

more on the curriculum side rather than let's teach how to do a p-tag. We let the other tools do that. Let them focus on what they can do best. It's working and it's working very, very well.

Ann Miller: It certainly follows adult education methods. That's what is so good about it. They learn it and then they apply it.

Tom Pinelli: I have several friends who are at the big schools. They do faculty development and they talk about the horror stories that they are involved in... a faculty person thinking beyond developing his or her home page, that's all we need to do. The rest of it is still going to be pretty much the way we have always done it.

Darrin Cheney: Yes, I've heard that one, too. I've been doing curriculum development for about fifteen years. Let me show you an example of what I consider doing it the right way.

Ann Miller: The teachers are also volunteers. They want to do this and volunteered for it. They went through an approval process, so there aren't any laggards. They're early adopters.

Darrin Cheney: This happens to be a Political Science course. The instructor wrote all the material. All I did was put together the graphics. He picked them. Eventually he's going to learn how to do all that stuff but I want him to focus more on the content. This

course is broken into three modules. Each module corresponds to the text. In fact, if you take a look at unit one, Top Class already has all the navigation tools built in plus mail plus everything else.

What he has done is the introduction to the course, the objectives and so forth. When you get to this level you'll notice that there is not a lot of images and things in there. Basically it's a guide. The interactive part is a discussion group. The material that you read happens to be other things.

Other resources in the course could be to watch a series of videotapes and now we are going to discuss it as you would in any other class. This is all built in. He wrote all that. It's done in Word, converted as a file and then Top Class converts everything for you. I've got that process working pretty well. I've got four instructors right now that are doing this.

There are a couple of other things, too, that we have done. One instructor, Nancy Larsen, is doing Anatomy and this semester she is doing Physiology via distance learning. She's teaching in three modes; live, live partial distance, entirely distance. Her project involved twelve different units. She uses the CD that can stand alone or it can be used in conjunction with teaching.

There are a couple of things that you need to know and this is what I tell the faculty. Do I have to attach the textbook to go with the project? No, but we need to know what materials and other things that you have used. Here are the parameters for her

project. She has a specific textbook that she is using. She's using Adam and she's using this. That's how all this fits together.

Evaluator: Adam - the CD?

Darrin Cheney: Yes

Tom Pinelli: A course like this sort of cries out for images, right?

Darrin Cheney: Oh, yes and then you have the fun that you have to deal with, too, as far as making sure that you get copyright permission and all those different issues. Copyright has mixed depending upon what organizations are willing to work with us. Some have actually said they would give us everything that they had as long as we put their Web address on the bottom. We've had some that have said yes you can use it for a thousand bucks a pop.

Here's the nervous system. This is all designed and developed in Authorware. Out of the eight units, here are the instructions so the students know how to use the unit, how to navigate on through, what the pages are that are set up.

I did the initial design and we worked together as far as putting the whole thing together. Here's the unit menu; here's everything from the overview of the unit all the way to the endocrine system. Let's pick out an autonomic nervous system. Here's the main objective for the unit. Here is the main objective

for the unit. Here is a pre-test. Students can go through and find out what they've actually done and what they've got.

Then I get into the material. It's all done via primarily bullets because it works in conjunction with your text and with Atom.

Evaluator: Are there auditory components to this?

Darrin Cheney: We did not put any of those components in, partly because we were also pushing the edge for multimedia delivery. It works wonderfully in here. You walk down to Nancy's lab computers which are running Pentium 133s with 16 mg of RAM and it won't even open. We had to upgrade her lab memory and her department picked up that. It'll open and it can be used. The auditory components were going to add another major part to it. This course was completed in a year in conjunction with about 30 other courses. It's there; however, other pieces could be built into it. It could be done.

Evaluator: Do most of the students have high tech computers. If they have computers that will take half an hour to bring up these graphics that could be a problem.

Darrin Cheney: What we do is we design for campus or for the lower end. For example, this will run on Pentium 133. These machines are

Pentium II 400s which will run about anything and everything. What we try to do is to keep that in mind. The other thing that I'm trying to do, especially on the Web based things, is use CDs. It's more cost effective for us to spend a buck on a CD and ship on the CD. I'm trying to be real cognizant of that. I've got some folks that really want to do videos over the Web.

Evaluator: Are you doing CD and Web based at the same time so it's just sitting there and they can do it?

Darrin Cheney: Yes, and we're working on doing a lot more.

Evaluator: Do the students check out the CD-ROM?

Darrin Cheney: The way that works is that the students get a packet when they register for the course. They get the CD-ROM in the packet. In order to get a final grade they have to return the CD plus they also sign an agreement. Keep in mind that when we try to get copyright approval it generally happens to be a window.

As we do more and more of these things we can spend a person full time and a lot of money to get copyright permission. That's why what we're trying to do is create some of our own and the partnership owns it. From the low end to the high end we can do a lot of different things.

I provide the resources, technical assistance and encouragement to get them going. The faculty does most of the work. This lab has two CD-ROM burners, one here and one in the little room so we can burn our own. I do customized training for teachers. My philosophy is don't give them generic stuff that they aren't going to remember but actually give them stuff that they are going to use.

Tom Pinelli: This is like just in time learning then.

Darrin Cheney: Yes. I had twenty folks from St. Stephens Reservation School here. One of the things that they created in a matter of four hours happens to be a Web site with some cool sites for educators. They designed the site and put the material in. They had to go out and find the stuff first. I gave them some of the sites so this was partly a Web search exercise, a Web development exercise and then they put it all together and they walked out with it.

Here's a cool one. This person had never developed a Web page before. She went through the morning session and then she did this in the afternoon session. She went out, did a Web search, found these sites and she did it on butterflies. She teaches elementary.

What I've found is that teachers know it's out there but they don't know how to use it and if they find it they don't know how to

implement it in the classroom. That's what we're here for and that's exactly what I'm doing with teachers right now.

The other thing that I found in talking with these twenty teachers is that they are scared and rightly so. My workshops in here happen to be a little wild and crazy. For example when I did the intro session on Excel I bought a couple of bags of Easter candy, preferably the little colored M & Ms. They had to do a color data analysis before they ate their data. They opened up each box and they counted how many of each color were in each box. It was fascinating to see them work because at one point we had the early childhood and the PE teacher as a team. They were adding them up and making averages and I said, no, let's let the tools do that. We taught them how to put together a spreadsheet and how to graph. The idea is that once they know how to do that they can show their students how to do it.

Tom Pinelli:

That's a real challenge, because for us at least, where we are doing enhancement, enrichment at best, NASA is not an official arm of the United States teaching corporation here. Some days it would be great if it was. We have all this content and a challenge process. Many of the middle school teachers are scared to death of math and science, then you throw the technology component in, and they're heading for the window. They're ready to jump.

Darrin Cheney:

That's part of what we're trying to focus on here. We can help you make that transition. I try to provide a fun place. We get them up to this level but there is always room to grow. Part of the reason we are doing the teacher training and I am doing it the way I am is that once they have the basic skills and we've got them excited then they are interested in doing curriculum projects. Then they want to do more. All and all the students are the ones who will benefit.

Ann Miller:

It was nice to see the evolution over a few days. When they first came in they were just a nervous wreck and scared. By the third day they were so excited to be in here and asking what are we going to do next. It was wonderful to see that.

STARS Partnership Board Meeting

April 12, 1999

Dr. Jo Anne McFarland: Most of you know Mohammed Waheed. He's our Associate

Director. Ann, would you introduce yourself?

AnnMiller: I'm Ann Miller. I'm Director of Adult Education for Southwest Corner Cooperative Services in Cortez, Colorado. We form the Colorado contingency of Montezuma and Dolores Counties. We're in the southwest part of the Colorado Four Corners area. If you want to see cowboy country, we equal Wyoming in cowboys.

Dr. McFarland: Our industry representative is Bruce Thorin. Would you like to briefly introduce yourself?

Bruce Thorin: I'm Bruce Thorin. My background has been in education and industry. I basically represent Microsoft as a representative on this council.

Dr. McFarland: Thank you. We also had a lot help from Bruce in his early years before he discovered that being an entrepreneur was somewhat more lucrative perhaps than working at a college but

we're so glad to have you with us. Mike McLaren is the public school representative.

Mike McLaren: I'm Superintendent of District 25, which services Riverton Schools. It is the largest school district in the county area. We are one of the nine largest school districts in the state of Wyoming.

Dr. McFarland: To my left is Roger Hicks. He is our public television representative. Of course we might have other folks that might know a little about public television here.

Roger Hicks: I'm Roger Hicks with the Wyoming Public Television. We are working with the Star Schools personnel. We're trying to provide cooperation and sharing functions as we develop this system and as the system is expanding. That's my part on the Board.

Dr. McFarland: Scott Ratliff is the official representative for the reservation and he is also an outreach counselor at the college.

Scott Ratliff: I'm those two things.

Dr. McFarland: And a lot more. Scott is retiring after 27 years at the college. He will be greatly missed and often called upon. Did you

know that? Beside myself, our final Board member is Margaret Weber. She is the VIA school representative on the Board.

Margaret Weber: I'm Margaret Weber and I am Superintendent of St. Stephens School on the reservation. We pride ourselves in aggressively pursuing best practices for teaching and learning.

Dr. McFarland: I think you are going to be taking a tour later and she understated greatly what is going on at St. Stephens. It is a truly and impressive array of staff and technology and creative curriculum. Of course, I'm Jo Anne McFarland, College President, chairing this group.

We have a number of resource people here. I first wanted to introduce Greg Ray who is the General Manager of Wyoming Public Television. He was really the technology guru who helped us put together our Star Schools project and graciously agreed to be it's first associate director moving us very successfully through that first year. You didn't know I was going to say this, and you would never say it, Greg received the Outstanding Community College Professional Award for the state. We're very, very pleased that other people recognize what we already knew.

Greg Ray: I don't know what I can say after that other than Public Television is in partnership with Star Schools. We're looking forward to moving the project forward and maximize its

functionality. I think it's truly a partnership in learning and we are very interested because Public Television has positioned itself over the years in terms of being very much interested in providing life long learning. We're interested in being a partner and providing life long learning to Wyoming people and also in partnering with Colorado and Montana.

Dr. McFarland: Thank you very much. To Greg's left is our Dean of Administrative Services, Jay Nielson. He has been here since July, going on ten years. Does it feel like it? Jay has been an enormous help to us. Would you like to add anything, Jay?

Jay Nielson: I just keep an eye on this group and it's activities. I try work with Sonja to make sure we get our reports clean and our numbers right.

Dr. McFarland: We also have down at that end folks I think you've met, Bruce Fiordalisi, our control room operator, director. What is your official title?

Bruce Fiordalisi: Control Center Supervisor.

Dr. McFarland: Ah that sounds better. That sounds good. Bruce has brought an enormous amount of talent and expertise to this project. Darrin Cheney, who our Vice-President describes as

getting close to a black belt in technology training and schmoozing with Microsoft types. Darrin's been doing a lot of our technology training for teachers and has made that instructional technology lab everything I wanted. I kept saying after all the equipment was installed, I want to see it used. I want to see it busy. I want to see teachers in there and they're there. Is there anything you would like to say?

Darrin Cheney: One of the things I noticed in working with teachers now is that they are getting excited. The pendulum is really starting to swing.

Dr. McFarland: Mike Nielson has been hands on in terms of establishing the electronic classrooms on site. I believe he'll be accompanying the group on tour and telling the team more about what's going on out there. Everybody knows Sonja. We have many exciting things on the agenda so we will start with the less exciting. The first is approval of minutes of the January 28, 1999 regular board meeting.

Dr. Waheed: I just have one correction. On page four, in the middle of the second paragraph, there are 41 proposals and it should be 38. The breakdown would be 15 for Wyoming, 12 for _____ and the rest would be the same.

Dr. McFarland: Thank you for those corrections. Next is the financial report.

Dr. Waheed: You'll notice that there is only one red line here. Overall we are within budget and proceeding at the proper rate of expenditures as expected.

Dr. McFarland: That's always good to hear. Thank you. We move to old business. We have our project update on the electronic classroom and curriculum from Mike Nielson and Darrin Cheney.

Mike Nielsen: We've been working like crazy to get the classroom put together and finished. We got the codecs up and running, all the microwave paths tested, working and functioning.

Dr. Waheed Mike is being modest. It has been quite a task to coordinate between vendors and the users and make sure all the supplies are there and all the connections are there and everything works.

Darrin Cheney: There was a lot of trying to get things to show up at the right place at the right time. That was a big problem for awhile.

Dr. McFarland: We have a couple of superintendents here who are on the other end. Did things proceed?

Margaret Puebla: They have and our teachers are very excited and they are most happy to be working with Darrin.

Mike Nielsen: Riverton is connected and everything is working. We're looking at some of the training opportunities that are coming up. There is a lot of demand. That's good. We're excited.

Dr. McFarland: Darrin, did you have more to add?

Darrin Cheney: The projects are going well. In fact we have already had a couple of projects that have been completed and turned in. One was from here in our area and one was from Utah. We have a couple of other projects from Wyoming that are very soon to be completed, in fact probably in the next two weeks. What we are trying to do, especially on the Web based courses, is to get everything completed 100 per cent in the can before the course is offered. That way the instructor can concentrate on the teaching part of it. Classes have been very, very well received. I had another eight folks that were interested in a class that started last Thursday night. Folks from Lander, Riverton, St. Stephens and Fort Washakie.

Likewise, this summer, to keep them excited and interested there is a flyer in the back of your packets about the summer institutes that I will be running. Bruce is going to help on

part of this thing. The whole idea of the institute project is to get eight teachers together for a week to do intensive training at their level. It can be as simple as turning on the computer or getting to know what an Internet browser is. They will come together and develop a simple project. Once they get excited and feel comfortable that way then they will be able to move off and develop their own projects. So far I have about eleven applications.

The idea with the application process is they have to write a letter that says why they are interested, what project they are going to complete and they have to have a letter of support from their principal so the principal knows what is going on. What I am trying to incorporate in these classes happen to be resource materials that are there. Microsoft has a lot of resources that we are using and they are free. I've made arrangements with them to be able to incorporate those materials into the classes.

Dr. McFarland: Are their questions for Mike or Darrin?

Scott Ratliff: As I look through this I did want to make a comment since Mike works out of our area. If you look through these pictures, one of the things I'd like you to imagine is a blank page. This page is filled with that equipment, the consoles, the installation, all the wiring, the stuffing of equipment and getting the equipment running which is a huge part of it. I just want to tell you that Mike

has had many a dark hour and early morning with that. I'd like to indicate that I've seen him working. I wanted to say that if you see something other than a blank page, I think we really need to credit Mike with that work.

Dr. McFarland: Excellent job.

Mike N: Don't forget Sonja, up in the attic.

Scott Ratliff: She's put on her blue jeans more than once.

Dr. McFarland: Okay, next is the Quarterly Report.

Dr. Waheed As the first part of my report I would like to ask Bruce to explain what he has been doing in technical operations. He has to run over and set up a meeting so maybe he can take five minutes and explain.

Bruce Fiordalisi: Briefly, we've gone over most of this already. We have been working since our last meeting in getting the classrooms up. Mike and I have been working long hours with our contractor-vendor and we will be showing you something that I think you'll be very proud of. We'll be demonstrating three interactive classrooms today. We'll be moving on to our next set of schools

this summer. We are going to do two demonstrations, one at 1:30 and another at 3:45.

Dr. Waheed That's because of the availability of classes there. Classes are going on and those are the free times.

Bruce Fiordalisi: One of the questions out there from an industry standpoint is that I have school districts that are asking me about connectivity into this project from a desktop scenario. H.320, 323 connectivity issues, but that is coming down the pike and I wanted to forewarn you on that. Right now Arapahoe school is already putting in desktop video conferencing ability using Intel, very similar to PictureTel, that type of scenario. I wanted to make sure that we are aware of that and set and ready to go.

Mike N.: I think what we're anticipating is once we see we have the users coming forward with their installations, it's a matter of us coming in. It's all ready to go. We're just waiting to see that we have the schools moving in that direction.

Roger: Bruce, the system is designed to basically accept any number of platforms and formats, whether it's 323 or 320 or whatever. Bruce is exactly right. It's just a matter of finding out exactly what connectivity it needs to be. It's very capable of interfacing with just about anybody.

Darrin Cheney: Is data and video going to be thrown across that microwave link?

Roger: Yes. Each of the schools currently has eight T1s. We're really only using three of those for video right now. All of the remainder is available. The idea originally was to be able to mix and match full motion video, compressed video, 323 or 320 video plus data. There is the bandwidth to do that.

Bruce T.: The reason I throw this out is, we are doing an installation right now at Arapahoe. The NASA thing is a prime example. Students in Australia talk to a teacher up in Worland and they are doing the CU See Me type of thing. I can see this whole project moving in that direction.

Dr. Waheed In addition to what Mike and Bruce have presented, if you will thumb through the quarterly report, on page five there is miscellaneous information provided. You will see that 128 teachers are involved this semester and that is not counting those in Darrin's workshops. If you will look through the next list, those are all of the training sessions that are planned this semester. We are conducting a survey of all the students who took part in the distance education program. We also plan to survey teachers and parents of those students, too. That is being planned this year.

By the time we meet next time we should have some information on that, how students taking distance education courses versus traditional classroom courses feel about one another, etc.

As Roger mentioned we have some photographs of work in progress at the different sites. We now have Riverton High School completely done, St. Stephens School completely done, Fort Washakie completely done, and at Lander the setup is complete but we are still working with hookup.

Bruce T.: I know you are way ahead of schedule as far as these sites are concerned. Where is Thermopolis as far as connectivity? Are they a year out, a year and a half?

Dr. Waheed We should have the signal reaching the Thermopolis High School building by the end of the summer. We plan to have it by July or August. Then they will have to have the electronics in the classroom to receive the signal. Our part will be done, getting the signal to them. The next in line are Shoshoni, Dubois, and Rendezons. They should be done along with Thermopolis this summer. That will leave only Jackson and that should be complete in the Fall.

Dr. McFarland: Thank you. We'll say goodbye to Jay as he moves to another meeting. We think we have a really robust system and probably the most important aspect will be what's over the system,

what's being taught. Any questions of Mohammed? Good. Well thank you very much for that quarterly report. Let's move to new business. We'll view the Star Schools video.

Bruce Fiordalisi: I should preface by saying that this video was specifically designed for filling a sampler video that was going to be distributed nationally and we had a specific three minute slot we had to fill. In justice to getting everybody involved in the video we opted for a promo demo form. Hopefully I think it represents us well.

Dr. McFarland: Thank you for your work on that.

Bruce Fiordalisi: I have to go to another meeting. I'll see you later. Please come by for the demonstration.

Dr. McFarland: The next item on the agenda has to do with the membership of the Executive Committee. Mohammed, could you just give us the background on how this issue came about?

Dr. Waheed: About two quarterly meetings back there was some discussion that we needed to add members to the Executive Committee. I'm just wondering if everyone still feels that way or are they pleased with the current membership panel.

Dr. McFarland: The very last sheet in your packet lets you know that the current Executive Committee members are Mike McLaren, Bruce Thorin, Scott Ratliff, and myself. Generally we would only deal with those issues that needed to be considered in between meetings and anything we do then would be approved by the Board at the next meeting.

Bruce T.: When this Executive Board was initially established I lived in Thermoupolis and I now live in Casper. If there is a need to reestablish that Executive Committee based upon geographical location, I'm more than willing to deal with that. That's fine and very acceptable.

Dr. McFarland: Actually I don't know if that was at all an issue.

Bruce T.: I'm just putting that on the table. I'd be more than willing to continue to participate and keep things going. If it's an issue let me know.

Dr. McFarland: How about you Scotty? What are your plans after retirement at the end of June?

Scott Ratliff: I'm willing to continue if everybody wants me to.

