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ABSTRACT

This study surveyed high school students, teachers, and administrators of rural schools in Utah to determine what courses and inservice training offerings these groups wish to see made available via telecommunications. Delivery systems for such courses would include one or more of the following elements: broadcast media, audio teleconferencing, video teleconferencing, electronic blackboard, slow-scan-video, electronic mail or computer teleconferencing, and telefax. Site visits were made to three rural high schools, from which case studies were developed to provide some idea of the current distance education offerings. The following observations were made from a survey of the questionnaire responses: (1) the provision of certain computer courses via telecommunications is seen as a promising direction by all groups surveyed; (2) there is a consensus among teachers and administrators that the most desirable courses for offering by telecommunications delivery are advanced placement offerings in the math and science areas; and (3) the findings show a certain amount of insecurity on the part of teachers in using telecourses. It is felt that this insecurity can be overcome by use of telecommunications for inservice training and giving teachers direct experience with telecourses. Appendix A provides summaries of the three case studies; Appendix B contains sample questionnaires and accompanying letters; and Appendices C-E present the data from each of the three groups surveyed--teachers, administrators, and students. (EW)

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Statewide Telecourse Survey:

Teacher, Adminstrators, and Students

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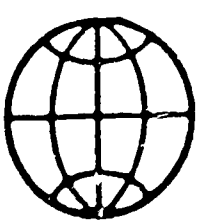

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Statewide Telecourse Survey:

Teachers, Administrators & Students

Conducted for the

Central Utah Educational Services Center
545 West 100 North
Richfield, Utah 84701

by

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for

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May 11, 1987

Statewide Telecourse Survey:

Techers, Administrators and Students

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The opinions expressed are those of the authors, who take full responsibility for the study.

Logan, Utah
May 11, 1987

EXECUTIVE SUMMARY

The use of telecommunications in teaching can be considered part of what Eric Ashby has termed "The Fourth Revolution", where new media forms transform the educational experience. A variety of options are available, to include audio and video teleconferencing, slow-scan video and computer networking. The State of Utan has funded a variety of experimental telelearning projects.

This study surveyed teachers, administrators and students in rural Utah high schools. In addition, three site visits were made.

Conclusions were as follows:

1) The provision of certain computer courses via telecommunication is seen as a promising direction by all groups surveyed. Specifically, the advanced computer science courses (including A.P.) and computer applications courses are ranked highly by all groups.

2) There is a concensus among teachers and administrators that the most desirable courses for offering by telecommunication delivery are advanced offerings in math and science areas. Calculus, Physics, A.P. Physics, A.P. Biology, and A.P. Chemistry are examples of these.

3) Some indications of insecurity on the part of teachers can be inferred from the findings. For example, only twenty-two percent of teachers indicate a personal interest in teaching via telecommunication. This insecurity often translates into skepticism that such systems can work. Use of telecommunication for teacher inservice and giving direct experience in pre-service and inservice may work to dispel this reluctance of teachers.

4) It is clear that the number, variety, and extent of exposure by all groups to telecourses is growing.

It is hoped that the detailed findings of the study can be translated into future course planning.

I. INTRODUCTION

Eric Ashby, in a widely distributed report for the Carnegie Commission for Higher Education (1964), has cited the transforming power of the "Fourth Revolution", that of media and technology in education. Moving from the use of teachers (the first revolution), through the use of writing (the 2nd), through the advent of moveable type and printing (the 3rd), education now has at its disposal powerful media forms capable of transforming the educational experience. A prominent example of this form of learning is now available through telecommunications. These types of courses, and the demand for them, are the focus of this study.

Terminology

The variety of technologies available for telecourses complicates their definition. However, in its simplest terms, a "telecourse" is a course conducted with teacher and learner operating in different locations; "telelearning" is learning occurring with the learner at a distance from the teacher; and at least one generic title for this movement is "distance education".

The following is a partial listing of elements of a system for "telecourse" delivery. While no one system would typically include all of these elements, a workable system would often include more than one.

Broadcast media -- using regular television or radio programs to deliver course content.

Audio Teleconferencing -- transmitting instruction over telephone lines or radio, usually with a "speaker telephone" on each end, as a sort of "conference" telephone call.

Video Teleconferencing -- transmitting instruction using full-motion video and audio, often in Utah over a "microwave" system. This can be one-way (teacher-to-student) or two-way (teacher-to-student and student-to-teacher)

Electronic Blackboard -- a device allowing writing on a board to be transmitted to a television screen at another site.

Slow-Scan Video -- transmitting a still-frame image from one site to another, with digitized message sent usually over telephone lines.

Electronic Mail or Computer Teleconferencing -- message transmitted from one computer terminal or microcomputer to another site, usually over telephone data lines.

Telefax -- a method of sending the information from a printed page to another location.