Dr. McFarland: Good. Are there any suggestions about the Executive Committee? We might name an alternate but actually I think we are probably okay.

Scott Ratliff: I think it's fine the way it is. The Executive Committee may go a whole year and never even meet. Probably the most critical time for the Executive Committee was during the first year when things come up with bids and contracts and so forth. I'd be very surprised if the Executive Committee has to meet very often. I think it's fine as it is.

Dr. McFarland: Okay. Of course, from time to time we have allowed Board members to participate by phone or through the system. We might as well use the Mountain Plains system for that, too. I would like Dr. Pinelli to share with us some thoughts about your program and what led to your trip here. I think many members of the Board are not aware of how your program works.

Dr. Tom Pinelli: Okay, great. Let me begin by thanking you all for having us. This has been a half of a day and I already feel like I'm making copious notes on things. This is good. This proves beyond a doubt that there is life outside of Washington in case any of you were wondering. We thank you for the opportunity to come out here. Without taking too much of your time, let me see if

I can lay in a little bit of background that might help you understand a little better what we are all about.

We are part of NASA, the National Aeronautics and Space Administration, which has been around since the early days of the space program or the beginnings of the Cold War with Sputnik and so forth. The part of NASA that we belong to actually goes back to about 1917; back when there was the national advisory committee on aeronautics.

NASA Langley is the oldest of the NASA centers. We were actually started in 1917. In fact the NACA had what was then nothing but research centers. We have one at Langley, which we refer to kindly as the Mother Center.

Two centers were added during the World War II period, NASA Ames and Moffit Field, California. NASA Lewis recently changed to the John Glenn Research Center at Lewis Field in Cleveland, Ohio. We are one of the science and technology agencies within the federal government. The Department of Defense and the Department of Energy are also looked upon.

Quite frequently when you hear the President of the Congress talk about what we are doing in math and science it is often in the context of math and science instruction or education which falls clearly into the purview of the U. S. Department of Education. We are not teachers. We are not instructors. We don't offer degrees. We don't do programming but the Congress and the President both look to the science and technology

agencies as content providers. In another words, that's where most of the knowledge comes from, either directly from these agencies or indirectly from the grants and contracts that we fund at university levels and so forth.

NASA has always had a strong science and technology mission. If you look at the National Aeronautics and Space Act of 1958 one of our responsibilities is to keep the nation premier. That's not exactly the right wording. Preeminent in the fields of science and technology which means, of course, that we have not only the charge of doing that in terms of our projects and our programs but also to make sure that we contribute to the creation of trained workforce in science and technology.

If you look back at the history going back to 1958 and the National Defense Education Act, you'll see that NASA had a large role in that in terms of funding at the undergraduate and graduate level, not only the creation of engineers and scientists but also in engineering science and technology education. Over the years we have come to realize that if you want more people in college you don't wait until they graduate from high school and say "have we got a college for you". If you want people who do better on national scores in math and science you don't wait until the 10th and 11th grade to start doing that.

We're finding out as probably most educators know that what we do in the elementary and middle schools pretty well determines what happens. This is true not only in terms of

science and technology education but also individuals wanting to explore and actually pursue careers in science and technology. I say that to point out to you that over the years NASA has taken on more of a definitive role in what we think of as education, that is math and science and technology education.

The realization is that more of that has to take place in elementary and middle schools to provide that foundation that is so critical for accomplishing those other things. If we say that certain groups are underrepresented in science and technology careers, the time to do that is in the elementary and middle schools, not when they get to college. If we look at national scores and see that certain groups do not score well on the tests in terms of proficiencies in math, the time to do that again is at that point not otherwise.

What NASA has done is to establish within the agency an office of education. At each of the NASA field centers there is also an office of education. What we have been struggling with, as have all agencies, is trying to pull all of this together in some fashion or form. We all have limited resources but to take the resources and content we have available to us and find the appropriate delivery mechanisms is the challenge. That's a struggle and if you have dabbled in politics you know that there are all kinds of issues, territory being just one of them. The way that NASA is approaching or trying to pull together, each center

will take not only a certain geographic responsibility but also a certain component responsibility.

Our responsibility is distance learning. We make a distinction between distance learning and distance education. Also technology integration. Distance Learning, to us, literally means curriculum enrichment and enhancement. If you ask us what distance education is, we would say that is precisely what you all do. You offer course work. You offer either individual courses or a collection of courses leading to degrees that require certification and the like. What we do with distance learning is to try to work with people such as yourselves who are in the business of doing that. We try to take the NASA content that we have available in figuring out some way that we can offer that as content enrichment.

Looking at things such as linkages between the classroom and the world of work and the like. Our responsibility is for distance learning and technology integration. We have several programs that we are offering. I guess getting down to what we are talking about today is NASA connect which is our middle school-upper elementary, grades four through eight, integrated math and science program.

One of the drivers in all of this is innovation technology and partnership. That is precisely the realization that we have come to. You can't do it alone even if you had all of the money and the time to do that. There is no one way. There is no one singular

way that all of this is going to be accomplished. We're looking for alliances and partnerships as a way of accomplishing our mission. We're also looking for people that have a proven track record of doing precisely what we are doing.

Why should we be taking our precious resources and reinventing the wheel, making our own networks, trying to go out and collect and identify and otherwise when there are people already doing that? Our objective here today, once we found out about Star Schools and Mountain Plains is looking for ways that we can create partnerships to accomplish the objectives that we are trying to do.

It's sort of two parts of what we are trying to do. Number one, if this gets to the PBS element of what we're talking today, NASA connect is our middle school integrated math and science program that is absolutely, totally free. What we are trying to do is establish a number of relationships with the various PBS stations across the country to make NASA connect generally available to the public. In addition to that, what we are trying to do with the under served and the underrepresented groups, is to take that a step further and see there is a partnership that can be developed with Mountain Plains to reach various of the underrepresented groups such as native Americans.

We're also talking to the TEAMS people in Los Angeles with Don Lake's group as a way of trying to get to the urban core, especially in Los Angeles, and trying to reach the urban African

American and Hispanic populations as well. Those are the two things that we are trying to do. So far we have this year about 26,000 teachers and 1.8 million students who are registered for NASA connect. That's fundamentally east of the Rockies.

Our objective for the 1999-2000 series is to make the great western push and go the rest of the way. We're looking for more PBS partners but also the special partnerships like the kind that you offer here to try to make certain that we have purposely sought out and have made our programming available through partnerships to groups like Native Americans and the like.

I'll tell you a little bit about what we are trying to do for our 1999-2000 series. We're going to be offering seven programs. What we did in trying to develop the programs and what the structure is going to be was to go back to the TIMMS report. We went back to that booklet that you all may have seen, what every sixth grader should know. It's an amazing sort of correlation there between what they should know, at least in the math and science areas, to what the TIMMS report said. Also, we brought in a focus group of middle school math and science teachers and it's amazing. The teachers know what these students are not getting. Believe it or not, the national surveys and studies pretty well support that, so our programs this year are going to have what we call a fundamental math look and feel to them.

There will be seven shows and we'll cover the things that the students aren't doing well on in the test. For example,

measurement, portionality, ratios, basic geometry and basic algebra. Typically when you teach science, you teach science and you sprinkle a little math on top of it. We're beginning with math and we're going to apply the math via science. We're beginning with what the teachers tell us the problem is with the math to which we will add a heavy dose of science to make it applied math and science. Then we will add NASA research to it to dramatize how all of this comes together in the world of work.

Teachers tell us that they have two problems. One, students who always ask the question why do I have to know this and name one human in the world that ever uses this stuff. Two, we want to try to put it in a world of work context so that we get to issues of learning and teaching styles. There are other ways of approaching it rather than just one.

Teachers tell us that their textbooks are so limited in terms of how they are able to present some of these things. The word problems or the geometry issues are so classic in nature that many students have a real problem with that. When you add to the mix that so many students now come from different cultural backgrounds it makes it even more difficult to establish that. \

What we tried to do this year with the seven programs is to try to offer not only teachers but also students a very rich mix that they can now take this program forth as program enrichment. It is not a substitute for anything that their teacher does. It's based on the national math and science standards.

This year we are adding to that the information literacy standards and we are also trying to add the national technology standards to it as well. Within this 30 minute program what we hope to do is up the ante by adding a strong technology piece to it. We have an opportunity there to not only have the teacher be more involved in the learning but also for the students to take a more direct role in learning by using the technology. They can either do that as part of their class or they can do it from their home. Many of you know the statistic to be true that more students have access to computers and the Internet from home than they do in the classroom, which I find fascinating. I know that number is changing.

The point is that not only can they do that from home but we also have an opportunity for parents to get involved in the technology as well. We can also bring in the informal aspects of the education community like libraries, science centers and museums as well. You probably have questions and I didn't want to take up too much time.

Dr. McFarland:

I'm awfully glad that we have some public school folks here, too. When you were talking about real life application and enriching course work I became very excited. I do think there is a very good partnership there. One of the courses that I was thinking of was Roger Miller's. Could you describe that just a bit?

Male: Greg worked on that project.

Greg Ray: What we tried to do is to develop a series of programs that integrated basically with the entire K-12 curriculum. We developed a problem set that was related to real world problems. Try to relate something that is theoretical such as mathematics to everyday real life problems. You might take students out to show them power line people talking about how they had to use mathematics to calculate what gauge of wire to string between poles and how close to put the poles because it made a big difference in terms of whether the lines would stand up to the ice and snow of the winter.

It also made a difference in terms of the economics of the lines. You could take them to a coal mine and say here's how we try to figure out the profitability of mining this seam. We're trying to calculate how much ore we need to take out of here to make a certain amount of profit. You take real world problems and show them on site. Show them someone who's using mathematics to solve every day, real world problems.

In this case we're using Wyoming examples so that the students can relate to them. Their parents or aunts or uncles or someone they know is probably related to one of the things they are talking about. Then we developed a set of workbooks, which are being designed and will be implemented as part of this program. They have kind of a sliding scale of difficulty in terms of

the kinds of lab problems that would be instituted. There would be a lab workbook that goes along with the video series.

In the case of trying to determine how far apart you are going to put power poles maybe at the grade school level they would build a model and measure how much string would sag dry and wet. It might be something that simple. At the high school level they might be doing vector analysis, trying to actually calculate predicted sag based on so much ice on the line or so many birds on the line or whatever it might be. The advantage of this idea, as we see it, is that you can literally take it from K through 12 and the lab problem set just gets more complicated as you go up the scale but the concept of trying to apply something theoretical as something concrete remains the same. That idea remains the same regardless of whom you're pitching it to. Whether it's someone in the middle school or the high school the fact remains that mathematics is very much a part of our everyday lives. It's trying to show students that it's an important part of everyday life and to try to make it concrete rather than abstract.

Dr. McFarland:

The wonderful thing is that an outstanding math professor is working on the project. He is wonderfully inventive and effective from developmental math on up to higher math. I think we have been fortunate in having some of our very best faculty working on these projects. Here's what I was interested in. Let's say that we

have a series such as Greg described. What kinds of enrichment materials might you be able to provide?

Dr. Pinelli: I would think that NASA Connect, which literally is being developed as enrichment or course enhancement, could be offered as an adjunct to that. It's not our business to teach math but for those that are teaching math or learning math this might be something that could be used. For example, what we would do is show real engineers and scientists with the NASA, depending upon what discipline they are in, what they are faced with. What are the issues that they are faced with in measuring the things that they do? If you're an astronomer how you measure something is very different from an atmospheric scientist. This would give the teacher a tool bag that he or she can use that has different applications, real world applications. Also there would be opportunities for students to sort of step out of the box and think differently. You could actually take a satellite and you can look into that cloud and you can measure stuff in there? How is that possible as opposed to catching a fish and taking a tape measure and measuring the length of it?

Dr. McFarland: I'd like to hear from our public school educators.

Mike: Currently we have middle school students doing something like developing Web sites for retailers downtown and working with

our Chamber of Commerce. Our middle schools actually do a restaurant project where they put on a meal. They do all the forecasting for the meal. They factor in all of the mathematics requirements. Then they have to interview for all the positions; everything from Maitre'd to waitperson to kitchen. It's about a one to two week project.

One of our science teachers at the middle school took a picture of a nuclear submarine with a clothesline. At surface it was stretched taught but all of a sudden when it goes down to about seven or eight hundred feet below the surface she shows another picture where the line has sagged three or four inches. The question is why does that happen? What they have to understand is that the pressure is so great that it actually shrinks the size of the boat. They don't think about that. They just think it's atmospheric pressure or humidity or something like that.

Those are the types of things that our students can plug into and there is usually a complement or supplement for existing math or science instruction. This is true particularly if we also have technology education. I see some of those things fitting very nicely with this. How would our school tap into your program?

Dr. Pinelli:

NASA Connect is satellite broadcast via a satellite uplink out of WHRL in Norfolk, Virginia. It would be pulled down by satellite either by another PBS station or by a school district or by a school that actually has a steerable dish. In addition to that

each program is Web cast on the learning technologies channel out of NASA Ames so there's two ways to get it directly. Of course you can always get it as a video after the fact. Those are the two ways of offering that now. I should mention that we did a number of focus group interviews. One of the things that we learned is that students want to see students do it. I, a student sees a student do it, not only is it cool but it's okay.

As you know, anything that they do with adults you get into the issue of "you can do it when you're old enough" or "you can do it when I tell you". There are limitations on what students can actually do. Each NASA Connect program features a middle school performing what we call the classroom activity. We have the students talking to the students about the activity.

To kind of up the ante a little bit on the education side, as you know many middle school teachers are not comfortable with math and science, we feature both the math and the science teachers together. It does become integrated math and science because we feature them doing that. Then the students come on and they explain what the classroom activity is and how it is actually done. Then they challenge the students in what we call the challenge point where they actually have a series of questions that are based on the activity or the experiment as done by the students. The students then challenge the viewing students to answer the following questions based on the data that is collected. This year we are going to up the ante a little bit more.

One of the problems that the TIMMS report points out is that students get little or no classroom experience in what we call visualizing data, reading graphs, plots, charts and so forth. The teacher package that comes along with each of these seven programs this year will have as part of the activity either a graph or plot of the data and the students will then have to go through and answer a separate set of questions based on the data which has been plotted or graphed. What we have been trying to do is get at as many of the sort of fundamental issues or problems with math as the experts say there are.

In addition to that, there is a strong interactive Web component. For example, the last show of our season is April 22nd called Quieting the Skies. It deals with noise using the airplane as a metaphor for noise. The objective is to make airplanes as quiet as automobiles. In that case there are three Web based activities that go along with that.

There is the NASA sound quiz where they actually go on the Web and they are given a series of questions. They are given three answers only one of which is correct. If they choose a wrong answer they are told why it is wrong. If they choose the correct answer they are also told why it is correct. They also have something called a Sound Machine where they can go in there and see everything from the human ear to the whole aspect of what noise and sound happen to be and what are some of the definitions and terminology that go with that.

Finally, with all of our programs there is something called Career Corner. There are anywhere from six to eight people who are involved in some way professionally with noise. You could be a NASA researcher doing acoustical research to someone who works in a sound stage or sound studio or something of that nature.

They are given a series of questions and they can click on and get the text as well as the audio. They answer questions such as “What does math and science have to do with what I do?” or “How did they get turned on to their career?” It also has such things as “Who influenced me?” and “Where would I look for information if I was interested in this career?” We are trying to pull it together to try to instill in students the idea that this is the time to start thinking about careers and you need to open yourself up to different ideas and different ways of thinking about things. We try to do all that in a 30-minute program.

I would encourage you to visit our Web site to get more information on that. The program is absolutely free. There is no copyright. You are welcome to copy the video or the print material to make whatever use you want of it. The off air rights are granted in perpetuity. Anything we can do in terms of what you are already doing to make this available to teachers and students we will be more than happy to do.

Evaluator: Is there any interaction between the students and the students?

Dr. Pinelli: Yes, this past year we have been doing a number of eye chats. We're not really pleased with the way that is done. I think we are going to step back this year and just offer e-mail. We have eight researchers that are working with us on this session. This year's April show will be the last of the live shows. We have been doing live shows for the past two years and we just can't do that anymore for a number of reasons.

One of the critical reasons is that we have such a small window for students to either call in on a 1-800 number or e-mail. If we can get six answered during the period we have accomplished great things and we have frustrated the other twenty who can't get in. Rather than turn anybody off, this was one of the most compelling reasons to go to a pre-produced show and just pick up on the technology as best we can.

For the future, to pursue the idea of interaction, what we would like to do is to actually set up data packets on a server that students in Wyoming or Boston could pick up. We would actually try to work some collaborative projects that way using test data or something of that nature where I have the missing piece and you have a missing piece and you have to put them together. That way we could sort of step out of the way and then let teacher to

teacher and student to student kind of take that and do whatever they want to with it.

Dr. McFarland: I can tell the science projects are going to improve tremendously. Tom, you referred to standards, information literacy standards?

Dr. Pinelli: Yes, the National Association of Librarians has put forth the literacy standards. There are three categories. In addition to the national math and science standards we're bringing in the information literacy standards and the national technology standards as well. Those four standards will be added to our programs.

Roger: You had mentioned what I assume is printed materials. Is that something that is done each year as new programs come out?

Dr. Pinelli: Yes for each program. If you went to our Web site now and you registered for Quieting the Skies you would fill out a simple registration form and that would allow you to download the print materials.

Roger: Okay, it is up to the individual organization using your materials to reproduce those and send them out.

Dr. Pinelli: Yes.

Roger: Is that the same with schedules and things of that nature that they would use in the classroom or even send home?

Dr. Pinelli: Yes. Not everybody has Internet access so we still have to register people by phone, by fax, by e-mail or we also have a brochure that we send out. We developed that either in conjunction at the state level or the district levels where they can clip out the coupon and send it back to us. It's a self-mailer. The idea is that the individual teacher should incur little or no cost in doing that. I should mention too that each classroom activity is done as cheaply as it possibly can. We try to find paper towel rolls, stuff around the house or anything that you can use to do this without having to spend other than buying maybe glue or a stapler or something of that nature. We try to stay away from the idea that you have to have a certain polyvinyl resin or something like that.

Margaret Puebla: I'm sure happy to hear you talk about school to work, school to career. It's been a difficult concept to get across to teachers that it is a program. It's not an added thing to the curriculum but a strategy. We have really expanded our efforts in that area. The students work with a lot of environmental quality

and they do a lot of experimenting and observation and data keeping in that area. Also they will be using indigenous plants. One group at the school is going to be working with community volunteers. They will be keeping track of the data. It's all a part of the math and science instruction.

Dr. Pinelli: With the use of the technology that is out there I think we simply have to find better ways to take advantage of that. For me as a program manager my main concern is that every student in the United States, regardless of where he or she lives, has a certain amount of shall we say equity of access. If you are in the rural part of Wyoming or the innermost part of Brooklyn you should have more or less the same chance to access NASA resources. What you do with it, that's up to you. That's where partnerships and alliances and the use of the technology is going to make sure that at least the notion of equal access is taken care of.

Dr. McFarland What do you see as our next step? Where do we go from here?

Dr. Pinelli: My sense of it would be that we would look at a simple one page memorandum of understanding between the NASA Langley Research Center and the Mountain Plains Distance Learning Partnership. We would spell out the mutually advantageous kinds

of things that we would like to do where we would draw on the strengths of both parties. We could look at it initially as working together to provide NASA connect across the board to all students in the four states as well as the Native American population for example. We could explore other possibilities. I could see, for example, just based on what I've seen here in terms of what you are doing in the technology arena that we might explore other possibilities such as looking to the kinds of things we think we might want to do someday with technology versus the sorts of things you have already demonstrated. We could explore more possibilities for moving to more of a technology based delivery system for a NASA based content. We might involve some of your faculty people in our summer people as well as your graduate and undergraduate students.

Dr. McFarland: I think it would be a wonderful opportunity.