In addition to the various telecommunication devices suggested above, it is often feasible to use a variety of packaged media forms, sent via postal or delivery service, to remote locations. Thus, a distance learning project might make use of a videocassette, an audiocassette, or a microcomputer program sent by mail to each participating remote site. An increasing variety of course delivery strategies is becoming possible at varying price ranges. Increasingly, more than price range or technical hardware constraints, the use of these devices is limited by the awareness, ingenuity and willingness of the user to experiment.

The State of Utah has funded these sorts of projects under the category of productivity grants since 1983. Previous studies (e.g. Williams

and Van Monfrans, 1987) have dealt with existing projects and with needs assessment for telecourse work (Eastmond and Stoddard, 1986). This study attempts to go one step further, to identify specific course offerings with promise.

Review of Literature

Previous studies dealing with telelearning programs within the State of Utah have given specific recommendations for the planning and implementation of technology-based learning systems.

A major rationale for such programs in the literature for the use of telelearning systems is the issue of equity (Williams, 1987, p.5). The widespread increase of technology makes available to rural schools learning systems that were not previously available. Class offerings that were available via telelearning activities were judged to have increased productivity through greater flexibility in curriculum offerings, without increased staff. It is recognized that there are costs added to the telelearning process, but precise cost analysis has not been undertaken to date (Williams, et.al., 1987).

A variety of teaching methods are being used by telelearning projects around the country. Lecturing is used most often, with little research being done on methods that increase the potential of the technology through innovative strategies. Of the content being taught, little is known on how it is organized or formulated. The literature is also vague on the specific forms of technology that demonstrate best results. Finally, reports on the effectiveness of technological utilization are minimal at best (Van Monfrans and Quinn, 1986; Shaver, 1986).

Statewide planning is an area of concern in many studies. The development of a systematic program to educate pre-service and in-service teachers is vital for any implementation success. Included in systematic planning are thorough needs assessments, adequate inservice training, attention to issues of convenience and scheduling, and efficient time use in order to increase student/teacher interactions. Finally, under the umbrella of statewide planning, cooperative units of universities, business and industry must be tapped in order to bring about telelearning's potential (Eastmond and Stoddard, 1986).

The students that usually take advantage of telelearning classes have some basic characteristics. Those most likely to succeed are characterized as mature, self-disciplined, and self-motivated. The students are generally older than the mean age in high school, and the majority of telelearning research is done with adult learners (Williams, 1987).

Many technological forms are used, to include microwave links, satellite transmissions, one-way telephone audio, and two-way telephone audio and video. Interactive computers have also been used. Research examining optimal utilization of various technological forms has not been done systematically.

Overall, the literature recommends continued study of telelearning strategies. More needs to be studied in the areas of student characteristics, content, and utilization of technologies in order to establish guiding criteria for judging the success of telelearning activities (Williams, et.al. 1987).

II. METHODS

This study surveyed teachers, administrators, and students of rural schools in Utah using written questionnaires. In addition, site visits were made to three rural high schools, from which case studies were written up.

Activities

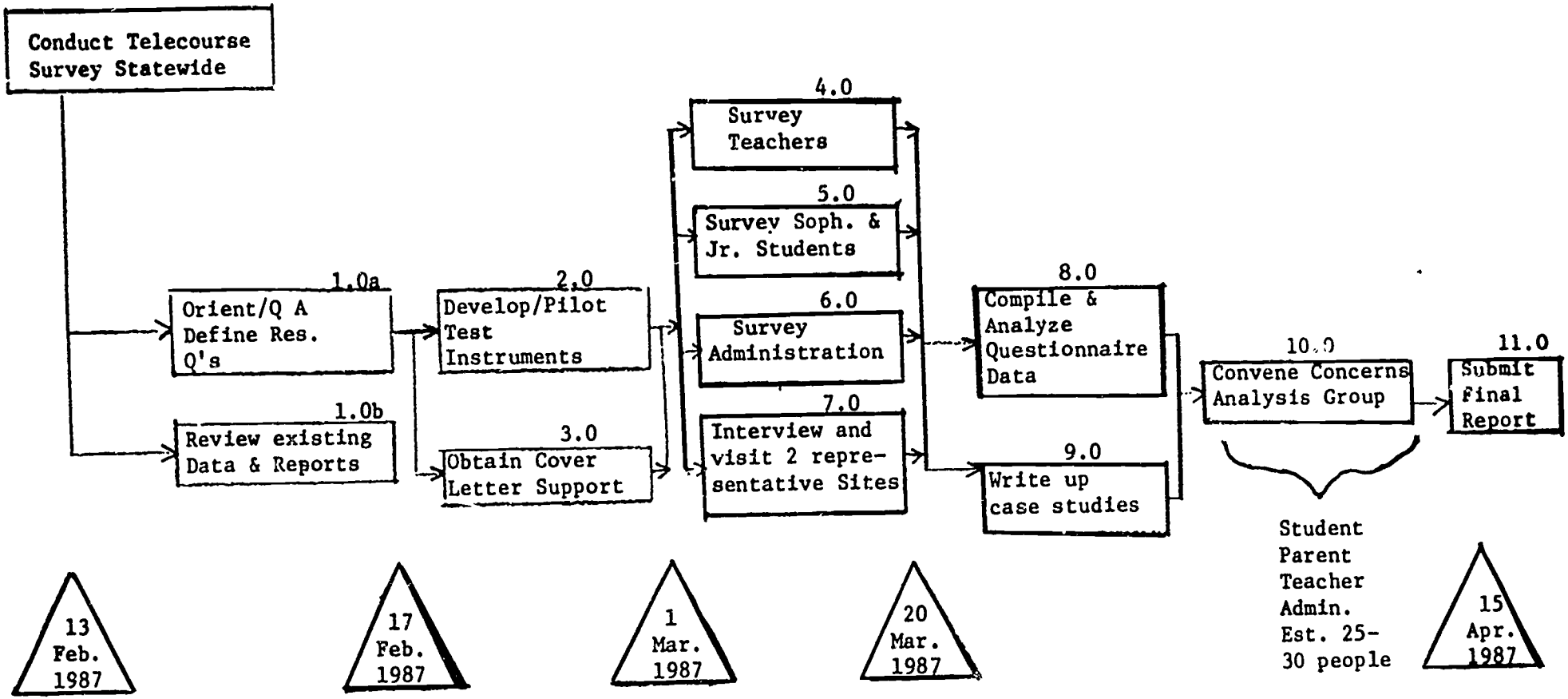
The overall direction for the study was laid out in a meeting of the Quality Assurance Committee at the State Office of Education in Salt Lake City on Feb. 20, 1987. Members of the Committee were Drs. Lyle Wright and Bill Cowan from the State Office of Education, Dr. Jack Burr, Director of the Central Utah Educational Services office (CUES), and Dr. Kent Ellertson, Director of the Northern Utah Educational Services office (NUES).