Dr. Pinelli: We also have something called the IPA. It's the Intergovernmental Personnel Act. It's a federal law that actually allows agencies and municipalities to literally borrow and loan people. We've started using it and it is fairly painless and easy to do. It allows us to have someone from a university or any public or nonprofit institution to spend three weeks to a year. The receiver pays the freight if you will. We would be very interested

in how you are approaching the technology and what you are using it for.

Evaluator: Is there a model? You mentioned how you work with the centers and universities and colleges that are close to those. What about them developing a model where you are working with someone who is at a great distance from the center?

Rafaela: For universities it's very easy to do because we don't have territories or areas that we are divided on. Distance learning is something that we do. That's why we are able to do this as well. When it comes to pre-college that's very divided. Langley is only responsible for five states and we are not able to go to other states because then we get into another one of the centers' territories. If it has a distance learning component or university sites then we don't have any divisions. We can go anywhere in the states. If it's strictly pre-college then you need to look at which area it is in. All of the centers have the same programs with the exception of distance learning because Langley is the lead center for that.

Dr. McFarland: Is everyone comfortable with initiating a Memorandum of Understanding? This is something that would come back to us for formal approval. This might be something the Executive Committee would be working on.

Dr. Pinelli: They are typically one page and they are very open ended.

Dr. McFarland: We might even have a draft by the time you leave.

Dr. Pinelli: That would be good.

Rafaela Schwan: If any of your faculty who have some knowledge of computers or are in the computer science area might want to check with the program manager for the faculty program. We were looking for an individual with some computer background. We have a project that has been given to us by the Vice-President. They have a committee of eleven government agencies that are trying to make everything that we do accessible to the public as quickly as possible. The Langley point of contact was looking for a faculty member to help them work on that during the summer. Before I left we were still looking for that individual.

Dr. McFarland That sounds like a wonderful opportunity. I have a motion and a second. Is there any further discussion about initiating the Memorandum of Understanding? All in favor? Wonderful. Do we have any other business to discuss?

Evaluator: The evaluation is ongoing and we will be looking at some ways to take some of the students that have gone through several

courses now and begin to really look at those. We will look at the learning impact. Sonja has set up a number of meetings for me while I'm here. Again this year the bulk of evaluation will be qualitative. We don't have figures yet. By next year I would expect that everything that will be more heavily quantitative.

Scott Ratliff

Riverton ESCS Coordinator, Outreach Counselor

Central Wyoming College

4/12/99

Evaluator: What are some of things that are going on with the development of the materials that are addressing Native American populations?

Scott Ratliff: I think it's starting at the infant stage. As I was listening today, one of the problems that I see, and it happens at every juncture... Here's NASA saying we've got these great things, but they aren't recognizing the different styles that goes on with the Indians. They are not saying, how do we make these things pertinent to these areas. My sense is that they will have these great experiments. The experiments can happen but if there was anything that would draw the native student and make them feel that that is something that is attainable. I'm not talking about a career, I'm talking about a learning experience. It just doesn't happen. It's been a frustration of mine for a lifetime. I spent some time with Darrin as a result of Star Schools, we need to incorporate where the curriculum is pertinent to the native culture.

I don't sense that it's a reluctance on the college's standpoint. I think it's more of... how do we accomplish that?

If I could show this example, I think it's the best example I can think of. We wanted people to use technology and so we hired somebody who understood technology and has spent countless hours teaching people how to use technology at their level. And they are using it. We haven't gone that far with the native end of things. I'm not suggesting that we go hire a native expert to sit here because I don't think there is one person that would meet all of those things.

I do think that wherever we develop a course, there ought to be at whoever is doing that person's fingertips, the type of expertise they need for that course, i.e. if we're developing a nursing class, why do we not go and say, Scott or whoever we want to use, find us, within some kind of logic, a reason somebody can tell us how a native may view this particular course. Or what are some hints that we could put into this course that would allow our students to better understand the cultural or spiritual differences that they might encounter?

What I would do is go and talk to one or two of the nurses that I know of that are Indians and say, do you have any things that ought to be taught at this course level? It is going to take some energy. Somebody is going to have to say, it is so important that we provide these faculty with this type of information. It is unfair, in my opinion, to expect somebody that is a nurse instructor

to go find this information. They don't have the time or energy. They would not develop these courses using technology if they did not have the expertise that they are familiar to. It has to be right there.

I would bet you that he has to hand walk many of them through a bunch of stuff so that they could put in the data that is important to that course. We need to put more importance on the native relevance because there is a passel of people, and I mean no disrespect to Darrin, that are doing things with technology. There is not a passel of people doing things with the native. And it is something that is being craved.

NASA is more interested in this project, truth be known, because it has a native component than because it has a technological component. I think this year we've come farther than I can remember. We have said, point out what you are going to do. I have had a difficult time, I think, getting people to recognize when somebody applies to redo curriculum and we say, what are you going to do? That's like asking me, if I'm developing curriculum, what kinds of technology I'm going to use? I don't know. I have got to ask the expert what kind of technology I need to use.

The same thing is true in their end is what I think we need to do. I've shared this with Mohammed and I think that he has moved closer to where I think it needs to be. I believe that as everything is agreed upon, we're going to re-write this curriculum

that somebody needs to be brought in and said, here is the curriculum that we are re-writing. How do we make sure how pertinent is the native slant? That's going to take energy.

Evaluator: Are there structures being put into place that you feel meet the needs?

Scott Ratliff: I think structures have been put into place... It could happen, it should happen. The questions have been asked but I don't think in a token fashion. I think that Mohammed has absolutely agreed that that needs to happen. He's run a step further and said, "Yes we will pull people together in the next cycle and say, this is how we ought to advance." From that standpoint, we' went a long way.

I don't mean to sound skeptical, I just have to say, the proof will be in the Fall when we start funding projects. I don't totally understand how the budget is determined, but if there isn't some money set aside to pay some consultants... That's a magic pie in the sky kind of thing. I don't think we're talking about big amounts of money. You're probably looking at about \$100 or \$150 to have somebody come in and work. But if there isn't some money that is there for the native consultant, then I would question whether or not it can happen.

Evaluator: Is the budget being put together for this coming year?

Scott Ratliff: Probably not until late Summer.

Evaluator: From your standpoint, going back and retrofitting is the solution? It sounds like there have been things that have been developed and the things you want to see are not there.

Scott Ratliff: I think it would almost be a waste of money just because I am of the belief that the faculty will use things if they have been a part of developing it. I think that the way that Darrin is approaching it is the better way of going, moving forward from this day forward. If they went back and inserted something, we may want to make that offer available. Anybody who has done this, if you want to come back and insert three lectures or whatever, then a second negotiation can go on. I think that what I am more excited about is having the ones in the future moving forward.

I have met Darrin with absolute support. When Lynn was here the last meeting he said, "The area that we are weakest in is that Star Schools is not meeting their needs is in the elementary level." It wasn't like we just talked about it. Darrin went to work and he and I met immediately and put together these courses and it's the elementary people that we are focusing on. I have a lot of faith that those kinds of things are happening and it's only been this year that we brought this idea forward. As a result, it is on the application. I think it's been dialogued between Darrin and I and

certainly Mohammed and I. It isn't that I don't think that the institution there, it's just that I don't know why it won't happen.

The way that it will work is that all these applications come in and then there will be a pre-beginning workshop. At that point, Mohammed and Darrin will sit down and talk about the kinds of expectations that they have. One of those expectations will be an absolute part of it is, how are you going to make this curriculum pertinent where pertinent ought to be as it would pertain to natives.

Darrin Cheney:

As we go through, in particular, the priority areas of the proposals that come in, that will be one of the top priorities. The other strategy that I want to explore too, is giving some of the training to the teachers, whether we can get them excited and give them some of the basic skills as far as the technology goes, the more interested they are going to be on the curriculum design skills. In fact, I've got a couple of folks who are interested. They can hopefully step forward and want to develop some projects.

Evaluator:

Are those Native Americans...

Darrin Cheney:

Yes. Once that happens... this is all an education process for both groups. Once those folks come forward, that will also be an added benefit. Then, they can become resources for other faculty.

Scott Ratliff: What we have seen happen, when Lynn said, we really need to put energy into elementary, Darrin went to work on how do we help the elementary? So as I was visiting with Ann today and she concerned about Matt and natives. We had done a workshop at the college during inservices, you brought in a native gentlemen who did some learning styles. It was really apparent that we have different styles as human beings. The typical learning style is not the typical native way of learning.

Evaluator: What's the typical native learning style?

Scott Ratliff: There is a couple of ways... I think story telling is a good way of learning. Some hand-on is a good way of learning. But what I was thinking, and it wasn't just my thinking it was Ann's also, I think what has driven a lot of our programs is somebody out there is interested in developing some curriculum, this is a chance for you to do it.

I think we need to be a little bit more proactive in the way we were in the elementary ed. I think we need to say, not about all things, areas that we really are concerned about like math... maybe what we need to do is a little brainstorming and say we'd like to put together a team of people for a short period of time to develop some math components that are native in nature. Maybe we bring together some method or an actual workshop of three or

four days not so different than what they did with the St. Stevens people. Let's do some brainstorming. Let's invent something that might work. Maybe we solicit that from fifth grade math teachers throughout the entire project. Any of you out there who are interested in helping develop some excellent ways of teaching Indian math students, come together.

I don't know who that might be. I think that is more proactive. I think it would be a good way of approaching it. To me it would be similar to what you have done with the elementary. Before I did something like that, I would visit with somebody like Princess Kilabrew who is excellent. "Princess, if you were going to bring people together, where would you start? Is it kindergarten, is it third grade, seventh grade? Where do you see some differences in the way that native students would learn and maybe we bring this team of people together just to develop something."

Darrin Cheney: We will meet the goals. Once they come to the surface, I think those become challenges and opportunities. I'll get together with the others and we can kind of brainstorm as to what is a good timing to be at. It would almost be really fun summer camp.

Scott Ratliff: That's the type of thing that we ought to look at, maybe holding in the neutral spot until we brought in the Colorado people and the Utah people who are dealing with natives. I think what we develop is very important. I think we ought to sit down Darrin, and

put down an idea and see where it goes. If there is the interest,
let's do it. If there isn't, we'll approach it from somewhere else.

Central Wyoming College

Pauletta Augustine Curricula Specialist/Associate Professor of Reading & English, CWC

Peggy Forbis, Adult Basic Education Coordinator, CWC

Ann Miller, Director, Adult Education, Star Schools Partner, Cortez, CO

Darrin Cheney, Instructional Technologist, Mountain Plains

Sonja Matthews, Secretary and Graphics Technician, Mountain Plains

April 1999

Star Schools ABE Project

Pauletta: I'm Pauletta Augustine. I'm the Curricula Specialist and Associate Professor of Reading and English at Central Wyoming College. I'm a reading specialist.

Peggy: My name is Peggy Forbis and I'm the adult basic education coordinator here at Central Wyoming College.

Darrin Cheney: Darrin Cheney, instructional technologist for Mountain Plains.

Sonja Matthews: Sonja Matthews, Secretary Graphics Technician for Mountain Plains.

Ann Avery : Ann Miller, director of adult education Star Schools partner,

Cortez, CO.

Evaluator: What have all you been doing?

Female: This project is to develop a combined Social Studies and Reading project for adult basic education for students preparing for the GED. The reason for the partnership is that Peggy is the ABE GED director and I'm the reading specialist. We work well together. There is a need to have materials available in the outline areas to work on the Social Studies component of the GED test. While we're doing that, Peggy and I both come from a philosophy that one should always be doing reading through the contest areas. So we didn't want to miss that opportunity. We'll include a reading component.

What we have done to this point is put in a proposal and it has been accepted. We've been gathering information, we've worked on format, and we know exactly what we're going to do but we have put nothing together yet. Nor did we intend to until school is out. We will be beginning that probably in the beginning of May.

Because this is ABE GED, this will be modules that can just stand alone so we will do a CD and web based delivery is the intent at this point. In fact, a student can work on it under the direction of an instructor or actually wherever they can access the information. We'll have it interactive and it could be done entirely as a stand alone for the student. The GED test addresses the

Social Science areas. It addresses map reading, chart reading, behavioral sciences, geography, history, economics, political science. Those will be the components of each module that we are going to do. The topic around which this will be centered will be "Peoples of the Rocky Mountain West".

We decided that rather than taking a chronological approach or a geographical approach, that we would take a people approach. That way we can work in everything and we thought it would be more interesting to us and the students. For instance, our different topics around which we will do one module, which will be broken into different lessons will be, the Native American Population, The Explorers, probably The Travelers, The Settlers, The Railroaders, The Mormons, and we want to bring in the people who have something to do with the national parks because of all of the ecological ramifications. That's it in a nutshell.

Female:

The reason that I thought this would be a really good project is because a lot of times Social Studies is kind of hit and miss. The reading is the big component, the math is a big component, and the language skills. So we don't, a lot of times, get enough social studies. I thought this would be a really great way for the students to learn how to use a computer, how to use the internet, as well as we're going to put in graphs and charts which are things that they will find on the GED test. Which each

lesson, we will have a component of those. Hopefully, this will be a really fun way that the students can independently do a little work on the social studies while we're working so hard on those other three areas.

Evaluator: There will be several modules?

Female: Ten total.

Evaluator: Tell me what the other nine are going to look like.

Female: These are the different modules. The topic is Peoples of the Rocky Mountain West. It's just that rather than approaching in chronologically, we're breaking it down into those topics.

We're approaching in topically, not chronologically. Some of them may not lend themselves to chronology. That's not always the most interesting way to approach something. We think considering the audience for this particular project, that it's important to keep it so that it's interesting.

Evaluator: Could you describe the ABE audience?

Female: These are students who are trying to get their GED. There's a wide range of ability levels within this group. Probably, this may be a little bit difficult for our low end group that is coming

in at the second, third, fourth grade level. But I would think that even by the fifth grade level that they should be able to do this and enjoy it.

Evaluator: What are they to begin with? Is it a language? Is it culture?
What is their other language?

Female: The audiences... Native Americans takes up about a third of our population. We have a site now on the reservation. We have quite a few Native Americans at both Riverton and Lander Center. Our Spanish population is probably about fifteen percent – they are ESL students for the most part, but some are working on their GED.

Evaluator: That's 45 percent. What are the rest?

Female: English. High school drop-outs, people who didn't finish high school.

Evaluator: What is the range in age groups?

Female: We have everything from about 16 to 60. I think this year our oldest student is probably 60 but the average age of the group that we work with is probably about 24 or 25. The younger ones will have had some experience with computers. They will be the

recent drop-outs. For the older students, the computer is a new and scary thing. We're hoping to bridge that gap for them.

Evaluator: What is it that you have been using and how will it contrast with this new material?

Female: What we normally do in our adult basic education classes, is we work on reading. Sometimes for some students that will end with them working on social studies materials. We find that for the majority of our students, we don't do a very good job in exposing them to social studies because we are so busy working on just the reading comprehension. You can do that across the subject areas. Social studies is one area that we sort of slight.

 Actually, the GED test, although there is a science, a social studies, and a reading test, those three separate tests, there are really all reading comprehension tests. The subject doesn't matter as much but I still feel that our students, especially older students, may not have had any information on these topics. But that will be beneficial as well as just preparing them for the GED test.

Evaluator: Is this the new GED test?

Female: It won't be out yet. The new GED test was supposed to be out in the year 2000, but, I imagine it will be another year or two beyond that before we see it. They are running behind.

Evaluator: Do you think that any of these people have ever been exposed to anything in distance learning besides a computer?

Female: Very few. Only the youngest students, if they had anything in high school, I'm not really sure what they had. I know the older ones won't.

Female: I would have to think probably not. It would be very rare.

Female: We would have loved to have had this just on the Internet. We realize that most of our students don't have computers. The next best thing would to have them come in to a center and have an instructor there. Any way that will help them begin this process, using the computer and the internet.

Female: They do have centers. They have the outline centers with computers. We have about five or six places that this will be available.

Evaluator: Tell me something about why you all wanted to do this. What was the process that you went through and where are you now in the administration of it?

Female: I was told I should be thinking about what we could offer. I actually looked up a couple of different formats. One that we would have liked to have done is an interactive classroom. But the population that we serve, at least at this point, I did not feel that I could count on having them show up at a regular time, even at the outlying areas. It seemed to me that this would be a better use of our time and effort at least to begin with, that no matter when they show up at the center that we're going to be able to utilize this information.

Female: We came up with lots of good ideas which we thought would be a lot of fun to develop. I know Peggy has wanted for a long time to have some way of having for instance, math classes where she could offer to several people at once rather than teaching everybody individually. But our population is spread over a wide geographic area and so sparse that when you start looking at resources, it's not a very good use of resources to try and do that. When it came right down to it, we thought this was the only way we would be able to deliver the product to a significant number of people in a meaningful way.

Female: Probably what we will do, is highly encourage all the ABE students that when they come and talk about what they need that this be a component that they work on. They can do it as fast or as slowly as it takes. I can say some students really don't need a

lot. They are kind of just passing through. We'll try to catch as many of those as we can. For the students that have to be there on regular basis or for a long term basis, I think this will be a great program.

Female: I have a lot of experience in developmental education so many of these students then move on to college and into developmental. My experience is in regard to use of the computer. Many students have not succeeded in school in the past really take to the computer. I have this little theory that I made up about that. I believe it's because it's something new and so they have not experienced failure. Usually, if we get them on it and have them doing something that's enjoyable, realistic, and meaningful, then you do get a lot of engagement and interaction. I really think that for a population where you are concerned with re-mediation, that quite often the addition of some sort of computer assisted instruction or computer based instruction is quiet beneficial and effective because of the fact that it's a way to offer a means of education where they have not failed and they can experience success. That, I think, tends to be motivating.

You're nodding. Have you had that experience?

Female: Yes, I think so. They're going to, with our encouragement, feel that they can succeed. Whereas, every place else they have had how ever many years they stayed in school, it was a put-

down. It's brand new. If you start with a really simple success module, where they can get used to the function of the computer and everything and learn a little bit at the same time. And then with time, switch it over to an area with more content with not as much emphasis on the computer. I think this is excellent.

Female: I'm speaking from the developmental classes, I'm just sure that it's true. No research behind that. It's just my opinion.

Female: You know how nice it is to have some control. I think that's true for anybody; to have some control over what you are leaning or doing.

Female: With this kind of education, it's anytime anywhere education. Because, with their inconsistency and attendance, you have to have something like a module that you will have a library of modules. That's the most efficient use of technology for them. It's a completely different ballpark for them.

Female: We're excited. We came across, already, some really fun links that we'll put in there so that will, again, give them further experience on using the internet. I think in a really kind of safe way, they don't feel intimidated because it's just going to be right there. I think from that they will actually be able to, if they wanted

to, to go ahead and go on the internet and do a little surfing and find some additional information that they will be interested in.

Female: If this goes well, my next thought is to do something in science. Which I feel is the next weak area that we don't get a chance to cover. Let's try this and see what happens next.

Evaluator: Have you begun to work on it?

Female: We've met with Darrin just twice. First, to talk conceptually, and second, just to gel some things. Then, Peggy and I have met probably another three times to talk about topics, sources, and few of the nuts and bolts, and then more of the format. Our proposal was that it will be done this Summer. We knew that we would not have time until school was out. We are ahead of where we have to be at this moment. We'll work seriously on it come May and June. So, it will be ready for Fall.

Evaluator: You're going to be here all Summer doing this?

Darrin Cheney: Summer projects. They have the whole part figured out. We haven't decided which way we want to go yet, but, my idea at the moment is to set it up as a stand-alone lab, then incorporate the testing into it. That way it can be burned onto a CD and then do a true stand-alone. Once we have the framework set up for this

one, we will be able to duplicate that for our science, math, or whatever.