This study began in mid-February and was concluded in mid-May, 1987. Figure 1 shows activities as proposed.

The purpose of the study was to survey students, faculty and administrators in rural Utah high schools to determine what courses were needed. In addition to regular high school courses, those carrying Advanced Placement status for university credit were to be considered. Those courses which could be offered via telecommunication were to be identified. In addition, potential inservice offerings were to be identified.

Following the initial planning, existing literature was reviewed, questionnaires developed and pilot tested, and cover letters of support were obtained. After mailing out the questionnaires in packets to respective schools and to the superintendents of those schools, a set of three site visits was

Figure 1: Plan Activity Diagram to Conduct Statewide Telecourse Survey



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conducted. The questionnaires were key-punched and analyzed statistically using the BMDP 2D computer package 1987 program version. The results have been analyzed further, written up, and are now being submitted in the final report.

Instruments.

Three questionnaires were used in this study: one for teachers another for administrators, and another for students. All three were adapted directly from questionnaires used in each of the two previous years in the NUES area by Dr. Kent Ellertson. Draft instruments were circulated to members of the Quality Assurance Committee via "E-Mail", Utah's electronic mail system, on March 6th with finalized copies sent out March 14th.

In addition to the cover letter of instructions, each packet contained letters of endorsement from Dr. Jack Burr, Director of CUES, and Dr. James Moss, State Superintendent of Public Instruction. Copies of the instruments, with accompanying letters, are shown in Appendix B.

The Sample

Packets of materials were sent to all 27 rural high schools, requesting that the principal, every other teacher, and every twelfth student in the junior and sophomore classes fill out a questionnaire. Procedures for systematic random sampling were spelled out in the instructions and, based upon the three case study follow-up visits, appear to have been generally followed. In addition, the researchers sent administrator questionnaires to all 27 superintendants of these districts. A followup letter went out March 25th with

followup phone calls to principals made by directors of the various Regional Service Centers (NUES, CUES, etc.). Results were sent to the State Board of Education, Division of Planning for data coding and statistical analysis on April 3rd and return April 27th. A batch of questionnaires received from one school two weeks late could not be included in the quantitative analysis, but was included in the comments section.

III. Results

The return rate of questionnaires is summarized in Table 1 below. The numbers given do not include the batch received late.

Table 1: Return Rate of Questionnaires by Category of Respondent

	Questionnaires Mailed	Questionnaires Returned	Less Unusable	Usable Question-naires	Percent Returned Usable
Administrators	79	53	0	53	67
Teachers	477	223	4	219	46
Students	731	459	106	353	48

As was mentioned above, a variety of follow-up techniques helped boost numbers in the sample.

Level of Confidence

Assuming random selection, the numbers sampled allow conclusions to be drawn with a reasonably high level of accuracy. For an item where opinion is divided exactly in half, the observed value from the sample would fall within

six (6) percentage points of the population value for teachers and students and within five (5) percentage points for administrators nineteen times out of twenty ($p<.05$)(Clelland, 1968, p.342). Thus, the large sample size relative to the total population allows this level of confidence in the results.