Female: I think it will be really good. We'll have questions at the end of each section and we'll try to stick to a format that's similar to the GED social studies test. So it kind of gets them in the mode for that. Although, we may also do some essay just for some writing and better comprehension. I think that will help. When they see that same format again I think they will feel comfortable.

Female: Two things, one thing that Darrin was talking about, just the standard Web approach. With this project, there is no reason to have it protected in terms of, correct me if I'm wrong, there's no reason to keep people out of it, because it's not a for-credit class of any sort. Freedom of access should not be an issue.

Darrin Cheney: One of the things that we might do is to go ahead where they have to fill out a quick registration so we know who gets access into the course. That will help you...

Female: We really think that the test bank is important because as you know, part of succeeding on a test is being familiar with the format. Besides giving them opportunity to learn content and practice reading, we think that it's very beneficial to just have them experience questions that will be similar to the format they will

experience on the GED. In that respect, we will model that part of the project after the GED question. They won't, obviously, be the same but they will be the same type.

Evaluator: Will there be an authentic assessment?

Female: There will be some actual maps in that kind of respect. That will be very authentic. Peggy has found some good sources with some very good graphics.

What were you talking about this morning?

Peggy: They were showing the particular wagon and then it went into detail and told all the different parts and showed how they packed there stuff in there. The size of it, you know giving the actual dimensions. I though those kinds of things would be interesting and kind of fun. They won't necessarily be things that we quiz them over, but hopefully they will get into the habit of trying some of the links.

Female: But I think it terms of authenticity of assessment, I think charts showing real facts and real figures not just made up things, we have every intent that the map work would be authentic. There's no reason to make up fake maps to teach. So, that would all be realistic.

Female: I'm thinking the topics would be of interest to anyone, but they will be of special interest to our students because they are going to be involving, not only Wyoming, but a little bit of the surrounding states too. It should be familiar territory to them and hopefully that will be fun for them.

Female: Peggy and I both taught on the reservation for several years and when we started talking about this, we we're both aware of the bilingual and cultural monies that have gone out there for development. There has been a lot of resources developed and I know when I was working out there I was very aware of where to go and get them. Scott Ratcliff may still have a handle on that because there are some good resources out there that were developed with federal money and are, in theory, available.

Female: We have talked about doing the original Native American population that was here, but also doing another component on the present day Native Americans and the reservations both or the benefit of the Native American people who may or may not know all the different facts. For the rest of our students who are in class with the Native American students, to help give them a little bit of background and maybe fill in a little bit that they didn't know.

Bruce Fiordalisi, Control Center Supervisor

Darrin Cheney, Instructional Technologist

Central Wyoming College

4/12/99

Bruce Fiordalisi: Full distance monitoring here. We can see everything that is going on at the schools. We do have a security function where by if they do not want to partake in a conference. We cannot connect to them. But the pipe is in place but we have a security function so if the conference takes two to tango, you have to both mutually push a button on both ends and then you are linked together.

We will have connectivity. We will have a connection point here to get on to that network. Some limited video production capabilities here in the other room. Duplication, we do simultaneous conferences. We will have downlink capabilities and if all goes well, we'll have uplink capabilities.

Our major tools are the Pentium computer with a Pentium 450 in here, digital document camera which we use for our blackboards and overheads, annotation directly onto text books, printed devices and anything you want to put under the camera. I'll show you that briefly. We can zoom in, go negative, white on

black... Everything you see goes directly out. We have VHS we use for programming. Here we have dual large projectors for digital cameras. The auto-track function works well. We have a sensor in the front and a sensor in the back. The design of this system is really not to have control room operation. The instructor can come in here, know that his classes are already scheduled, pre-connected to his distance classrooms, and go.

We're really trying to minimize the amount of labor that goes into this. I want you all to come up here and see the screens. You will be able to touch the screens and make things happen. It's become very intuitive. We're always upgrading the screens. We're looking at how the instructors are using them in terms of their movement. There were times when we first started the system that this screen was sitting over here. We're always looking at the ergonomics of teaching in terms of focus. What I'm interested in is that they stay focused on their students. There were times when we were putting screens in different areas and teachers were turning their backs to their students. We're always trying to keep that up front. That's an important part of our design.

Here's an example of our physiology class. We use to bring the microscope in here and tie it into the document camera and feed it in live. But we found, through a little investigation, our generator over there has a great frame grabbing capability. So now, we're taking a lot of our instructors who have media in other

formats bring them into the control room, digitizing their media, and now we've integrated that into their PowerPoint presentation.

Darrin Cheney: We're anticipating being able to do some high end imaging whether it's from NASA or whatever. We want to be able to feed that over our network.

This room is a lot more like the classroom for the high school science that your are going to see. There's a camera for the instructor and a camera for the students. Each classroom here has computers. The network is also set up so that we have extra bandwidth. If we want to be able to feed information between school to school or share school to school we can do that. We are not, however, providing them Internet access. That's not part of this project. If you want to set up a Web site or materials as a repository then you are running at a full T-1 site to site. That's pretty quick.

Bruce Fiordalisi: We're feeling real good now because we have now gotten through our first phase of getting three of our four schools up on line. We have communications two way, audio and video, and our daily communications. We'll be doing a demonstration this afternoon to show you that.

Evaluator: Have the classes started yet?

Bruce Fiordalisi: No, not yet. So what we are seeing over here on 131 where Darrin took you is our classroom A. It is essentially 22-25 students. We're continuing to remodel 131. We're going to make it identical to the schools system so that we can bring teachers in here and do training as well as go out there on site to train. Right now we have full remote, parallel remote communications with both rooms. If an instructor needs assistance we can control it from here. Likewise, for classroom B which is 129, we have four cameras in there, a doc camera, VCR and a computer. Depending on our relationship with the instructor and how familiar she is we can assist them, totally take control of the room or we can totally give them control.

Evaluator: Are they asking you to take control?

Bruce Fiordalisi: Right now it's assisted because we haven't started the process with the four high schools. When we start going out to the high schools it will be essential that the instructor do more. We will have much more capabilities in terms of interactivity between the students in the classroom, in terms of how he or she responds with the students in the far sites and also bringing those students into the classroom. That's an integral part of the distance learning process.

Evaluator: Do you think the teachers will be doing more at that time?

Bruce Fiordalisi:

I most definitely do. I'm going to very much encourage that. We've made the panels extremely intuitive. In terms of interactivity you will see it's essentially a two-button process. We have a pinnacle character generator that has graphing capabilities. When we first started Nancy was holding this microscope down and plugging it in all the time. I said let's get rid of that so now what we are doing is we are converting all the stuff into electronic medium. Now she can concentrate on her Power Point presentation and not have to worry about all these different devices. Essentially the three items they use are obviously the computer, a VCR and the document. We keep the focus on these three items and not get distracted although we can plug other things in.

The St. Stephens teachers just came for teacher training with Darrin and they all showed up with laptops. We built into the console auxiliary computers. When I give my presentation I just plug in my laptop, punch it up and it comes right up on the screen. We're trying to make it as friendly as possible.

There's also a file format that we are starting to experiment with in terms of giving interactivity to the instructors for being able to zoom on these images and maintain perfect resolution. There's a file format called Flash Picks that was developed by Hewlett Packard and Kodak. We are now developing those. The only problem we have is these are limited and are pretty much

designed to be video based for instructional type of development. The way we designed the system is so that it is essentially a one step process. We're going to marry our operators to the instructors. They show up, the course is done and the entire process is done in the actual running time. We aren't going to be doing any post dubbing. Right now he is totally set up. There will be a class in here 11:30 to 12:30. He'll load his machines up for dubs because there are five dubs that need to go out for this class and the entire process is done.

Evaluator: Where do the dubs go now?

Bruce Fiordalisi: We're putting two in the library. Outreach centers are getting them. This is not a CWC centered type of system. We can put one high school with six other high schools and the process will be totally done. We're the brain and the nerve center.

The way the system will work is that we get our conferencing and scheduling and traffic system on-line and they will be able to go in and set up their own conference. Right now I set up a conference in this room with three schools. That's what I will be demonstrating at 1:00. We'll be doing the same thing for the high schools.

Don: Students from high school A could then be collaborating
with students from high school B?

Bruce Fiordalisi: Yes. When we are totally built out with all three counties we will be able to go 160 miles over to Jackson. The first four schools we concentrated on are proximate. Now we will be going over the mountains.

Evaluator: When do the other states begin to participate?

Bruce Fiordalisi: That process will be occurring, specifically with Utah and Colorado, this summer. We're doing a microwave connect between Colorado and Utah.

Evaluator: What about Montana?

Bruce Fiordalisi: I don't know about Montana yet. I don't think they are in on year two. I think they are year three. In the next 30 days we will also have our downlink. Of course we will have H.320 connectivity, too.

Don: Is this a totally land based system?

Bruce Fiordalisi: It's totally digital microwave, satellite down. There are plans for us to look at bringing an uplink in here. Right now there is a quite a shift in uplink technology and we're going to wait a little

bit and see what happens. The PBS station is to go digital in 2002. This PBS station is very remote.

Don: Is this under the auspices of Star Schools?

Bruce Fiordalisi: Yes.

The interesting thing is that the most two-way interactive experiences the teachers have are to compressed video systems. I think that for many instructors it's a turnoff. Now for the first time we are demonstrating to our instructors full bandwidth, full 30 frames a second, beautiful looking video. They play videotape and it comes through great. They have total interactivity and all of a sudden the inhibitions they had about distance learning are thrown out the window.

Bruce Fiordalisi: The fun part now for Darrin and I is that now we have "let's go play". There is a privacy feature as part of the security system that is built in. They can decide that they want to disconnect and I cannot override it. All they have to do is go to local and I will not get a picture here. I'll know they are on-line. When they want to come back, we are going to have a system that will be tied to our PBX. All of our schools will be on a four-digit exchange.

Central Wyoming College

Star Schools / Foundations of Learning

4/13/99

Kris Greany, Wellness Instructor

Darrin Cheney, Instructional Technologist

Jeff Hosking, Criminal Justice Instructor

Jody Reade, Psychology Instructor

Pauletta Augustine, Curriculum Developer

Kris Greany: Our intent today was to share some of the product that has been completed and enjoy that. I don't know if you and Darin have in mind that they're doing more for you. Everybody came with something to do, so from our prospective, we're ready to just go into what we were going to do.

Jeff Hosking: The overview is, in simple terms, divided up into 20 units and 15-week divisions. Although we have 20 units which correspond with the 20 chapters involved in the textbook, some chapter are going to be covered twice in certain weeks. It's designed for each student to log on or to have the new material, the instructors to post new material, quizzes, assignments, reading assignments, etc, etc, at the beginning of each to be completed by the end of each week. Very similar to a regular old class with some technology to replace or substitute for the

instructor/ student interaction, such as randomized tests, interactive components, and things of that nature. That's the overview.

Presentation begins.

It's divided up into three modules, again corresponding roughly to those subject matter areas that most logically fit together. Under each module will be roughly seven units, which correspond to the chapters in the book. As you see, on the left, how I divided up each of the units is that way: Introduction, Objectives, Assignment, and Chapter Notes. This is the only time you will see Summary because I designed it for the first unit and decided it was redundant and so I took it out.

The discussion group questions will be posted each week and then a model is going to be made available to the instructor. It's not going to be made available to the students obviously. So that if there are other instructors besides myself that teach it, they will have at least a model answer by which to grade and judge the discussion questions.

Darrin Cheney:

One of the other things, since it's the first unit to get everybody up and going, that Jeff and I have talked about besides reading chapter one and participating in the discussion group for the questions for that chapter, there's also going to be an ice-breaking, get to know each other, discussion group kind of thing. As far as the student training, I'll take care of that. I'll design that

part of it so the students will have access to the training materials and such. But as far as each individual course, just as you do in your regular class, you're going to want to go ahead and facilitate that, however way you typically handle your first day of class.

Jeff Hosking: You'll notice we have module one two, and three. We'll probably add a folder here, which will be about the course. In fact, we've done that with the other courses we've got going. That's a convenient spot to put the syllabus; information about the instructor or any additional information that you want.

Darrin Cheney: Are you going to need a password to protect it from the discussions?

Jeff Hosking: They don't need to be because you cannot get into this course unless number one, you have an account on the system, number two, you're given rights and permission to get into the system, number three, Jeff has given rights and permissions to get in.

Darrin Cheney: If I understand what you are saying, Jody, are we going to have to let every other students see the discussion question?

Jody Reade: No, not necessarily because I would have mentioned you want everyone to see the discussion question.

Jeff Hosking: I'm actually wrestling with that issue to be quite frank with you because I am giving grades for discussion questions and to that extent I think there are some privacy issues that need to be addressed. I think we can get around it but I haven't quite figured it out. If I want to have a discussion with me and then potentially off to the side open up a discussion question. That's what we're talking about. In one respect, I feel about the same way about the discussion question as I feel about letting them see quizzes. You can't do that. I sort of feel the same way about discussion questions. On the other hand, there's some merit to allowing interaction between the class.

Jody Reade: So if I were the student, I'm only going to interact with you, I'm not going to interact with the other students.

Jeff Hosking: Well, I don't know. That's one option. One option is to just interact with me. The other is to set up some sort of chat line.

Jody Reade: They don't have to post to other people's postings?

Jeff Hosking: That's what I haven't decided. That's the issue. Do we just post to me or do we post to everybody. I haven't made that decision yet.

Evaluator: You might consider doing both and work through it yourself. The adult education methods that are usually employed in courses rely on students interacting with each other. It takes a lot of time to interact with all students. They actually learn a lot if they interact with one another, as well as the instructor.

Jeff Hosking: That's a good point. We've talked about something along those lines and one of the things we've talked about is the separate folder idea. For instance, Discussion, which I have access to, and then announcements, which allows me to post under my announcements. That vehicle is already there. To post under announcements and say okay, here is the issue, this is open. I also want them to know there is an avenue by which they can get to me that won't be reviewed by anybody else. We'll probably do a combination. This program is capable of handling it, it's just a matter of deciding what's the best way to do it.

Jody Reade: I'll be really interested to hear what you have to say a year from now about the handling the discussions. I was thinking about all the work it would mean for you if you had to be the only person listening to the student's discussion.

Screen example

Jeff Hosking: That must be chapter one. They all follow the same way. The navigation is quite easy and we have a separate folder to get into the quiz, which is nice. Because then you don't actually have to get into the quiz because the quizzes aren't going to be timed once they are open.

Darrin Cheney: That is working very well. Right now we're doing Vicki's tests. We sat down at the beginning of the semester and everything is timed out.

Jeff Hosking: This is one of the things that I really like about Top Class. Most things are limitations but this is one that is an enhancement. We have a 40-bank test question bank for quizzes but each student will be taking just ten questions. The computer automatically randomizes them and grades them. No student takes the same quiz. I like that for a number of reasons. The obvious one is that because, in effect, they are going to be open book, in many ways you prevent collaborative testing. The questions will be the same, the tests themselves will be different.

Evaluator: How long are giving them for the questions?

Jeff Hosking: I don't know. I was thinking one to two minutes per question.

Darrin Cheney: We can time the questions so that when you start the test, you get so much time. The way Top Class works is that when you interact with the server, you have a certain time limit. For example, if I'm just going up and down clicking the radio buttons, that's not interacting with the server. That's one of the things the students need to know, how much time you have to test.

Screen demonstration

Darrin Cheney: What's going to happen, and I know you all know this, is that because you can't do all the test reviews that we all do with our live classes, wrong answers are referred to... why you missed the answer and where the correct answer comes from. Students are able to review and see what they did wrong. Feedback is immediate. Instead of an instructor giving it to them, the text is given to them. But, that's a pretty good substitute, I think.

Darrin Cheney: If you take a look, we are now logged in as Jeff. Remember that a Top Class class includes an instructor, students, and course material. All of his students will come here. This is where he comes to check his stuff...

Darrin Cheney: You will notice that the graphics are only used to introduce the chapter or the module. This is up to you as instructors but

when you get down to that content level, if a graphic is going to make a difference in your course, you want to put them in. But, for the most part, leave them black and white. So that when they get to that part it's easy to read, it's quick, and you can get on to other parts of the course.

With your question too, Jody, we looked at the design that is driving these courses, each model is going to be different. Jeff is doing the text, other courses might be using other readings and such. For example, in Vicki's course that she's teaching right now, her discussion groups are driving the course; the discussion groups that she is facilitating and then the journal clubs that she's having her students facilitate.

The other thing that we have done with this is that through the first year, we're going to make notes. That's one of the things that Jeff and I have talked about. He will have an extra book to make notes in so we can make changes for the following year. Then there is an assessment piece built in for assessing the course, not the instructor, but how the course is going for the students.

Jeff Hosking:

It doesn't quite correspond to the end of the modules because the modules have tests and I thought that was enough so it doesn't quite correspond but basically a third of the course gives us some built in assessment tools for the students to evaluate. This is not a course that can be a discussion group. I think the

discussion group is important but it just can't be. It's too great of an area. That was by design. That was my choice.

Darrin Cheney: I've got to give Jeff some kudos, here. Jeff has done a tremendous amount of work as you all have. All I did was help with the design part and the graphics. Jeff did all content. The format that we have been using has been working very well; it's working very well. He had everything typed up on disk, we came in and in probably about an hour, had everything up except for the graphics.

Darrin Cheney: Did you compose in Word? When you said you had everything typed on disk, did you actually compose it?

Jeff Hosking: Word - then we translated it to the assistance and then brought that in. I had a couple places I was able to do that so that worked out well to.

Evaluator: Are all your quiz questions original questions?

Jeff Hosking: No, they're text-based questions because we are built around the text.

Darrin Cheney: Do you want to talk about your discussion with your bookm representative?

Jeff Hosking: I can. I kind of feel like I've already taken too much time. I called the rep last week and just said this is what we've got planned. I assume it's not a problem. We're going to be using your textbook in a traditional way but I want to make sure there wasn't any problem. And there wasn't.

Evaluator: Were you concerned about the copyright issues?

Jeff Hosking: I think "concern" is too strong of a word. Their textbook is not... The material that I have added is, of course, based on the textbook but it is in the nature of a lecture. Their textbook is going to be used in a traditional way as far as I am concerned. I didn't anticipate any problems, which is one of reasons why we did all this work prior to checking that. Darrin suggested that, again in an over-abundance of caution, that we check; and I did. I anticipate no problems what so ever.

Their books and materials could be used in either this project or other projects along these lines.

Darrin Cheney: Call me paranoid but we went through the same process last year with some nursing courses and they told us, no.

Jeff Hosking: Do you want to roll through the graphics? Do you want to show them the graphics?

Screen presentation

Jeff Hosking: Part of the reason I wanted to do this too is, again I know you all know this but, it never ceases to amaze me the ease of navigation.

Darrin Cheney: What Jeff did on this is that he went through and picked the graphics and I converted them. It took me not that long.

Jeff Hosking: That's the way we think of it because we had ones where the copyright was not an issue.

Changing instructors on the computer.

Kris Greany: Well, I knew that Jeff would be showing the Top Class so rather than be redundant, I did just an overview of what I am doing and what will do in a Power Point presentation. What I did is just a short Power Point presentation to summarize what is being done. Because part of my project does have a lecture with audio component, I thought I would experiment a little with this in the earlier stages. So we can listen to the audio or you can listen to me and watch my body language at the same time.

That's one thing I really noticed is missing in audio lectures, you don't get that. One of the big differences that I would

point out between this course and the course that Jeff is doing is this is a very personal course that students take, hopefully for their own benefit and to fulfill their requirements. My pattern is to present the information and then there are a lot of personal applications. They do a lot of self-evaluation and learning as it applies to them versus how it would apply to their career.

Kris' presentation.

Kris Greany: I set it up so the sound wouldn't go automatically so if we had questions, we wouldn't have to stop the computer.

Female: So your textbook has some other good resources?

Kris Greany: Yes, at the end of each chapter they list the Web sites but there are actually web sites for the text book that have additional information, current topics, and then lots and lots of links. At least the first generation links are very reliable. Certainly a student could go out further and get into some questionable information, but at least they would start with some solid information.

Female: Have you done the video? Are you going to need some help?

Kris Greany:

I have not done them. The thought was to keep it really simple and just take a portable camera. I have two subjects who are going to help out. Originally, I was thinking that I would be the one demonstrating. It's really hard to be talking and doing things and you can't move your own body very easily so I'm going to have another person there.

The idea is to not have a long drawn out clip, just have a very condensed clip so that they can see what's being done. Sometimes it's hard to look at a picture in the book and realize what the person is doing.

This was a really fun area to be thinking about because there is so much information available about nutrition and health that if the students each collect information about a different exercise device, or they go out and get information about different health products or something and post that, that way they can be share information and really expand their base of knowledge without the instructor jamming it down their throats. I really like that aspect of it.

It's hard because I think I taught very quickly and the quickness carries energy and when you try to slow it down... I think a person taking via distance would definitely have the opportunity and may be a little bit more motivated to explore a lot more options and probably interact with a greater variety of people than students on campus do. That's what I would expect.

End of Kris' presentation.

Jody Reade:

Traditionally, the students have been education majors, they typically take it in their sophomore year. Through the last two years, the class has been more split. I'm drawing in about one-third psychology majors in addition to the education majors. It's a class where there is a lot of discussion in the classroom and a lot of group activities. I have been looking for activities that could go online and accomplish the same thing.

By this time, we would have had you design your own IQ test and what comes out of that activity is everybody has a negative IQ. It's a real leveler for the honor students who are hysterical. One of the things they learn is that you can have a negative IQ and on a bell curve still be above or below the median.

Then we talk about placing children in special education based strictly on IQ score and why that doesn't work. We talk about the fact that you can have a low IQ and be high in creativity or be low creativity and high IQ or have both.

Jody passes out a mock test. This is just a test to look at the creativity component of intelligence as if we were going to place you in some sort of special education. One of the things I have to get through to students in special education is also gifted and talented programs.

Darrin Cheney, Instructional Technologist

Central Wyoming College

8/12/98

Darrin Cheney: There is a PowerPoint slide show for every lecture. One of the things that I require, at least on the media, is that the shows are consistent for each one. There's a different look and feel for each topic and that's okay. This particular course will lend itself well to distance learning especially where the students watch a lot of videos. The presentations can also be video taped so it can be packaged real easy. The Mountain Plains logo goes on each. As long as it is consistent for each presentation that's okay.

 Some of them are totally different. I've had some instructors that have had different backgrounds and transitions in the same show. It confuses the students. What we are trying to do, especially with our teachers, is to come up with video friendly backgrounds, which are totally different than standard templates that you pop out.

Evaluator: Do you mean things such as not using red backgrounds?

Darrin Cheney: Yes. Some of the main templates that come from Power Point will not work off of a computer scan converter.

Evaluator: Let me see the introduction.

Darrin Cheney: You can see that there is some consistency here in his design.

Evaluator: Who would be using this in his class? Would a student ever just be using this?

Darrin Cheney: I think it would probably be used in conjunction with videotape. It's a package deal. It's not meant to stand alone. Some of the other materials that we are designing are meant to stand alone. A lot of people think that's okay... I'll just do some Power Point for my project. What they find out is that it's not just that. It's the curriculum that goes with it. It's a complete package. You can't do one without the other.

Evaluator: It's not just one teacher's class. Other teachers can offer it. Correct?

Darrin Cheney: Right, in fact when I talked with folks when I first met with them and I explained that to them, some folks were kind of concerned about that. If I'm going to pay to develop a course somebody else can have that course. When you design the course and you sign that contract Mountain Plains owns it.

Mountain Plains can say what they want to do with it. That's one of the issues that we have had to deal with. That also sidesteps the copyright issue as far as what happens if we take a course and market it. If Mountain Plains decides to do it, they own the copyright.

Evaluator: Does this instructor commit tests to the media?

Darrin Cheney: No, he uses a paper and pencil test. There is another issue that has come up. They want to know if they have to submit all their tests. I've said no. What I need is a sample so I can get a feel for how you are going to test. For Jeff's particular course his entire test bank will be on CD. It differs from instructor to instructor.

Darrin Cheney: This Web site is from Colorado. This is one that Joy Sanders Cline has put together from there. She's funded to do another project this year. You can go through each part of the site and go into other links. As far as a Native American component, this one is specifically done on Native Americans. One of the interesting pieces is that I got a piece of e-mail forwarded to me, which is also in the quarterly report. Some folks on the East Coast were doing a search and they found this and they were able to use it as part of a report for school. This site is very well

designed. Here is one to take a look at from our home site. All of our partner web sites are on here as well.

Here are some of the courses such as the Mental Health course which Vicky was talking about today. I showed you a little bit about that yesterday. The way this is set up, as a discussion board is that you have an initial setup of two frames. One is instruction and one is content. This is upgraded every time you apply to something. Jolene Brown is facilitating the discussion. She puts up the response and then everybody responds to her. Since this happens to be a Web form and run off a CDI script all of the web pages are stored to Dynamically Created. When the course is over with I will be able to down load from the Web site onto CD. Then we can go back and if we want to do any analysis we can. The class review is just a straight html page that is put up. I've taught Vicky how to go ahead and edit those things. She has rights and permissions and access to the server to do that. She also knows that if she makes a mistake we back things up but not as often as she should. The discussion group is set up the same. Again it is a Web page.

Evaluator: Are you backing up every day now?

Darrin Cheney: I'm backing up once a week. Depending upon what we have going on it might be more than that. Some other things that we've got cooking are Medical Terminology. This is the old

Medical Terminology site and I left it on just as an example. This is set up with what we did last semester, all off the Web. This semester it's all in Top Class. It depends on what their preference is.

Evaluator: Why did you switch it?

Darrin Cheney: Testing was the number one reason. The testing is easily done in Top Class. I was using CGI scripting for the tests originally.

Evaluator: Did it take long to convert?

Darrin Cheney: The old way I did the Webbing thing and everything in writer. Once you put in the information, it goes in, writes it and gives you a score. There were two problems with that. Number one is that it did not give a score back to the students saying how many they did. I went ahead and I created exams that were done entirely from a Web form. I got it set up so you could go through the questions and if you got eight out of ten right it says that you got 80 percent right. Well, the students didn't like to calculate their own grades. They didn't like to keep track of it and they wanted to know what questions they missed and why so Vicky was getting daily calls from the quiz or test. We put it into Top Class and it automatically gives that information.

Here's the evaluation area. This is what has already been delivered. Notice that there is a separate number here. This way you get all of the students on and off campus. They are all compiled. Right now this is just roster data so we know how many students we have in each course. What we will do is that we will take the other data as far as the students and this will become our master list to send out surveys.

This is a course that was designed by an instructor out at Shoshoni High School, PC and Internet Essentials. It fits into the vocational category. This is all done using flash technology.

Let's go to Unit 1 so you can see how the course is laid out and what is involved. This is all computer material. Here are unit 1 lectures. There's a student worksheet that you can fill out and then print. You can learn everything that you want to be able to learn as far as hardware maintenance or Internet essentials. This is all done Web. It's not done in Author Ware or Tool Bar. It's all done here. It's all very well done.

There's a video in here. Interestingly, this teacher teaches at Shoshone. Five of his students came here for the Microsoft program. Two are going to be back next year to finish their degrees and the other three are finishing the MCSC in May.

This is downloading from our server. Hopefully it's some informative video. It's about 20 minutes long. They are building a computer starting with an empty case.

Evaluator: Is this instruction for someone who was actually going to do this?

Darrin Cheney: Yes. That kind of shows you a little bit about what's going on. Then there's a lot of other computer type resources that are on here.

Evaluator: Is it password protected?

Darrin Cheney: No, it's open. Let's see who else we have. Here are some supporting courses. These are password protected. Here's our physiology course. This is an example of a supporting Web site. She has a spot for weekly updates so students can go online to take a look at what's going on. She has rights and permissions to the server so she puts these up. I don't do anything with her site. Here's course information. There are syllabi here. Her lab schedule is here. They know exactly what they are going to be doing for each week. I also have a discussion group set up for her to be able to do announcements and the students can ask questions about them. There is one supporting Web site and I have a similar one set up for Microbiology for another course that she is teaching.

Here's Microbiology. She also has weekly updates so you can see the same template or the same idea. It's consistent. Here's the one for the 12th through 16th. Here is the course

information and a lab schedule just like the other one. I've taught her how to edit online so she accesses a file from the server like this. She can edit it, save it and it saves it right back to the server and you are good to go.

Evaluator: She doesn't have to wait for anybody to do it for her.

Darrin Cheney: No. I don't want to deal with it. I can do it but if you start doing that then all you are going to be doing is Web pages. Here's the core notes. Let's look at Viruses. Nancy did a class last semester on Anatomy. You'll see that in the evaluation materials. When she asked for Web sites for this semester I said okay as long as she did the work. She said no problem.

I'll show you another one that we have on Biology. This is the instructor who is doing this one on his own. He wanted to create an interactive lab. As for course information, eventually he wants some stuff for each individual course, which is fine. This information eventually can transfer to the main campus Web site. For right now, since it's a pilot or prototype course, we're doing it in here. I do have rights and permissions and I'm actually the System Administrator to the campus Web site. I want to limit that as much as possible. We are still working on resolution part to get things figured out. Depending upon the resolution that determines how big the files are. These start off as 1 mg or 1.5 mg and we

can compress them down to about 147 k. We're still playing with the technology.

Evaluator: You're trying to get it to the point where it's microscopic quality?

Darrin Cheney: Right, you can zoom in at least two or three times. This instructor just started learning how to do Web pages about a month and a half ago. I've been teaching him how to get it set up. He comes down and works. He's done the entire Web site. All we have done is to set up the background and the template form. We let him go in and type it in and set it up. His lab handouts are also going to be in here. Eventually you will be able to do the whole lab on the computer. That is what we are shooting for. I've talked to him about applying for a Star Schools project for next year.

Dick is also our resident researcher on wildflowers and those sorts of things. He's going to be inputting a lot of that information on the site. We will password protect this one at some point but I've got it up as a demonstration site. We've got quite a bit of stuff up there already.

Evaluator: Are you going to be doing some more things like that?

Darrin Cheney: Actually they are in Colorado. They are funded for projects for this year to do the second or the second and the third. What I'm trying to work on here is that while I have some folks from the reservation in working on projects is to put a bug in their ear and encourage them to apply. One individual is the media/librarian at St. Stephens School. He has a lot of good different information. I told her we would love to put together a Web site on the Arapahoe or the Shoshoni or whatever you would like to do. I said we'll pay you to do it, too. He said, "really?"

Evaluator: What about the Navaho?

Darrin Cheney: There are a couple of projects this year, in year two that are of interest. One instructor in Colorado will do a project on keeping the traditional life of the Navaho. There is another one in Utah who will do a similar project so there are a couple of Native American projects coming up. They are about two years ahead of us. We are addressing issues that way.

Evaluator: Is there some part of the CWC that connects with other Native American sites?

Darrin Cheney: Not yet. We will start working on that soon. In June when some of those teachers are here that will probably be one of the projects that we will recommend. It's just a matter of putting it

together and I think there are some folks out there that are interested in doing it. Here's our campus Web site. This was also developed in here. I've tried some things back and forth with our public information officer so a lot of the Web technology we are using is being used in a couple of different places. This is all flash technology.

Riverton High School, Electronic Classroom

David Treick, Riverton High School Principal

Sandy Barton, Computer Lab Technician

4/13/99

Evaluator: They haven't started distance classes yet, have they?

David: No, we'll start in the Fall.

Evaluator: Will there be a different configuration?

David: It depends on what they're going to teach in here. I know one of the classes they are talking about is a Microsoft class.

Evaluator: Are most of these computers high end so they can play the CD ROMS and things that are being created?

Sandy: I would think so. The lady that teaches this class, the Microsoft class, and she has her students know the depths of the systems. They take them apart and look at the insides, reconfigure them, and have them go down and then rebuild them back up. She's a pretty amazing teacher. Then she sends them up to our Sylvan center and they take their tests and I think she has 97 percent passing. They just love her. You can tell when they're

working in here that the students had a good rapport with their teacher. She's excited about this classroom.

Evaluator: What do you think will be taught here?

Sandy: I'm not really sure. I'm sure it will be classes concerning Microsoft and certification. But I don't know what else Riverton has in store for it. I think Mike might have touched on some of that yesterday.

I don't know if they are going to set chairs up. They haven't really finished the room.

Evaluator: Has the equipment in this room been de-bugged?

Sandy: No. I don't think any of the rooms are completely de-bugged. All of the equipment is installed and all of the programming is installed. You'll have to talk to Bruce about what kind of bugs he's encountering. But it's about 98% complete and ready to go.

This is one of our nicer classrooms; it's one of the biggest.

David: The advantage of this one is that it's narrow and deep. You can a decent camera angle of the whole room as opposed to a wide and short angle.

Ann Avery, Instructor
Central Wyoming College

4/13/99

Evaluator: Which class is it you're teaching?

Ann Avery : It's not a class. I think mine will probably be the most unusual from all the others that you are getting. My proposal is to create an online writing lab. So, it's not a curricular course as such.

Evaluator: What made you decide that you wanted to do this?

Ann Avery : Frustration from all that are already out there. There are some tremendous ones and yet many of them are difficult to work your way through them and I would really like simplifying things for students as well coordinate to some courses on campus.

Evaluator: Are you working with other teachers?

Ann Avery : Yes, so far I've only coordinated with English faculty on our campus. My intention is to coordinate, not only with CWC faculty, but also with our Diocese area and then eventually with the

partnership area. What I would really like to do in that area is not just offer writing assistance but have links to research sites for what an instructor is doing specifically in a semester.

Take Riverton High School. If I were to connect with the government teacher over there and find out that they are going to be doing a unit on democracy at a certain time, to go in there and update the links from the CWC writing center. So when they go on and access the information on writing, they also have a route to follow for their research. I have two major reasons for that. One is to assist the students because again, you get on the Internet and they just end up mesmerized and are there for hours and hours and they never find what they were after.

This would be assistance, it wouldn't necessarily limit them. I don't foresee that they would have to use that. The other major reason behind wanting those kinds of links is to avoid plagiarism. If we make it just a little easier for them to get started in research process, I think they are less apt to turn to canned papers.

Evaluator: Are the canned papers from the Internet becoming a problem?

Ann Avery : Yes, I had two papers in a 1020 class just the other day that I graded. This is always fascinating to me, he got a 72. I figure if you're going to get a canned paper, you ought to at least get a B

paper. I graded it and set it aside and about twenty minutes later I'm reading along and I see the same phrase and I thought, didn't I just read that? I went back and there are paragraphs there that are absolutely identical. That just happened last week.

Evaluator: When a student goes to one of your sites how would it work?

Ann Avery : I would like a main page that will identify if you need general writing assistance, here's your link. That general writing assistance will be everything from handouts, printed information, to eventually CWC tutors to be doing online tutoring papers. Where students send in their papers and the tutor gives the feedback; and they participate that way. Beyond the writing, I want information about our tutor center, our personnel, etc. I would like to have links on there to a couple of specific sites.

One of the things that I have already talked to the English faculty about that I hope to see happen fairly quickly is some coordination of assignments. For example, in 1010 we all do a research paper, but at this point we can assign any topics or leave it open to the students. I'm getting positive feedback from the English faculty that we can begin looking at coordinating one assignment say in the Fall or in the Spring. Let's say we have three subjects students can research. Number one, that will allow us to do these research links for them more successfully. The

second thing is that this is our first tiny step toward peer grading. So that we can do or more standardization of assessment of student papers if they have all written on the same thing then we can look forward to swapping papers.

What the other faculty realizes is that it's not additional work for them at all, it's just grading a different set of papers than the one they would be grading. At worst it would be maybe getting together for an hour to look at how we have graded. In that same manner, I would hope that eventually this has a link as a resource for other instructors in other areas talking about writing across the curriculum, talking about ways to utilize writing that doesn't necessarily increase their work load and not have to grade for grammar in the government class and yet take it into consideration.

Evaluator: Do students have access to grammar correction programs?

Ann Avery : They do. On campus we definitely do. I tell my students not to use grammar check unless they are already very strong in grammar. Grammar check tends to make a lot of mistakes. I have a wonderful student right now for Africa who comes in at least twice a day and he says, "Ms. Avery, the computer says I must do this." And I say, do you remember Nicholas that Ms. Avery is

smarter than the computer. I say do this. They do have that access, though.

Evaluator: Do you see any benefit to using the grammar check?

Ann Avery : At this point, not much. Again, you have an identified weakness in you're aware of... For example, in my own writing I tend to use passive tense a lot. So I might run a grammar check just responding to the passive tense part of it. I'm not going to look at any thing else. But you have to know what it is you are looking for. If you just go in and ask it to check, it creates more problems than it solves.

Evaluator: If they're going to use it, you would help them set up the parameters?

Ann Avery : Right. In my 1010 classes, which is the first level of freshman comp, I have them, with each paper, do an error log so that they can begin to see what their errors are and group them. Then they can take that if they know that they misused, they never get the introductory element comma there, and then they can go through grammar check and look for just those.

Evaluator: What else do you want to do?

Ann Avery : I hope that it will eventually go into... I never have the right terminology here, but the interactive discussion groups for classes such as a 1020 class, which is a literature based class, to be able to put out a prompt for discussion. What do you call that?

Male: We're going to call that a tutor group. So the idea is that we will create some places that the tutors can go ahead and initiate some of these discussions.

Ann Avery : My coordination right now is almost exclusively with English faculty because that's my department. It's a little easier to work with them right now. They will be my testing ground too.

Evaluator: Do you feel comfortable with the process through which you've gone?

Ann Avery : Yes, to date all I have done is research and begun to formulate the ideas because I can't sit down for the hours it's going to take to work with Darin until my classes are over. Yes, I'm very comfortable.

Evaluator: Will the tutors go through a training process for the online component as well?

Ann Avery : I think they will have to.

Male: That's probably what we'll look at for the continued funding. Initially we want to get the site up and be able to go in and show them how to edit.

Ann Avery : There is a tutor training program right now for on-campus tutors that is resulting in certification. I think my first step would be to talk to the people in charge of that and find out if there is an online component and if not, to take what they have been doing on campus and try to adjust it to the online.

 One of the other things that I would like to say is why I chose this. I want to know more about how to do these kinds of things. This looked like a really good way to do it. I can type on my computer but I wanted more and this seemed like the logically way to learn more.

Mindy Young, Instructor
Hot Springs County Schools
Internet Research Website

4/13/99

Mindy Young: My name is Mindy Young and I am doing mostly elementary web site that will enhance research in elementary school. Allow them to find research topics and also find the information that they need to complete it. To teach them how to outline and story map and all of the introductory things into research but also how to write a paper, bibliography and things like that.

Evaluator: What moved you into wanting to do this?

Mindy Young: I'm an elementary teacher and a high need area is the ability to write. In my classrooms, I have my students write in all subjects and there's a marked improvement in their writing skills. But also having taught fifth grade, I have fifth graders come in who have no idea how to start a research report. They copy out of the encyclopedia or... they can't put things in their own words. They read very well and they have all the skills to be able to do it,

they've just never been taught that these are the steps to research.

There's also the fear in a lot of teacher's minds that if they get on the Internet, they're going to find things they are not supposed to. So, a big part of this is based on the sites I have on there that they can go to safely that deal directly with the topics they're looking for. There's also book titles on there in case they don't have access to the Internet. There are other resources that they can talk to--the high school Spanish teacher, the high school science teacher, other people in the community--that they can use as a resource, if they don't have a computer at home or if there is only one computer at the school. It can be used in any school situation.

Evaluator: Have you started putting together the site?