Overall Findings

The results from the questionnaires are provided in detailed fashion in Appendices C and D. The paragraphs below will ateempt to portray overall findings from compiled tables. The reader is invited to peruse the more detailed data sections.

Table 2 shows the rankings of course offerings by groups: administrators, teachers and students. These rankings are derived from question numbers 1 and 2 on the questionnaires and indicate (1) for administrators, the rating scale summaries and the ratings of criticality; (2) the teacher rating scale summaries; and (3) the student rating scale and indicated levels of interest.

To summarize findings briefly from these rankings, it should be noted that two classes are accepted across all three groups as high priority items. These are items #7 and 8, "Advanced Computer Science" and "Computer Applications". All groups, across all measures rated these in their top nine rankings. For teachers, the computer applications class ranked number one. The A.P. Computer Science course (Item #21) received similarly high ratings across this time in all groups. Conclusions about other items are more mixed. It appears that teachers and administrators are more alike in rating the Advanced

Table 2: Rankings of Course Offerings by Group: Rating Scale and Criticality Index

#Item	Administrator Rating n=53	Crit.	Teacher Rating n=219	Student Rating n=459	Interest
1. Busin. Commun.	19.5	20	21	4	1
2. Accounting	22.5	25	27	10	5
3. Shorthand	28	28	28	28	8
4. Marketing	11	16	12.5	23	10
5. Business Math	25.5	23	25	7	15
6. Intro. Programming	21	20	16.5	1	3
7. Adv. Computer Sci.	6	5.5	4	6	7
8. Computer Applic.	8.5	5.5	1	3	4
9. Begin. Spanish	19.5	20	16.5	29	22
10. Other For. Lang.	22.5	11	29	26	9
11. Art	16	25	8	27	12.5
12. English Composit.	25.5	8.5	21	2	6
13. Physics	11	3	3	15	16
14. Chemistry	17	13	15	16	13
15. Biology	25.5	28	24	11	17
16. Psysiology	15	20	11	17	18.5
17. Sociology	18	28	12.5	18	11.5
18. Psychology	14	20	2	12	2
19. Amer.Gov't & Pol.	29	25	18	9	11.5
20. World History	25.5	16	23	14	18.5
21. A.P. Comp. Sc.	4	13	5	8	12.5
22. A.P. English	8.5	1	26	5	14
23. A.P. History	11	8.5	21	19	24
24. Calculus	1.5	2	8	20	19
25. College Algebra	7	8.5	14	13	21
26. Trigonometry	13	16	19	22	25
27. A.P. Biology	5	4	8	21	20
28. A.P. Chemistry	1.5	8.5	10	24	23
29. A.P. Physics	3	13	6	25	26

Science and Math choices as their highest. Calculus, A.P. Biology, A.P. Chemistry, Physics and A.P. Physics show up as the highest rankings (all 10 or above for the teachers and administrators, though not for students. Possibly because few students indicate they have the necessary prerequisites (less than 12% on any of these, see Appendix E), the interest level is generally lower for these advanced courses. By contrast, the students indicate highest levels of interest for specialty courses like Business Communication, English Composition, Psychology, and American Government & Politics. Somewhat problematic are the ratings for the specific item of A.P. English. This course has been pioneered during the past year by Mrs. Janet Potter at Richfield High School and broadcast daily at noon over the statewide educational television channel. Administrators rate this course as a high priority--their number one for criticality. Students cite it as quite high, 5th in overall rating and 14h in level of interest. And yet, teachers have rated it as 26th, third from the bottom in their desire to have it offered over telecommunications. This apparent wide discrepancy deserves further exploration.

Table 3 provides two other estimates of numbers of students having necessary prerequisites for the twenty-nine classes. This average was computed by taking a mid-point of the "few" and "several" categories (5 and 10) and then an arbitrary figure of 25 for the category of "many". While this method almost certainly underestimates the actual numbers, it does provide a basis for comparing items. A relatively high degree of agreement is evident between administrators and teachers.

Tables 4 and 5 indicate that students are interested in receiving some

Table 3: Weighted Average of Estimated Numbers of Students Having Prerequisite Skills for Selected Courses

	Administrators (n=53)	Teachers (n=219)
1. Business Commun.	16.00	17.25
2. Accounting	17.73	18.59
3. Shorthand	15.36	17.26
4. Marketing	12.60	16.67
5. Business Math	18.87	20.76
6. Intro. Programming	18.89	19.61
7. Adv. Computer Sci.	13.21	14.90
8. Computer Applic.	16.14	16.29
9. Beginning Spanish	18.33	19.85
10. Other Foreign Lang.	16.76	18.33
11. Art	19.67	19.90
12. English Comp.	20.19	21.27
13. Physics	14.71	15.29
14. Chemistry	16.56	17.43
15. Biology	19.33	20.20
16. Physiology	14.68	17.19
17. Sociology	16.48	17.96
18. Psychology	16.03	17.03
19. Amer. Gov't & Pol	21.92	21.04
20. World History	20.86	21.28
21. A.P. Computer Science	10.76	11.38
22. A.P. English	13.82	16.46
23. A.P. History	13.00	15.38
24. Calculus	9.85	11.63
25. College Algebra	11.13	13.66
26. Trigonometry	11.79	14.40
27. A.P. Biology	12.42	14.01
28. A.P. Chemistry	11.13	12.46
29. A.P. Physics	9.84	10.49