Mindy Young: I have it all on paper. I haven't started putting in onto the site but that's not a big deal because I've researched the Internet sites that will be on each page and I've done all the projects. It will also have a list of project ideas so that the teacher can look at the students ability whether it's first grade or ninth grade, and within a classroom whether they are gifted or learning disabled they can pick a list of projects from that page that fits their ability. It may not be in writing a ten page research paper, it may be building a pyramid or doing something different. So those projects are done,

anything as long as they know that it's on and it's available for teachers to tape. Those resources, if they don't fit onto the site itself, will be in the teacher resource manual. They can look those up and if a student is having trouble finding this information or needs another resource, by fifth or sixth grade they are required to have four or five resources, and if they can't find them then the teacher will have them available for them.

Darrin Cheney: The big thing with her project is that there is a whole bunch of stuff that is focused on a series of modules that teachers can bring back to the classroom.

Mindy Young: That's one thing that has been a benefit to me in preparing all this is having taught for so many years and having my master's degree and working with curriculum, is all of this will fit into a lot of subject areas - science, social studies, and math. They go in to study the Mayan and they have immense math skills. To have your kids study that while they're trying to fight through their own math. These people didn't even learn it from anybody, they knew these things. They created this whole situation. Those are the things that I have tried to focus this on is so it will fit in to their framework.

Evaluator: Have you found other sites on which you're modeling yours?

Mindy Young: Mine's taking from a lot of different sites to go to. I haven't really found one that matches the variety of mine. I haven't really looked for it either.

Evaluator: Will there be recommendations for specific age groups?

Mindy Young: I sent Darrin some outline models where first and second graders will be doing a spider map or a sun map where they would outline by basic topics, rather than having to do a normal formal outline. Fourth and fifth graders can do a formal outline and take those outline notes and write their research project or do their art project or creative writing from those notes. A sixth or seventh grader would be able to take their notes into note cards, into oral presentations, or anything beyond that.

I have focused it on several different grade levels and I will take one basic lesson plan that will include adaptations for all of those students and show the teacher how to use this topic to teach these research skills. Then they can take that to teach any of them. You even get fifth graders who can't do a formal outline. They can do the first and second grade outline without knowing that it's a first and second grade outline. It's just a matter of this is a better organizational tool for you. That's something that will be included in with the teaching materials is to show them these are the ideas for researching.

A lot of times you hand them this research project and expect them to be able to take notes out of the encyclopedia, off Internet, or books. That's a difficult thing for students to do. To have some type of model for the teachers to be able to say, okay now let's look at this paragraph and... In fact one of the components of the very first lesson will be to copy a page out of social studies book and have them read through it and teach them how to outline and teach them what's important on this page. Some teachers do it automatically, some don't. So everybody does the same page for the first time and then they should be able to do it from there.

My whole philosophy is... freshman English in college has become a research based class because they have not learned research in the younger grades when they have done several research projects. The only thing a college freshman should really need to know is this is our library and this is where the periodicals are and this is our computer system, these are the differences between the big and small high schools. But you know how to research and these are the differences you will have to know here. Of course, when you get to statistics and things beyond that, they will have to have some additional information but as far as basic research papers, they should really leave high school knowing how to do that.

Each student has his or her own way of researching and doing an outline. That's one reason why I included several

different projects because I know... just going from book reports, the basic old book reports, there are a lot of kids who will read a lot of books and don't want to write down what they read. They want to do the projects, they want to build something, they want to see something in front of them, draw a picture or finish the story. There are other things they want to do.

Evaluator: Are you addressing the Native American component?

Mindy Young: My Native American component is the accessibility on the reservations for library materials. I think that they do have funding to get computers in their schools, as far as I understand. They're limited in their language skills and their reading ability. But as far as getting something off the Internet, I think that they can do that. There are sites through the US Department of Education that are written at an ability level that they can get from, the video clips, any of those things would be excellent for Native American students.

The learning style of Native Americans has been studied a long time. I think the variety in the projects will help them be successful rather than reading and writing all the time. Having to put something down on paper hasn't been culturally done in their schools for a long time. There's a variety and they have a choice and an option so they can be successful at it without having to turn in a ten page paper.

In any classroom situation, I've always done rubrics. I will put in the teacher material, rubrics for the basic research projects at different grade levels, rubrics for any of the creative writing projects at different levels, and rubrics for the art projects at different levels. These are things that need to be there in order to let the teacher know that this is what you found and that you've done the research. If I put in an assessment just for a research paper, it's not going to help the teacher know that if they build a pyramid, that they have done the research. But if there is a rubric in there for the art projects, then they will know that the students have done the research for it. So the assessments will be there.

I think having the map done, having the outline done, being able to put just that little bit of information down on paper is an important assessment tool. Have they put in the effort to at least get that much information off the Internet? Even if they can't write or they can't put that into words, can they tell you what they have done? Can they organize their thought to a point where you know that they have the skills that are needed to move on to more difficult research? And that would be part of the assessment.

There would be three or four different types of assessment Rubric's in the teacher's books so that they would know how to assess different types of students at different grade levels or different learning abilities. If you give a fifth grader who's reading at a third grade level a third grade project to do, you need to be able to assess them.

I have a lot of it done but I didn't do anything with it last month. We've been getting ready to go to Mexico. Fourteen high school students for ten days in Mexico. They're all Spanish students.

That's one thing we did; we went back to Arizona last spring break and I did a math, science, and technology on weather. We took the weather channel CD-ROM and I taught the students and then I taught the teachers and said, the school bought this CD-ROM and I just played it. These are all the things you can do with the CD-ROM. They had a packet that included math worksheets and math topics that they could teach off the science CD-ROM. The weather topics they could teach off it. Plus, it got them into taking information on their climate and rainfall using a spreadsheet and a database to figure out things. It was a lot fun. I really enjoyed doing that.

I was listening to the nursing teachers talk and how the students were very afraid to come in and do this program. If you can have them doing this type of thing from elementary on, they won't come into the college afraid of it.

Nursing Faculty

Lita Burns, Instructor

Vicki Ferris, Instructor

Central Wyoming College

4/13/99

Lita Burns: I am Lita Burns and I'm going to begin a project to put clients in the community one online.

Vicki Ferris: I am Vicki Ferris, Nursing Faculty also, and I'm currently teaching two online classes, Medical Terminology and the more interactive is Mental Health and Illness.

Evaluator: Tell me what kind of experiences you have had over the past year going from nowhere to now you have two classes up.

Vicki Ferris: The Medical Terminology class was really fairly preset for me. The learning program is on CD-ROM or text book, whichever the students want. They can buy the CD-ROM for their own computer and we also have the institutional version on campus. It's a much better way to do Medical Terminology than me lecturing three hours a week because it's a chance for them to

have repetition and instant feedback and to apply it. They actually use it in medical records and interpret it. Students love it. The testing online, we've tried two different semesters now.

This semester we're using Top Class. It's better, it's not perfect. It still has a few problems but it's much better and easier to control. The problem is the tests will have to be changed every semester. The students can still print out the exams so there's always the potential that they could share information with each other on upcoming classes. So, it's still not perfect.

The most fun class for me has been Mental Health and Illness. It was previously always a live class, it had no distance component to it at all. I no longer lecture in that class except on psychotropic drugs. That's a three-hour lecture because it's fairly complicated material. Most of the rest of the material is covered very well in our book.

We have a series of films that are really excellent and actually showing students what schizophrenia looks like or what manic depression looks like or what anxiety disorder looks like, personality disorders also. So I have incorporated those with some online quizzes. Before they watch it, they download the questions related to that film and they watch the film, answer those questions and email me the answers.

Evaluator: The film is on videotape? Do the students buy the video?

Vicki Ferris:

No, they check those out of the library. We have online class reviews related to the material that they have read in their book. We also have discussion groups on a weekly basis and secondary to that site, and even more active, is what we call the journal club. Each week anywhere from two to four students are assigned to find a current journal article that relates to the topics that we are discussing that week and to post an abstract related to that and tell how it enhanced their learning from the text book or if it contradicted anything. Just to kind of give the main points of that. Each student is required to log on and make some kind of intelligent comment that makes me know that they have read the material.

We've had some wonderful discussions and some really wonderful articles come up and so far, the students have done really well. Their comments have mostly been positive. The first week they were all kind of overwhelmed and upset but they've learned how to do it. I think it has enhanced their computer skills. It has given them an opportunity to connect and support one another. Sometimes they put up cute little things like, "Go to hamster dance site to relieve your anxiety." They've learned how to link so other students can actually go and read the full text article. I think they're having fun with that and overall, their first two exams, they've done better on them than they have done in the past.

Lita Burns: With the testing, now we can put in a bank of questions and it will deliver a different text. So if we work in Medical Terminology on just building that bank, we wouldn't have to redo the tests every single semester.

Vicki Ferris: To me, one of the most useful things about the testing is to give them also a miniature medical record and have them answer questions related to that.

Vicki Ferris: For the most part, they have been really positive about it. In the last couple of weeks I've had some students log on and say, "I thought I was going to hate this class, I was so mad when I found out I was going to have to do it online, I don't a computer at home and I was going to have to come here." It's been a great learning experience. It's allowed them flexibility to adjust around their other schedules. I think it has been a good learning experience. It's actually been really fun for me. It probably is more time consuming than if I taught it live here and then I drove to Jackson and taught it live there. I think that the quality of interaction has been good and the nice thing about it for Mental Health is that I've always found that in classes, I do mostly discussion rather than lecture in this class, that there's only one or two students in every class that are really verbal. They kind of tend to monopolize and other people hate to interrupt them. I'm not particularly great in controlling that and getting the more quiet

students to interact. This gives everybody an opportunity and requires everybody to interact. I think that we've gotten much better quality discussion because of that.

Evaluator: Are you requiring interaction as part of their grade? Do you attribute a certain percentage?

Vicki Ferris: Yes. Ten percent of their grade is class participation. I've never done this before so I just kind of pulled that number out. I give them a weekly grade based on their participation. I started having a fair amount of the discussion related to the topics we were doing that I led and then as the semester went on, I backed off on that a lot because they were doing more and more abstracts on the journal club. That was taking a lot of time for them to read. That's always been the chief complaint is that this is just a two-credit class it's a lot of work for the hours that they put in. Which is a legitimate complaint and it has been for a long time. It's because I really like it and so I try to make as much of it optional as possible.

Lita Burns: We're limited to in Nursing to a total number of credits that we can have for our program. A lot of people were limited. Unfortunately, we just continued to whack away at Mental Health mostly because we don't have a lot of clinical facilities for Mental Health. I think that in terms of providing some continuity and some

real strength in the area of mental health for the program as a whole, we have to have this two credit class be in depth in that discussion area.

Evaluator: Have you got any words to the wise or pitfalls... If somebody came up to you and said, "I'm considering doing this. What are the ten top things that I shouldn't do?"

Lita Burns: One thing that I did not do that I should have and I still plan to do for whoever takes over this course from me, is that I think that how the grades are determined for class participation needs to be more clearly spelled out. What are the rules of appropriate conduct on the Internet? How do I decide whether to give you an A, B, or C for class participation? I have some ideas in my mind but I have never clearly spelled them out. Students have fortunately not challenged me on it a great deal.

I think that the system I use is fairly reliable and I just look at all the things that they have to respond to and do they respond in an intelligent enough manner that brought in other things or analyze and critique differences. If they participate and it looks like they have at least read it, I'll give them at least a C; probably higher than that. But it probably needs to be spelled out more clearly. Perhaps, being more available the first week when they are first logging on and struggling with it.

Evaluator: Do you do a training session with them for the system?

Lita Burns: Right, I go over the syllabus, the course requirements, and actually show them how to use the system.

Evaluator: Lita, what are you working on right now?

Lita Burns: I haven't really got into the heart of the matter yet. The plan is that I am going to take our client in the Community One class, which is a two credit class which is based on one credit of theory and one credit of clinical, and use the format that Vicki used for Mental Health to deliver this class because we need to deliver it Distance for our Jackson students. The class is mostly designed around a seminar format with discussions with the students presenting at least a part of each discussion group.

The thing that I want to be able to do with this class is to make sure I mix the Jackson group with the Riverton group. We've got sixteen students in Riverton, eight in Jackson. In the past, the way I've done it live is that I'll have groups of four students who are responsible for presenting and leading the discussion in the classroom. I want to do that same format but with the Distance students and pair up the Jackson students with the Riverton students in order to sort of facilitate the idea that the Jackson people are not a separate group from this nursing program. So, when we're looking at our students attributes, that the Jackson

students really sort of do look a lot more like Central Wyoming College students. Maybe they will have an opportunity to look like that if they continue to remain completely separate all the way through the program. That's one of the goals that I had. I wanted to do it this format so that I could mix the discussion groups a little more easily; putting them online rather than having them physically present.

This will be strictly online. Unfortunately, I don't think we will have the opportunity to get on the two way system until January 2000. Just because of the design of this class, I think it would actually work better online than the two way discussion.

Evaluator: What have you been doing so far? How far along are you?

Lita Burns: In light of the fact that I have managed this class in more of a discussion group class in the past, turning it over to online is not going to be a major difficulty. I have all the topics formatted. I have the discussion questions for each of the topics all ready to go so I just sort of need to put it into action. That's a Summer project. The template is already set up. In addition, what Vicki didn't have that I need to add is a journal requirement. I have to have a way of knowing what's going on on a regular basis with their clinical experiences.

In my live class, the way I've done it, is weekly they have turned in a journal to me telling me what's going on in the classes so that if I see anything that I'm not happy with or have any concerns I can get right back to them and call the preceptor at the site. So, my plan for this class is that the journal will be online as a part of the class. They will weekly journal me about their clinical sites. That way I can keep track of what's going on in the Jackson clinical sites also.

They have to address our objectives for the clinical in their journal entries. So they have to pick one of the objectives for their clinical experience and tell me how they met the objectives and what happen with the objectives or if anything got in the way of meeting those objectives.

I'll give them brief feedback on it. Actually, it's been nice that this is probably one of the only clinicals where I think that I focus more on the positive stuff... When I'm onsite with the students and we come back and give them the feedback and grade them, it seems like I always... Well, probably the reason I am able to focus more on the positive is because I'm not on site with them and they probably don't share as many of the negative things with me. Which is okay because I think that if the preceptors felt there was something negative, they would share it with me. This year too, because I have this online interaction thing, I'm also going to give the preceptors the opportunity, if they have access to the Internet, to be able to communicate with me

also through the same thing or even with their own students, if they want to. Because they set up individual clinical experiences, often times it has been hard for the students... Lets say they are in a school setting and the school nurse for that day decides she needs to do something completely different that would not include one of our students, they call me at the school to see if I can get a hold of the student... it's been a real communication mess. Because so many schools and facilities do have access to the Internet I think that if we could bring them into this communication, then it will decrease the amount of telephone call time with us.

Evaluator: Is that going to be possible? Will you create expectations for the preceptors with things that you know you want them to report to you?

Lita Burns: Those are already laid out. I've always just communicated in a written form. I've sent them the objectives, sent them the evaluation tool and for those who want and have the ability to put that online too, otherwise we'll just go back to the US Mail and the telephone. Which has been working but the problem with that is that if I'm not in my office all the time, sometimes I'm two or three days behind in getting back to them. I'm hoping this will expedite things and I can address their issues much more quickly.

Evaluator: You'll be able to get online regardless of where you are as well?

Lita Burns: Yes. I don't get online from home but five days a week I can get online here and it's those same five days a week that the students will be in a clinical setting.

Evaluator: Have you run into any problems?

Lita Burns: Not so far.

Evaluator: When will this be available?

Lita Burns: It will be on for the Fall Delivery course. It will be ready to go on August first.

Evaluator: How many courses are online now, or almost online for Nursing?

Lita Burns: We do have our whole program being delivered distance. Not all of those courses are online though. Actually, I think this will be only the fourth course.

Evaluator: Is the fact that you have Star Schools enabling other course to go up?

Darrin Cheney: Yes, absolutely. In fact, some courses that aren't necessarily Star School courses are utilizing the technology. The reason I'm doing that is because in a way, I see the equipment being used for the purpose it was bought for. Right now I've got some instructors who are developing some courses utilizing the resources that will also open up when they want to apply for Star Schools project. For example, I'm working right now with a Biology instructor whose using the lab. He's doing it all on his own time, I'm giving him the support and server space. Part of the reason too is that gives us another science course that goes via distance.

Lita Burns: I think, too, it's centralized where the information and the answers come from. I think that one of the problems we have on this campus is that people are doing phenomenal things all around the campus. They tease the nursing faculty about how we are on the north campus because we're on the other side of the tennis courts. We sort of live over there so when we come to this we're like, oh yeah look how nice this is over here. Because we just don't get over here enough. It's true all over, we've never communicated well across programs and across disciplines on this campus. But now that we have Darrin, Star Schools, and the technology somewhat centralized, it's sort of a meeting place that we all come to and can share the work that other people have done. That is enabling a lot.

Evaluator: Do you normally have faculty meetings within the department of nursing?

Lita Burns: Monthly. Nursing has faculty meetings, every division has a group that meets. Then a group called The Faculty, which is the faculty organization senate, meets monthly also.

Jeff Hoskins, Instructor
Criminal Justice Program
Central Wyoming College

4/13/99

Evaluator: What drew you into doing this course?

Jeff Hosking: I just think with the advent of computers, it's just an opportunity to get the material out to a broader group. Especially as rural as we are here.

Evaluator: Is there a certificate program attached with your program?

Jeff Hosking: No. Right now it's just part of the general requirements for the criminal justice program. So, my students are either seeking an A.A. or an Associated of Applied Science from this institution or working towards a bachelor's degree, first two or possibly three years towards a bachelor's degree. That's what my students are looking at. Either the two year degree or the three year degree, no certificates are involved.

Evaluator: The reason they take the course is because it's required?

Jeff Hosking: Actually we have two or three different tracks you can take. Depending on which track you are in, it's either an elective or required course. We have required electives but you can choose which ones you want. So, in that respect, they are required.

Evaluator: When did you put in the application?

Jeff Hosking: September or October, roughly.

Evaluator: Any other reasons why you decided you wanted to do it?

Jeff Hosking: I don't think the money is a big factor. On the other hand, I don't think I would do it for free because it's just too much work. Primarily, it was one of the peripheral advantages that I got out of the programs. I also think it makes you more effective in the classroom. It forces you to quantify and qualify those things that you sort of do intuitively. Now you've got to actually sit down and figure out what you're doing. It's an opportunity. I think this college, this institution, sort of emphasized technology so I think it was really consistent with one of the missions that we have around here. This is my first year here.

Evaluator: Have you taught before?

Jeff Hosking: I've taught adjunct before at a university but this is my first time full time teaching. That's why the quantifying stuff is more helpful to me than someone such as Ann who has been teaching for a number of years and has it all down.

Evaluator: Did you talk with other instructors? Were there other people that were teaching in the program or working on their materials?

Jeff Hosking: A little bit. I mostly talked with Darrin. I talked with him extensively with Sonja. Some about what the outlines of the program were, what it was all about.

Evaluator: The idea that was of highest priority to you was how to create a crime scene so the students can learn better?

Jeff Hosking: Right, one of the things that you may or may not be familiar with is when you start getting into law enforcement training, although the classroom has its place, a lot of it is hands-on. I was looking for a way to do something that's similar to hands-on training for a law enforcement agency that we could do through the computer. For instance, if you are taking a class in crime scene analysis, the instructor will go out and physically put together a crime scene. If it's a car, he will provide the elements of

hair, fiber, blood, and weapons. And then you go out you just look for them.

There ought to be a way to do that just as effectively online. That way we can reach a broader group and you're not depended on a lot other things. You're not dependent on bringing an instructor from Washington D.C. for instance. That was my main concern was trace evidence—hairs, fibers. It's just a matter of making sure that our photographs are detailed enough. Now you don't have to go find a beat-up car and plant stuff on it. That was sort of the idea I have been kicking around for a number of years but didn't have a way to bring it forward. And that was the start.

Evaluator: Do you teach other classes?

Jeff Hosking: Yes, I am the criminal justice department. Ultimately, there is a whole series of things that I would like to do that all tie into this one. Sort of our grand scheme is to start now, I want to start the natural progression of the criminal prosecution. The first thing that happens is the crime, the second thing, where the agencies get involved, is the investigation of the area. From there, we get into the area of criminal procedure. You apply for search warrants and you apply for arrest warrants. The next project that I would like to see is the criminal procedure aspect. A lot less physical looking and a lot more legal oriented and that sort of stuff. The next step

beyond that is the law. Now that you've got the procedure down, what are you going to charge these people with and go through that sort of thing and that would be unit three? Unit four would be the trial. Now that you have this information, now you're going to trial. I don't have a court class yet but it's in the works. And then finally, corrections.

The idea is to have a delivery from the beginning to the end, from the time someone is brought into the criminal justice system until the time they are out, to twenty years later when they are release from parole. Right now, we've just got the first part, when people are coming in. So that's the ultimate goal.

Evaluator: Have you seen other courses that have been developed for online?

Jeff Hosking: Not too many. I have a few students who are taking online courses. I have seen some of the ones developed here, yes. The only one I tried to access, I was unsuccessful. Lots of web sites but not actual courses.

Darrin Cheney, Instructional Technologist

Central Wyoming College

4/13/99

Darrin Cheney: On the evaluation side what we did in Illinois is that the teachers were evaluated depending upon what their contracts or what the school board said. What we were more interested in as a distance learning department was to take a look at how the courses were working, how the support structures were working and those types of things. Here I believe the way the support structure is going to work is from the individual division.

Evaluator: Do you mean to the teacher?

Darrin Cheney: Yes for the teacher. Depending on whether it's school or what have you there still needs to be some evaluation component to see how that is working and if something needs to be fixed or changed. In a lot of cases you can apply some things from other states and other things but essentially the schools are going to need to come up with their own answers and their own process that works for them. Each school is different but there needs to be some coherent processes in place for example how to get

materials from this school to that school. During the course, did the technology get in the way and did it enhance things? That's something that the students can fill out. I tried to incorporate some of those things on the student satisfaction survey.

Evaluator: Yes I saw some of those. When you get those back will you let me know?

Darrin Cheney: When we get them back I'll give you a data set.

Evaluator: When do you think you are going to start collecting those?

Darrin Cheney: Letters will go out tomorrow for Fall. We anticipate that we will have data coming back in the next week or two. As soon as the classes for this semester are out we will go ahead and send that out. What we have done is share evaluation forms with Colorado and Utah. They will facilitate those. I've got a Web site set up and I just have to finish setting up the database for the back end of it. That will offer the option of filling it out on-line.

Evaluator: How do you control for filling out on-line versus sending?

Darrin Cheney: I'm not sure yet. This is a new way of taking a look at things. I like to have that hard piece of paper in my hand as an evaluator. I like to have control of the data. I'm probably going to

build some controls in. At this stage of the game I will probably put in a code alpha interactive form that corresponds to the sheet so if they fill out the form then we know that that number corresponds to that student in that class. That way we won't be duplicating data.

Evaluator: That would be the only thing that I would worry about.

Darrin Cheney: Once we have it the file comes in off the server and we take that and put into a database. Then we can run it out. We can link it to an Excel spreadsheet just to run some standard deviations. We'll run the first batch, see what we get back and see what changes we need to make. I want to share that information right away with the instructors so they feel like they are a part of it. I think that is important that they get feedback and that they have input into the process.

Right now the way the grant is set up is that there are three types of satisfaction data that is requested: teacher, student or parent. For college the parent isn't going to work because it is against the law. You can't send a survey to a parent of a child over 18. There are privacy issues there.

However, for the courses that are going to be taught in K-12 that is something that they can be thinking about. I do have a survey developed for parents. Right now what we will do is focus on the teacher and the student. Then we'll get into a routine,

which is part of what this is all about. At the end of the course we will set up the time tables so that the surveys go out. It would be preferable to hand them out in class and collect them in class or do them electronically. Then we'll have the data right away.

Evaluator: If you can do it electronically don't you cut through a lot of the data entry?

Darrin Cheney: Yes, a lot. That's the plan. I have the Web form already set up. I just need to complete the back end but we can collect now and it's secure. You can't get into it unless you have rights and permissions.

Evaluator: Which program is this?

Darrin Cheney: We set them all up on Front Page.

Evaluator: I haven't used that yet. Is it very easy to set up?

Darrin Cheney: Yes, it's very easy. You can set up a Web server, either to run NT, which is what I'm running or I can have a Web server set up off of Windows 95.

Evaluator: When you put the questionnaire in it do you take it out of Word?

Darrin Cheney: I take right out of Word and copy and paste it into a Web form. When you set up the form, basically you set up a field for each response and that is the same field that goes in the database. The latest trick that I learned from Microsoft is to go ahead and set up the database. You can link your database right to that file. It sets up all of your fields and everything for you. Then you can actually link from your database to a spreadsheet and do all of your calculations. It's already built in. I like that a lot better than trying to run everything manually. I used to do it in FoxPro. You'd write your script for your evaluation form and you'd get your reports back but it becomes a pain after awhile.

Evaluator: Front Page is Microsoft?

Darrin Cheney: Yes. The other piece is that while the courses are going on I'm trying to at least let folks on a Web site interact with those people on a regular basis, every week, every other week or whatever to get a feel for what is going on. Bruce will probably do the same down in the classroom. That's where we marry up a student tech with a teacher. That way you have constant feedback coming in.

In Illinois my best record was an instructor showing up for the first time ten minutes before class to teach over the system with no training. He had no idea he was going to teach over the

system and no clue how the equipment worked. At the same time we were running a major VIP event on campus so I couldn't really spend time with him. He did okay. The system was that intuitive.

I prefer it the way we are doing it now which is to do the full course design, practice up front, they can go into it and they can ease into it and teach. One of the things that I tell the teachers is that the more you are prepared the more flexibility you have. The less preparation you have the less flexibility you have. It's easier to move modules around once they are already packaged than it is to say "Well I want to do this thing different but I'm not ready for this". Bruce and I are working close together. We have a good solid plan.

It's a three-part process. They get an orientation on the interactive system first. I customize training depending upon what their needs are. Then they come for curriculum design assistance. Then they put that together and they go back and they practice before they actually teach on video.

Evaluator: What kind of practice does he run them through and what feedback is provided?

Darrin Cheney: We have only done some preliminary things. We did an inservice in January. We gave them an orientation to the system. Then they came down and they designed a five-minute lesson. They had one or two objectives and five PowerPoint slides. Then

the next morning they taught for the five minutes as a group. Then they watched their presentations and talked about them.

Surprise, surprise, some teachers had never seen any other teachers teach before. It was good to have the math teacher be able to sit in on the reading teacher and the science teacher. That process worked well.

En Route to Lander Valley High School

Darrin Cheney, Instructional Technologist

Sonja Matthews, Secretary and Graphics Technician

Central Wyoming College

4/13/99

Sonja Matthews: We will probably be able to talk to Jerry McDonald at St. Stephens. He'll probably be able to give you some ideas out there at the Indian school of what kind of courses they are looking to offer. He'll be a good reference for you.

Darrin Cheney: I've been working with Jerry on the teacher training for St. Stephens.

Evaluator: Tell me what you are you doing there?

Darrin Cheney: What they wanted was a three-day session, an introduction basically to tools for the classroom. I did a session on Microsoft Word, Microsoft Excel, PowerPoint, and Web and then the key component to each of those is how can you incorporate the Internet into the classroom. This was to give teachers first hands look at the software and hands on experience as far as utilizing the software in the classroom.

Evaluator: Is this grades nine through twelve?

Darrin Cheney: It's K through twelve. It's in two buildings. The classroom is located in the elementary building.

Sonja Matthews: They are building a new high school that will be directly attached to the elementary. It will be basically one big building.

Evaluator: Are you going to have to move everything that has been installed?

Darrin Cheney: No.

Sonja Matthews: It will stay right where it is.

Evaluator: The distance learning classroom will continue to be the same classroom?

Sonja Matthews: Yes.

Evaluator: It will be for all the grades whatever they do?

Sonja Matthews: Yes. I was thinking she would be a little more interested in St. Stephens. I don't know if we can find anybody at Fort

Washakie that can give us any information but at St. Stephens I know we'll be able to.

Evaluator: What else have you been doing with Jerry?

Darrin Cheney: I did three days of training for their teachers and one principal attended some of the sessions. The idea was to get them excited and going and able to use some of the technology. I'll do a follow up day of training with them on the 23rd. St. Stephens has purchased laptops for all of their teachers. Each teacher has a laptop.

Evaluator: What brand did they buy?

Darrin Cheney: It's a brand I've never seen before, NoteVision.

Evaluator: How long have they had them?

Darrin Cheney: They just recently got them. They are trying to integrate the technology into their school and to start to put some of the resources along with it. They are the first group that has come out of the gate that has wanted some customized training. We've done Star School classes for two years down here and there has been a tremendous good. People have been able to take those generic classes. Right now we are trying to focus on

with a third grade teacher. In one particular case we took a high school PE coach and put him with gifted and talented.

Again, these schools are not that big but these folks don't get to interact with each other on a daily basis. I'm going to be doing a guest lecture out at St. Stephens this month for an English teacher.

What they are doing is that their teaching is part of their project. The high school students have to go out and put together a presentation on a country of their choosing. The mechanism for putting it together as a presentation is using PowerPoint presentation.

Evaluator: When you do that do you use the wizards that are built into PowerPoint?

Darrin Cheney: It depends on the group. A lot of the strategy is to pick a template. Well, when I start I am not actually working in PowerPoint. We do all of the design at the board. For teachers it's one of the most interesting experiences that I can explain. I've done it for Web development. I've done it for a couple of different things. A lot of what people don't understand is the process of how to design whether it's a Web page, a PowerPoint presentation or what have you. We focus on the design part first.

Evaluator: Is that the instructional design or the look of it?

Darrin Cheney: It's both. It's integrated. For example, last Thursday night we, as a group, decided we were going to put together a presentation for our scoreboards. We looked at the design constraints, the room elements, and all those different things and incorporated that into our design. We designed each of the slides on the board before we even turned on the computers. The whole idea is that when you sit down at the computer you spend as little time as possible. Once we had everything all set it worked out well.

Evaluator: Would you call that storyboarding?

Darrin Cheney: That's one strategy that I use. That's probably about step four or five in a seven-step process that I use.

Evaluator: Can you tell me the seven steps you're taking?

Darrin Cheney: Do you mean in a PowerPoint presentation?

Evaluator: Yes.

Darrin Cheney: You define the presentation, which includes the audience, your room constraints, how much time you have, and all those things. Then you go ahead and you pick out your slide type. You

figure out your layout. You add your content such as bullets, images, text, etc. You put it together and add your transitions. Practice with it and most importantly have fun.

Evaluator:

Go back to when you first start working with a teacher.

Take me through that process that you are using. What do you do step by step and how you work with them?

Darrin Cheney:

What I've done is that I have put together a guide. I think you have seen and have a copy of it. I developed a guide for a couple of different reasons. One is it becomes a discussion starting point. Two, it becomes a help for the teachers which is a strategy for them to be able to put together the project. Third, it ensures that I have projects that are consistent and have all the components. When I went with a faculty member before a proposal was submitted we brainstormed as far as what it is that they would like to include in the project, what they want to do.

I had a couple of folks, one in Colorado, that for her project wanted to do a full Internet based course, a TV course and a study guide. From there, once a course has been okayed, they've gone through the curriculum committee and they have said they will fund the project that's contingent upon the next step.

That next step is that we sit down and we talk and say okay, the committee has reviewed your project and we'd like to fund it. Let's talk about how you want to put it together. Here is

the guide and this is what we are going to require from you. What that allows them to do is graciously back out or to modify what they are thinking and put it together.

Once we get through that part we talk about the curriculum and the instructional technology that is to be used in the assessment criteria which is to assess how the course is working. I want the instructors to put material in there at the front end to think about how things are set up. At the end of week five, ten or fifteen, if they ask the students how things are going or how are the discussion groups working they will be able to utilize that information.

Then I go through the course and try to identify what the integral components are or what they perceive the components of the course are going to be. For example, this morning you heard Jeff's course is a text based course. It becomes the center of the course. Then we take a look at some of the other components. What have they been using? I request that they bring a syllabus for the first meeting so I have a chance to take a look at how they have thought about or how they have structured or how they've taught their courses. We put together a course map to make sure that flow and sequence is in place. We take a look at objectives and outcomes. Depending upon what level they are at and what state the curriculum is in, either we spend more time there or we move on. In our case, especially if it's a course that has been

redesigned on Channel 3, all of that information has been identified.

I've been working really closely with Paulette this year for this batch of folks that a lot of issues and design considerations are starting to get factored in on their end of design before they come here. Once I have the outcomes identified and I've got the objectives and I know how the course and sequence is going to take place I use a couple of different tools to then break down the course into individual weeks as to what the reading materials are, the site messages, discussion areas and other announcements. Then we decide how we are going to go with the course. There are some perceived notions of; well we are going to design the course for video. If that's really a push we'll do that and consider that from the front end. Typically I like to wait until we have gone through an initial design to decide how we are going to do it. Once that is laid out then we go into the parts. We break the course down into individual units. We generally come up with one unit, preferably not the first or last one and we go through and design one entire lesson. The structure will be laid out.

For example with what you saw this morning, you have for each particular unit an introduction, objectives, assignments, class notes, a quiz, a test, whatever. Once that information has been identified and we like it, we will actually do a couple of tests. We'll put a module together and we will practice with it to see if it is

going to fly. If it works we use that template for the rest of the course. Everything else goes into those parts.

Once everything is in the system, if it's a Internet based course or a Top Class course or a Web based course or video or CD ROM, once the first one is done we go ahead and complete on the first pass all the content. The second pass is all the graphics. The third pass is to make sure all the tests and things are set. The fourth pass is to clean anything up that we missed before. At the end of these there is some testing and things that happen. Finally by about the fourth or fifth pass the course is pretty much set and ready to go. Then the instructional technology part is complete.

Then we go back to the curriculum side. Everything that's been put together for the instructional technology side has also been electronically formatted to complete the curriculum guides. The curriculum guide consists of several things. Each of the individual lessons is broken down. There is a matrix that has the entire course laid out. It has an overview. Individual lessons are put in. The instructors put in all of their notes and how they are going to do certain things, how they are going to run the class each week. All of the tests are created.

Everything is all packaged. The curriculum is then finished and gets printed and bound. The CDs are burned from the material. Assessment is already done. The project is ready to go and it's in the can.

Come Fall when the course is ready to go, the students are enrolled and I set up the accounts. What I am trying to do throughout the semester is to sit down with them, not from an evaluation standpoint but just to see how the course is going. I make notes of what we have to do in the future if we do a similar course.

For example, this particular process or group discussion, the way we designed it, didn't quite fly. It didn't quite work right. We need to kind of tweak it the others or something like that. Preferably once we have one course that is knocked, if we are going to do another course in the same subject area, we will go back to that and use it as a template. That's kind of the process in a nutshell. The amount of time it takes for a course depends on the instructor and how involved they want to get in the project. The result is that you get three components. You have curriculum with an instructor's guide built into it so that you hand that to another individual if you were to teach the course exactly as it is designed i.e.: you have to have this textbook, this set of video tapes, whatever. You could duplicate that course. There is a CD that has all the instructional technology there.

If it's a video course you have your PowerPoint slides to go along with your lecture. If it's a Web based course the Web site is all on CD. The discussion groups, structure and everything else is set but there is no discussions because nothing has happened yet. Then the assessment is those trigger points in the course to

go back and do a formative evaluation. What I would like to see on your side of things is that at the end of the course I would like you to put together a summative evaluation of the process. I am requesting in a project before they teach the course that they do a project report that includes what they originally proposed, what they changed and why. What I'd like to see on your end is now you've taught the course once, what would you do different. What are the things that worked? What are the things that didn't work?

Then what we would do is to take that information and it becomes a resource base for other folks who are trying to do similar courses. With your assistance, I'd like to take a look at how the students matching up to on-line courses. How are things working? What are some of the things that we could design in the course that would improve student achievement?

Evaluator: Up to now everything has been preamble – equipment installation. The teachers have been working without that type of feedback. Vicki has taught several times. Who else has taught several times?

Darrin Cheney: For the Star Schools courses, Vicki is the only one I know of that has actually taught twice. Nancy Larsen taught her anatomy course last Fall. I think some of the nursing courses started this spring.

Typically when they go to delivery on that mode I really don't keep as much in tune as when I'm administering the Web side of things. You asked me what my philosophy was and how I have that built into the courses. I like to rely on the instructors as content experts. That's what they do best. Since there are just a few of us that are doing this we can't do it all, so the instructors do pick up some of the technical pieces but not all of it. I want them to know and become familiar enough of what environment they are teaching in, that they are in control. On a Web site course if a student is having a problem, the student contacts the instructor first for support. If the instructor can't support that student then I will support until we get big enough that we have to come up with some other support structure.

Evaluator: Do you see that happening?

Darrin Cheney: Definitely. Content is number one. Number two is a whole approach. I try to move the instructor away from being a lecturer to being a facilitator. It's the only way this is going to work. The students have to take responsibility for their learning more so than the instructor takes responsibility for the students' learning. That insures life long learning. You build those components in. I do believe in an open entry, open exit type of course however in order to get faculty where they are comfortable for that environment we are kind of a closed entry, closed exit approach.

You take a traditional course and you try to feed it over fifteen weeks and start with that structure first. Eventually we will be able to convert it into an open entry, open exit system. For right now to get them to transition from face to face to interactive there are too many other things going on to have that much of a radical change.

Evaluator: Based upon the people with whom you are working, how long do you think it will take? When would you start pushing for that?

Darrin Cheney: Year four or year five of the grant. Ideally what I would like to do when the courses are done say on the Web side of things is go ahead and review after the first year and make modifications. Let the thing run two or three years and then go back and see what we want to recreate from there. The other thing that you have to consider, too, is that besides the students you have to make some changes. The students also have to get adjusted to the course and that's a challenge. I'll put together a student packet and a student Web site. These are instructions on how to use whatever delivery system they want. Likewise on the video side we'll also do some of that. The instructors, to have full control of their course, need to handle the orientation, introduction and those types of things. Likewise, my experience from Illinois is that if you try to dump that onto a support team of one or two you

are going to kill your champions real quick. Also the teachers need to be in control of all of that. It's important.

There will be some materials for the students. It will take a student for the first time out that has never done this a couple of weeks to get accustomed to it. One of the things that Vicki is finding now is that the students absolutely love the way the courses are being taught. They didn't say that the first three or four weeks but they are saying it now which is typical from my experience so we are on track there.

The idea is that it is a learning curve not only for the institution; it's a learning curve for the teachers and for the students. Once they become accustomed to it things are going to move a lot quicker. I like to look at multi modal delivery. If it's a video course I would like to make sure that we have some sort of Web component built into it. If nothing else there's a syllabus or other course support materials somewhere. I would prefer a discussion group as well. For an English 1010 class we are designing for Fall it will be delivered both on the Internet and on interactive video. We'll use components of both. That was originally put in and paid for up front to say look, there's two courses you are going to design. Even though they are the same course, you are going to have two sets of materials, one for video and one for Web. Parts of them will be used together on the video side and it will stand-alone on the Web site.

Evaluator: As we come in to do the evaluation on that will we be able to compare them?

Darrin Cheney: Yes, in fact I believe he is also teaching a face to face course on campus. It will be interesting to do that. I'm trying to incorporate as many learning styles, opportunities and technologies as I can for these classes.