TABLE 4: Level of Interest in Receiving Some Classes via Telecommunication as Reported by Students (n=345 (Item #3)

	Percent
Not interested	21
Quite interested	47
Very interested	32
Total:	100

TABLE 5: Level of Interest in A.P. Classes for University Credit, as Reported by Students (n=346)

"Are you interested ir Advanced Placement (A.P.) classes for which university credit would be available?"

Yes:	72%
No:	28%
Total:	100%

classes via telecommunications, with 47% saying they are "quite interested" and 32% "very interested". Roughly one-fifth of respondents (21%) indicate they are "not interested", with a comparable percentage (28%) indicating no interest in Advanced Placement (A.P.) classes. The pattern of student interest for Advanced Placement classes carrying university credit is quite similar to that noted for telecourses, with 72% of students reporting they are interested. It appears that students are interested in telecourses at both beginning and advanced levels of study as was noted in Table 2 above.

Table 6 provides a summary of the estimates of students pursuing various options after high school graduation. The estimates of teachers and administrators are remarkably close in each category. Students (sophomores and juniors) are projecting their plans following graduation and may be overly optimistic of their college possiblities. It is interesting to note that while over two-thirds (68%) of students say they want to attend college following graduation, an even larger percentage (72%) indicate an interest in taking Advanced Placement classes while in high school.

Regarding the offering of teacher inservice courses over telecommunication, the data are all qualitative. Responses from teachers and administrators indicate no lack of suggestions for possible courses and instructors. Many respondents indicate a willingness to try any of their own suggested options over telecommunications. Table 7 lists specific inservice offerings cited by more than one respondent.

TABLE 6: Estimated Mean Percentages of Students Pursuing Various Post-High School Options

	Administrators	Teachers	Students (Plans)
	n=53	n=219	n=459
College	48	44	68
Technical School	18	22	16
Other	32	34	16
Total	98	98	100

Note: Totals do not add to 100% due to rounding.

TABLE 7: Specific Offerings for Teacher Inservice Cited by more than one Respondent

Administrator	Teachers
-Essential Elements of Instruction (EEI)	Content Areas, especially Science Areas
-Mastery Learning	Outcome-Based Education
-Outcome-Based Education (OBE)	Computer Applications in
-Writing Across the Curriculum	Critical Thinking Skills
-Computer Workshops, Application Software	Math, Geometry
-Teaching Styles	Reading for the Non-Reader
-Higher Level Thinking Skills	Sociology & Psychology
-Teaching for Effective Telelearning	Innovative Discipline Techniques
-Science and Math Inservice	Foreign Language Certification: French, Spanish

Some few respondents indicate having had experience with master's level courses over Utah State University's COM-NET -- a system combining two-way audio teleconferencing, electronic blackboard, and slow-scan video -- with mixed to negative reactions. However, it is apparent that most teachers have not yet been on the receiving end of telecourses themselves.

This lack of familiarity by teachers is also apparent in their response to the question #4, "Are you interested in teaching a class over telecommunications?" Forty-eight teachers (22%) responded "Yes" or "Maybe", with the remainder answering "No" or providing no response. One can infer a

certain lack of familiarity with this type of teaching and, more surprisingly, a lack of interest in becoming familiar. The need for pre-service and inservice exposure to this type of teaching, as cited in the literature review above, is underlined by this finding.

For further analysis, the tables and comments in Appendices C, D & E are recommended to the reader. For example, it is possible to examine the feasibility of any course offering with a detailed breakdown of numbers of administrators or teachers level of interest. Similarly, the comments made by respondents can often provide additional insights.

Suggestions for Further Study

Having examined the results of this survey, a variety of additional analyses now sound attractive. One option, as suggested in the proposal, would convene two "Concerns Analysis" groups representing various interest groups, to sift evidence and prioritize findings. The outcome of such meetings would provide a set of priorities and recommendations for the state and regional service centers in considerably more detail than the present report. This additional step could be valuable.

Additional statistical analyses could include: (1) a separating out of the two-thirds of students interested in taking telecommunications classes for their level of interest in the 29 specific courses. Similarly, the 72% of students with interest in Advanced Placement classes could be examined separately. There might be some differences in the priorities of these important subgroups and the full sample of students. (2) a cross-tabulation of levels of interest indicated and numbers of students having prerequisite skills. Some

simple additional analysis could pinpoint situations where classes are desired and where substantial numbers of students are available.