Lander Valley High School

Darrin Cheney, Instructional Technologist

Sonja Matthews, Secretary and Graphics Technician

4/13/99

Evaluator: Do you know when this classroom will be completed?

Sonja Matthews: They are receiving the signal and they can send the signal back but we had to change a card in the codec. We're waiting for the codec to come back. Without the codec nothing works or it probably shouldn't work. It might turn on the monitors but that's about it. They are supposed to put some acoustical tiles on the wall from what I understand. Other than that, put some chairs in here and they are done.

Evaluator: When do the first classes start here?

Darrin Cheney: There is some discussion regarding some courses in the Fall. One in particular I believe happens to be a math course. We're still under negotiation and still talking about what we want.

Evaluator: Do you know what the chairs are supposed to look like?

Darrin Cheney:

Everything is identical to the other rooms. This is a nice size room. It would be nice with round tables and movable chairs especially where you have microphones in the ceiling.

En Route To St. Stephens Indian School

Darrin Cheney, Instructional Technologist

Sonja Matthews, Secretary and Graphics Technician

Central Wyoming College

4/13/99

Darrin Cheney: They are all excited. The folks from here came in. We did a session and invited teachers from all over to come in and brainstorm with us on how to use the system. We had a good turnout. We had some administrators that showed up but the teachers prevailed. Folks from here requested another session. They are already talking to St. Stephens about things that they want to use the system for this summer.

Darrin Cheney: Which tribe is here, Sonja?

Sonja Matthews: I think it is Shoshoni.

Darrin Cheney: There is also an Arapahoe school.

Sonja Matthews:

This is kind of mixed. They've got Shoshoni and Arapahoe. St. Stephens is kind of a mixed culture which is why I think she said when the students graduate they have several options. That is also why they want to share because each school does have a little bit of every mix.

Darrin Cheney, Instructional Technologist

Sonja Matthews, Secretary and Graphics Technician

Central Wyoming College

4/13/99

Darrin Cheney: I have about two other things scheduled right now for Saint Stephens. I have a class on Thursday nights and that includes some of their folks along with others. We also have a weeklong intensive teacher-training coming up. Word travels fast in this valley so the good stuff that you do gets out real fast. I'm going to have Sonja doing multimedia this summer. We're going to do a couple of different things. We're going to focus a little bit more on training and development. Eventually I'd like to get our teachers trained so that they can do some of the training.

Evaluator: Is there one person in nursing that could be considered to be the lead technical person?

Darrin Cheney: They are all at about the same level. They are a little bit farther ahead than the rest of the campus. They decided to be adventurous and take the risks by being early adopters. Last year when I interviewed here I had one session that I answered any questions that they might ask. A lot of questions came from their division. They were good ones, too.

Sonja Matthews: The whole staff comes together and discusses what's coming up so we are all well informed of who is where, what they are working on and what they need help with.

Darrin Cheney: We're all taking it as a team approach. If Bruce needs something we will break away and give him a hand. Likewise if I need something he'll do the same.

Sonja Matthews: We are fortunate in that aspect. We've got a great team.

Evaluator: Do we have anything scheduled now?

Sonja Matthews: No we are just going to look at those two projects that have been turned in already.

St. Stephens Indian School
Bob Monroe, Studio Technician

4/13/99

Sonja Matthews: They're working on covering the lights.

Darrin Cheney: This has changed just a little bit since the last time I saw it.
The last time I saw it was a year ago. It was still the Home
Economics room.

Bob Monroe: Those are the boxes from the laptops that we got for our
staff.

Evaluator: How many did you buy?

Bob Monroe: Forty laptops. Each one of them is full multimedia
including video capture and video input/output along with the
speaker output. They are also stereo so you can run your audio
out if you want to. They are using the new flat technology for the
monitors. They are 15 inch viewable. He gave us really good
monitors. He built in CD-ROM and floppy. The ROMs are
removable so we can switch to DVD if need be.

Evaluator: Did you get any DVDs?

Bob Monroe: No we ran out of budget but we are getting five next year.

Darrin Cheney: I worked with a couple of your teachers that brought them in for those training sessions.

Bob Monroe: It's pretty self-sufficient. We got an excellent deal on them.

Evaluator: How much were they?

Bob Monroe: We got them at \$1,600 each. They are the Key Data, Keynote 8800s. It comes with two USB ports along with all the regular standard stuff. It's doesn't have a built in modem. It's a PC MCIA. It was included in the price. It included both our network PC MCIA card and a 56K modem. It's not V90 but it's fine.

Evaluator: What is the real capacity of the lines?

Bob Monroe: They are running on average 26.4. We have a really good working relationship with the technical support at Key Data. We did have a couple of incidents but those were user related.

Evaluator: Are you giving the teachers training on how to use them?

Bob Monroe:

Oh yes. First of all we are kind of being sneaky about it and we are getting them hooked on the Internet. In doing so we are also exposing them to the different things through suite software like Microsoft Office 97. The different features that it comes standard with include Windows 98. Since our desktops are Windows 95 they can see the differences between 95 and 98. We're allowing them to install their own software so they get the feel for that.

They are getting used to working with technical support and we are literally slowly hand holding them through the development process of getting used to working in a technologically enhanced classroom.

I don't remember the title of the grant that we got this through but we knew from the start that this would be for our faculty. That was the initial plan. If we are going to have these instructors work with our students on a computer they need to be familiar enough with them to have the air of authority for their students. For this first year and over the summer we are going to be giving them everything we know how to do. That would be my associate, Luke McComy and me. We are giving them the latest tech available as far as multimedia goes, importing and exporting graphics and making their own videos. We are trying to get them used to using the system and it's different features.

Evaluator:

Are they starting to use it in their classes?

Bob Monroe: Oh yes. We just recently acquired a scanner for our monitoring station that we have in our office. It's the only one in this building that is pre-set for the Windows machines. We have already got a line of people wanting to get in on it.

Evaluator: Do the forty laptops take care of every teacher?

Bob Monroe: No. We have a total staff of 79 but that includes everybody. That includes the maintenance staff and they are not going to be issued laptops. I believe there were 35 distributed to the actual teaching staff. The rest go to administration and the technical support team. So far we haven't had any major blowout anywhere. There was an issue where one teacher felt left out so we have a trade off between that one and another instructor. They trade off weeks. Hopefully they will maintain that until next year when another budget comes through. Then we can get the rest. All of them will have equal status as far as that goes.

Evaluator: Are there any courses that you are going to teach with any of the schools that are on this system?

Bob Monroe: I'm not really certain. Right now our focus has been getting it set up. For Luke and me, it's getting the rest of the school set up. Jerry McDonald is the one who is handling that.

I'm hoping that they will be able to set up the re-certification courses that are required for the faculty. There was some talk about linking up with the Smithsonian through another grant. I think they were going to use this area for that but I'm not absolutely certain. That would have provided some visual access, too. They are talking about getting some other courses at the college for the teaching staff and for maybe setting us up as an outreach for the local community. I'm not sure. This is all what I have heard from other people.

Fort Washakie Indian School

Robin Tillman, Instructor

4/13/99

Evaluator: Will you be teaching in this classroom?

Robin Tillman: I'll probably be helping. I'm not teaching so much anymore. I'm now the technician. I do everything now.

Evaluator: Is this a new job? Have you been here before?

Robin Tillman: I've been here for seven years.

Evaluator: What classes do you think will be taught out of this classroom?

Robin Tillman: We don't really have anything planned for this school year. This summer the Native Visions program is going to hold some of their activities here. That's where the pro athletes come and this year they should have about 280 students from sixth grade on up. They hold classes on life skills. They try to get them all on the Internet and they have sports camps. St. Stephens is the other site where they are going to be.

Darrin Cheney: You will keep us posted on that?

Robin Tillman: Yes. I had some flyers with me. I don't know what happened to them.

Darrin Cheney: It looks like you picked this up pretty quick.

Robin Tillman: I was here Saturday cleaning all day. I had planned to get all the stuff off the bookshelves too but I didn't have enough boxes.

Darrin Cheney: As you start doing more and more things in here it will come real quick.

Robin Tillman: Some of our furniture did come but we didn't have time to get it set up.

Evaluator: Why are the mics in this room different from all of the others?

Sonja Matthews: That is because the mics in the other rooms hang down but the students still can't touch them. If they use the hanging mikes in here they are afraid the students will be jumping up and hitting them so we just have the buttons.

Darrin Cheney, Instructional Technologist

Central Wyoming College

4/13/99

Darrin Cheney: This particular project is from Jeff Bradley at Fort Washakie. It uses eighth grade science performance standards. There is instructional technology that goes along with this. There is a CD that has all the materials.

This is the curriculum. There are three parts of a project, the curriculum, instructional technology and assessment. The way things are set up everything is integrated. Here's the biography from the instructor. Then there are so many different units that are set up. The media that goes along with it on the CD happens to have either the Power Point or whatever they have. The purpose of doing the projects this way is that essentially you can replicate the project entirely off of the CD.

Evaluator: This is a printout of the CD.

Darrin Cheney: Right. I'm requiring that all of the curriculum and materials and such also be contained on the CD so that the CD will stand-alone. I wanted the books designed this way so you could go

through them and it would make sense. Seeing that this is the first one that came through in the format I think it's working well. If you were to go through and read the overview and how things are set up it explains how things are done. We require two copies. One we keep on file and one is for the Department of Education. That's the first work.

The second project is from Utah. I keep getting fancier. This is what we do out of here. We buy laser labels - three to a sheet. We run them through a laser printer with software to make it work. This project is an American National Government course. The way this course is set up is that there is a series of videotapes that they watch. Then all of the supporting lecture materials are here.

Here's the instructor. This will kind of walk you through how things are set up. This is his letter about how everything works, where to be able to get the textbook that he has specified. This is eighth grade. This is higher ed. Here is his project assessment. These are the questions that he will ask the students. Here are the materials that are required for his course. He shows a lot of media so the students can go ahead and watch the tapes. Here is his syllabus. For each particular one the students get a copy of this and they work on through each part.

Evaluator:

Did you spend a lot of time working with him ?

Darrin Cheney:

Just initially. I met him after the project was tentatively approved. Heather Young is the person from Utah who works with them. The CD happens to be PowerPoint material as well as material from the book. There is something like 30 lessons. The interesting thing on his project that I came across when I first saw it is that there are a couple of images on here that I didn't quite know where they came from. I raised the question and come to find out that they were from WWW.corbus.com and they were copyrighted. In fact when I called the company they said sure we'll make a deal for you, \$1000 per image. I said well we'll find some other media. The word has gone out that you can't just use any image that you find on the Internet.

Bruce Fiordalisi, Control Center Supervisor

STAR Schools

Mountain Plains

7/6/99

Evaluator: Can you give me an update on how the project has progressed?

Bruce Fiordalisi: Four schools are done. We're still doing testing with the rooms. The schools are out for the summer. Darrin Cheney and I just did thirty days of teacher training.

Evaluator: Are those teachers primarily the ones in your service area?

Bruce Fiordalisi: More primarily with Darrin. I had them for a half day then they came down and used the room for another half day to do their lessons. Darrin essentially did beginning course redesign, how to use PowerPoint, how to deliver in the room, those types of things.

They can come down here and I would update them on where we're at on the project. Then they would do their particular lesson that they were working on that week. Everybody came in

for five days so it was eight people per week for five days for four weeks.

We could do it all summer and they would keep coming in. There were just a lot of people who enjoyed it. We're finding that the schools were really pretty much still in their infancy in terms of the where with-all in even doing anything with the computers for presentations and course development. I think it was a big plus for us.

Evaluator: How do feel that the project is progressing now?

Bruce Fiordalisi: Personally, the way I'm looking at it right now, is these are seeds that are being planted. I probably will not see much of a benefit until the beginning of next year on this. Just because I think the curricula are pretty much in place for the schools right now and what we will be doing with STARS is showing them what we will be delivering from the CWC campus and the types of resources they will have access to.

I think that this next quarter will be very much how they implement the professional development into their programs or into their own curricula and then see what they are doing. I think their big concern right now is access. Who's going to control? Who do I go to? We're still working that out but I think if all goes well in terms of how we implement, I think their access will be extremely easy. Now physically bringing their classes in from

elementary schools over to our classrooms, that's still going to be a little cumbersome.

Evaluator: Why would they bring students to your classrooms?

Bruce Fiordalisi: Let's say Lander's Elementary or junior high science class wanted to do a distance class, I still look at this from a logistic standpoint, how do you give access to the K-8? Everybody has located their room in different areas in these first four schools. My concern is, is it out of sight out of mind? Will a teacher participate if the room isn't right down the hall?

We expect principals or superintendents to keep an open dialogue for the entire constituency. We don't see a computer guru taking over the distance room and turn it into his own fort. This is a universal project so that everybody has access to it. It goes back into default whenever you're done with it.

We're implementing a voice information and Fax-on-Demand system that will be available to the schools. It will be done in the next 30 or 45 days. We're working on developing a new letter too, so we're trying to get a multi-level communication system keeping them informed on what is being developed, what we're doing, where the project is and who they can call.

Evaluator: What type of information would be available through the Fax-on-Demand system.

Bruce Fiordalisi: FAQ's (frequently asked questions), programming for the quarter, I'm not ready to implement it but I'm pretty solid on where we're going to get our information system that will be going on air. I'm still waiting to see the Internet link. I want one type of system that's going to put out a multi-information display. When we input that this class is going to be taught distance, it's going to go to the Web and it's going to go to the air at the same time.

Evaluator: Are you working with people from the partner states?

Bruce Fiordalisi: We had a couple come in from Colorado. Darrin took the first three days then they came down and spent a half day with me and then he and I went into the room and gave them feedback about delivering their lesson in the room. Then he took them back and did whatever they wanted. Most of them wanted to do something with setting up Web pages. He did some introductory Front Page (software application) type instruction. Some wanted to continue building their media presentation system with PowerPoint.

Evaluator: What are the plans to deliver the signal to the partner states.

Bruce Fiordalisi: Harris should be back here by mid month. Harris is our contractor developing our path. He will be back here taking the

signal to the east and to the west and by the end of the year we'll have our signal at the other areas. We still are waiting for some movement from the schools in terms of them purchasing their rooms. Wind River contacted me two weeks ago which is another school here in Riverton which is close to the college. They're going to move forward and we're going to start installing their classroom next month. Now we'll be up to five.

Jackson, is still deliberating probably because of the simultaneous implementation of the Wyoming Quality Network. Because the additional people now coming online have to purchase all of their equipment unlike the first four where there was a partial match. Jackson is over budget on their high school so we're concerned about moving right now.

We've got to get programming on the air; we've got to start the activity with the classrooms. I think we've had extremely favorable response with the classrooms but right now they're void until there is activity in those rooms.

Bruce Fiordalisi: Right now, the way we've got it projected, and it may come down a little bit because we are making some changes, but right now for us to go from here to there and back it's \$140,000.

Evaluator: Does that include the microwave equipment?

Bruce Fiordalisi: We're not charging them for the microwave equipment. We are charging them for the connectivity of the digital signal. We're still looking at those specs to improve it and to see if we can put additional pressures on our suppliers to give us more of a discount. We're in the process of doing that right now.

Evaluator: What process is being made with the signals to the partner states?

Bruce Fiordalisi: We're planning participation to get Cortez hooked with Blanding. I think we're still investigating how we're going to do that. There's been talk about microwave and fiber. I don't have a lot of participation in that right now because of the focus being on the Wyoming constituency right now.

There have been brief discussions with NASA to see how we would be doing that. If it would anything, it would be on demand. We are still investigating.

At this stage right now, we have added our satellite downlink. We've got two downlinks now in the control room. We've got ALS (PBS Adult Learning Service) and PBS on full-time and we've got a steerable C and Ku-band system. Our ability to do one-way video and two-way audio is now much closer but I haven't had any discussions with anybody at the campuses yet. I haven't been to the other campuses to see what they wanted and what we are going to do there.

Evaluator: Is there any ability to connect between Riverton and Blanding?

Bruce Fiordalisi: I don't believe that they have a way to up-link and I know we don't have the ability to uplink. We've had some discussions about that technology. We could with our state connection, the H.320 system, I'm not sure if they have got compressed video down at Blanding or not. I'm not sure is Blanding is hooked up to Utah EdNet...

Evaluator: It is.

Bruce Fiordalisi: Is it? On whether they have H320 down there or not. Because at that point, we could make connection.

I think there is going to be a 24-7 path between Cortez and Blanding. And then I think Blanding goes to Price, Price is tied into Utah EdNet. The other area, Arizona, I don't know how that is coming into it.

The way I see it right now, unless some big things jog, we could put in an uplink activity. We could make connectivity with Internet technology but for full motion video the best that we could see as interactive now is one-way video and two-way audio. If we're going that way, then we have to with a digital H320 system. I'm not sure if we've made that decision yet.

The longer we wait the smarter we're going to be on this because there is a tremendous shift going on in terms of technologies and multiple signal sending with the same type of bandwidth and there are a lot of things that we could be looking at.

The bottom line is the student and what they have got to their house. We could put all the stuff here on an Internet on campus, but the bottom line is if we are hitting our student off-campus in a town with a phone system that isn't up to par. The baseline is still going to be a 28.8 or a 33.6 connectivity. That's the only thing that worries me with going with the streaming type. But there are definitely shifts of trends to delivering that.

We're just moving forward to expand in our region. I don't really anticipate getting involved with the partner states connectivity until the beginning or spring 2000. We anticipate having Wyoming done by the end of this year. We want to get the connectivity into the classrooms and all of the schools finished.

We're testing on our first four schools and they're moving along fine. Darrin is working on putting an online program together to use the network for training purposes as well as going to every one of the schools and working with the teachers. We're looking at putting on a formal program but we're waiting for feedback from the schools whether they would like that on Thursdays at three or Fridays or on Wednesday at 3.30 for maybe an hour where we do formal training development every week.

Evaluator: How are the teachers doing at the community college?

Bruce Fiordalisi: They're doing well. Unless they were on contract this summer, they're all gone. In August, we anticipate that we have several that have used the facilities. Now they haven't taught distance yet and we are going to put out two interactive classes for concurrent to the schools. The others are pretty much going to be broadcast. They will be using the rooms but they won't be really teaching distance because of the time it has taken for the high schools to plug in for the curriculum change. Until they see it they're not going to make the paper change.

Evaluator: The community college teachers will be teaching into those classrooms but they will be teaching their normal community college classes?

Bruce Fiordalisi: That's right. We have two and we haven't gotten their feedback yet. We have two instructors that are going to be teaching interactive but we don't know who is signing up to participate in those. If nobody signs up, they won't be teaching interactive. We are putting their courses into the distance classrooms. My goal this Fall is to flood the air with options, classes that are occurring here, and continuing the dialogue with the schools to start their process.

We're going to be doing the programming with the ALS, we're pulling down telecourses, doing the live classes and satellite conferences to feed those into the distance learning classrooms. We anticipate that the schools will be seeing what's occurring in the room. As they have time to go down and participate. We are going to welcome that.

What we have found is that these schools are extremely starved. There's no doubt that the students are further advanced than the teachers are in using the technology. The system is a progressive tool and we'll be there to support the teachers who need it. They'll be fine.

My concern is the ability for us to be there for newly hired teachers when we move on to other things. We still need to provide the support structure for them. The turnover issue in schools is a constant. We did all this development for St. Stevens and then we lost nearly all of the people.

We still have to break down those technophobe issues that are prevalent with a lot of teachers.

There is such a lack of infrastructure in the rural areas. We had the Microsoft Conference in May. This was an open invitation to all Wyoming high schools and it was a great opportunity for us because we got a lot of students who aren't on our network and some of the teachers who are on our network to come. We did two days of demonstrations. We actually did a live demo between

Riverton and us. Jackson came down with their multimedia instructor and a number of his students.

All of the schools which will eventually be on our network, were here with their students.