Conclusions

From evidence uncovered in producing this report, a variety of conclusions can be drawn. These correlate with findings in previous studies, done by these authors and others.

The provision of certain computer courses via telecommunication is seen as a promising direction by all groups surveyed. Specifically, the advanced computer science courses (including A.P.) and computer applications courses are ranked highly by all groups.

There is a consensus among teachers and administrators that the most desirable courses for offering by telecommunications delivery are advanced offerings in math and science areas. Calculus, physics, A.P. physics, A.P. Biology, and A.P. Chemistry are examples of these.

Some insecurity on the part of teachers regarding telecommunications technology can be inferred from responses. A surprisingly low percentage of teachers (48 out of 219, or 22%) indicate a personal interest in teaching a class over telecommunications. Probably because the existing projects in the state have been funded with "productivity" monies, and because the potential for economics of scale could potentially reduce the number of professional positions, replacing them with paraprofessional classroom monitors, there is some degree of concern. The reported silence of the Utah Education Association noted in the second Case Study (Appendix A) could be in part due to this underlying suspicion. The concern about fewer jobs often translates into

skepticism -- the new s[illegible]em will not work without exceptionally motivated students, or without certified teachers serving as classroom monitors, or without perfect two-way communication with teachers and students. Judging from the experience reported by many to date, some of this skepticism is probably justified...and yet some of it is not.

One finding has been confirmed for the researchers. That is that the number, variety, and extent of exposure by all groups to telecourses is growing. As noted by one teacher in Heber City, awareness of these media forms is up sharply in their school.

It is hoped that the detailed findings of this study about specific courses can be used advantageously in future course planning.

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APPENDIX A

Case Studies

DATE: April 24, 1987

TO: Dr. J. M. Eastmond, Jr., Assoc. Professor,

FROM: Larry A. Black, USU Graduate Student of Ins. Tech.

RE: SITE VISIT OF THE CUES PROJECT AT BRYCE VALLEY H.S.

As a teacher at Richfield High School, where the CUES AP English Television Project originates, I have been able to visit the project, interview students, Mrs. Potter, and others responsible for the project. Also, as a graduate student of Instructional Technology, I have had opportunity to review the evaluations of other telelearning projects around the state. Using this background as a point of reference, I made a site visit at Bryce Valley High School in Tropic Utah to interview students, teacher and principal on April 16, 1987.

DESCRIPTION OF SITE VISIT

I arrived at Bryce Valley High School at about 1:00 PM. The principal, Mr. Lowell Meacham, to whom I had spoken to by phone that morning, called the classroom monitor/teacher, Mr. David Pollock, and the three of the four students to his office. I was able to interview them as a group at first and then individually later. The principal also arranged for me to interview three other teachers about their feelings and needs for telelearning programs in their school.

Four students are enrolled in the CUES AP English television class -- three boys and one girl. The girl was absent, but I was able to interview the three boys. The one school in Tropic is K thru 12 with seven or eight teachers teaching about 120 students in grades 7 thru 12.

RESPONSES TO INTERVIEW QUESTIONS

Question #1: To what extent have telecommunications classes been used in your school?

Four students have been taking the televised AP English class since it began in January of this year. Last year trigonometry, chemistry and art were taught via telelearning from their school to two other schools in the district, and this year they are teaching physics and art. They have also received college prep. English and AP English from Panguitch during the past two years. The program first started in the district with these classes being taught from Dixie College four years ago. The components of this project included an electronic blackboard and two-way microphones transmitted over the phone lines.

Question #2: What is your reaction to the class or classes and how useful is this type of instruction?

Student Responses: All three AP English students interviewed were enthusiastic and positive in their responses. They really didn't see any big difference between this class and a regular class. They felt Mrs. Potter was doing a good job and they appreciated her very positive and enthusiastic approach to teaching. They said that the teacher expects a lot yet the students respect her and want to work hard. They stated that it was helpful to have a qualified teacher monitoring the class to help answer questions they were unable to ask Mrs. Potter. She has good discipline and is not afraid to make a mistake. "We feel like part of the class."

Teacher Responses: One teacher said that " It's better to have a live class if you have the teacher. It works as a last resort. Kids learn from it. It gives them opportunities they wouldn't otherwise get". Another teacher said, "I don't feel it's worth the amount of money being spent for the number of students involved. My wife watches the AP English class at home." One of the teachers who has been teaching some of the telelearning classes said that "You don't have the kids' attention with the electronic blackboard as well as with the television class". This same teacher stated that he was feeling "burnt out" because of the extra preparation and pressure required to teach a telelearning class and no extra time or compensation was being given. He felt that he had enough students of his own to worry about without teaching students at other remote sites. The teacher/monitor felt that Mrs. Potter is a key to the success that the program is experiencing.

Principal Responses: Lowell Meacham said that he feels that "the CUES project is 100% better than the telelearning programs they've had during the past four years. There is no savings with regular teachers as monitors, but it provides opportunity when no class is normally available. The use of aides with in-service training and follow-up in-service during the year would help save dollars."

Question #3: Are there some things which need to be avoided or maintained? What features of the program need to be improved?

Students and teachers agreed that the time scheduled for the class (12:00 PM) is not the best since most students are in lunch hour at this time. The only other negative aspect that they mentioned is that they do not have a phone in the classroom if they want to call Mrs. Potter for a question. They said that most of their questions were answered by the studio class which kept their unanswered questions to a minimum.

The principal said that the kids are more attentive with the televised class, but there is more interaction with

the telelearning program. "Two way audio would make it perfect."

Two of the teachers who have taught with telelearning said that teachers need to be compensated for their extra time, effort and mental drain and be given more time for preparing for the program. Teaching and preparing for a telelearning class is much more demanding that a regular class.

Question #4: What subject areas should be offered over the telecommunications system? How many students would qualify? Do they have the prerequisites for these classes?

There will only be 15 seniors next year in their high school and about half of those will qualify for AP English. The teachers mentioned a need for upper level classes in the following areas: AP English, AP Math, trigonometry chemistry, physics, geology and earth science.

One teacher mentioned that because these upper level classes are not normally taught in small schools there is not a lot of interest or motivation for students to achieve in these areas and acquire the prerequisites.

Question #5: What are some potential courses for teachers over the telecommunication system which could be used for inservice and recertification needs at your school?

Inservice: Mastery Learning, elements of effective instruction, classroom management and computer managed instruction were listed by both the administrator and teachers.

Recertification: advanced biology, trigonometry, calculus, math, advanced algebra, earth science and geology.

Teachers mentioned that they were excited to have the opportunity to have classes for teachers come to their area, and that there certainly is a need for a delivery system for teachers to certify and upgrade skills.

CONCLUSIONS:

- Students, teachers and administrator feel the program is a success.

- No major problems are noted or changes requested in the delivery system.

- Teachers feel that extra compensation should be made for the extra pressure, time and preparation spent by the teacher.

- Careful selection of the teacher is a key to the success of the program.

- There is a great need for the advanced programs in these small schools, but the number of students who meet the prerequisites a few.

- Teachers are anxious to receive classes for inservice and recertification.

Site Visit: Juab High School, Nephi, Utah
Evaluation Date: May 6, 1987
Interviewer: Charles G. Stoddard
Report Date: May 8, 1987

Introduction

The site visit to Juab High School was conducted on Wednesday the 6th day of May between the hours of 8:00 am and 2:00 pm. The sample consisted of interviewing the district superintendent, the school principal, 4 teachers (two in private interviews, and two in simultaneous interviews), and 4 students. The interviews were conducted on a day with approximately three weeks left in the school year, and on a day when the principal was solving several individual student problems, student election campaigns were in progress, and the sophomore students were ordering class rings. The evaluator determined that these elements did not taint the interview responses and that adequate time was allotted to conduct the interview sessions.

The School Community: A Description

Juab High School is located approximately 80 miles south of Salt Lake City, in a rural community with a student population of approximately 380 students. The facilities are less then four years old, and are attractively furnished. The building design exhibited great utility. The academic classes were held in an academic area away from non-academic classes to avoid noise and class interruptions. The facilities had pre-wired television, computer networking, and communication systems installed during building construction. Other than some implementations of computers for administration applications, a set of computers in type room, and one in each room of the academic wing, the school is limited in the use of computer technology. The A.P. English class has used Mrs. Potter's television program over KUED occasionally for classroom support. Overall, little telecommunication is being used.

Observations

Before one is able to place the interviews in a specific frame of reference, several observations should be noted. The principal and superintendent were very positive and congenial to the interviewer and appeared eager to accommodate the site visit. The teachers were very kind and eager to respond after being selected. They were not forced or required to participate in the interviews. The students were eager to participate, but contributed little due to unfamiliarity of what telecommunication is and how its implementation would affect them.

The administrative personnel are involved with the education center in Richfield and are encouraged by experiences in areas of telecommunication at C.U.E.S. Due to the apparent zeal of some district decision makers, the teachers expressed feelings that they were being left out of the decision making process. These

feelings contribute to the school morale and seemed to influence the attitudes of the subjects both positively and negatively.

Summary of Interviews

Superintendent-- Superintendent Wright was very positive and excited about the telecommunication possibilities. At present, not much has been done in the district, but long range plans were being formulated. He and the principal have applied for money to buy a satellite dish to provide some class offerings through C.U.E.S. under the state productivity grant program. He said that the district had interest in the A.P. English program, and the Spanish Satellite program. The superintendent viewed telecommunications as the "great equalizer," or one of the best attempts at equalizing the curriculum offerings that are limited in small rural schools. Though he questions that telecommunications could provide effective instruction without trained individuals to support the content, he believed that telecommunication instruction as a support function would be of greatest worth. He qualified his support by saying that it would never be the most ideal instruction, but would be superior to what is going on in many school systems. He expressed the view tha two way communications between students and teachers is vitally important in whatever telecommunication system was utilized. The superintendent projected approximately 30 % of his students would take classes over this system, but cautioned that students involved would have to fit a select group, namely to be self directed and highly motivated. Content areas that the superintendent believed would be of most use to students are the advanced placement or "honors" class programs.

Principal-- The principal viewed telecommunication as the "salvation" of the public schools. He was proud of the advanced placement program in his school, and was convinced that telecommunications would help supplement this program. He felt from the outset that participating students should be a select group due to the required level of self direction and motivation of students. He believed that the present curriculum offered at Juab High School provided all the prerequisites for classes taught either as A.P. or Honors classes. He believed that one of the most important needs in a telelearning setting, was the monitoring of the class. He believed that a para-professional could be employed to monitor these classes, which would save the district money, and relieve some teachers with heavy loads or multiple preparations. He used his chemistry program as an example, stating that they had an excellent teacher, with 6 different preparations, who was almost at the overload stage. Telecommunication could help relieve the pressures of some teachers.

When asked to consider inservice applications, the principal believes that this was one of the greatest possibilities of utilizing telecommunications. He stated that specific applications in specific content areas could be provided. This would make inservice training more applicable to the teachers

involved. So often with inservice, the cost is too high to bring in an expert in a specific content area for a limited number of teachers. Therefore, generalists are usually used so information can be applied across the curriculum as a whole. This strategy is often ineffective, since specific curriculum areas have individual problems and concerns. Some areas suggested for inservice were; new education concepts on how children learn, presentation skills, developing mediated presentation materials, understanding the new research findings of education, etc. The only detractors that the principal encountered were the lack of support from the UEA and the Utah State Office of Education. He described some of his problems in getting the state office to help finish several computer projects that had been started in the district and never completed. He discussed problems previously encountered in trying to get a microwave link in to the district. After the school had made all the arrangements, at reduced costs, they were turned down. He was critical of UEA in not trying to promote professionalism among the teachers to accept and get training in new technology forms. In summary, he contended that without state level support, in a unified effort, the power of telecommunications would not reach its potential.

Teachers-- I was able to interview four teachers, two educators from the science content area, one special education instructor, and one mathematics teacher. Their responses were as diverse as their personalities. They did agree on several points. First, they agreed that telelearning could only be a supplementary situation to support programs taught by competent educators in a school. It could not stand alone because of the need that students have for help and because of the variability of local education problems. Second, scheduling any state wide program is difficult to impossible. To implement a uniform schedule, all school districts would have to have the same starting times, class period length, etc. They contend that local school districts would not go along with a uniform system because each unit makes decisions based upon specific needs. Loss of local control might make rural areas revolt over a statewide uniform scheduling program. Finally, they agreed that the description of the student allowed to participate would have to be monitored or selected using both quantitative and qualitative measuring techniques.

Students that were self motivated and took responsibility for their own education would be the only ones that would succeed in telecommunication settings. One teacher pointed out that these students would succeed under any circumstances but telecommunication instruction could provide a vehicle for the students learning to be enhanced. The teachers were aware of Mrs. Potter's program over KUED and believed that she was doing a great job. They believed that two way communication between the students and teachers were vital for program success and that more importantly, the telelearning teacher, needed to make site visits so that they could see the conditions in eacn rural area and get to know the students individually by name and personality. The

teachers did question the ability of the telelearning system with two way communication to handle all the potential questions being asked over the system. There is a chance the program would become nothing more than a question and answer vehicle with little instruction time available. If questions were eliminated or limited, many students would not get the needed responses to assist them in the learning process.

Another area that concerned the teachers was a perceived loss of a reward system in telelearning. With the teacher outside the school, the students would not receive the rewards needed to keep motivation high. Motivation seems so important to telelearning programs. If teachers inside the school were responsible to maintain the reward systems, they could just as well teach the students and grade them. In that case, there would be no personnel savings.

Several teachers raised other issues. One concern was that telecommunication learning may have to become an entertaining medium if used across the curriculum to keep attention. If used for a specific group of learners only, e.g. gifted, it could contribute to an elite group, while the over all opportunities for all children would be limited. A second concern was that the interaction between students and teachers are unique, and could not be replicated through telecommunications. In fact, interaction in a true sense would not exist. Examples cited were; remediation of students, follow through on assignments and class activities, processing of information, etc. One teacher believed that to present the information may require such standardization as to set aside higher levels of thinking skills.

When asked about inservice over telecommunications, the teachers felt it is a possibility, but only if the teachers had a say in what was selected to be inserviced. Specific content areas would be very useful, as opposed to general applications. Two teachers were very concerned about this form of inservice, feeling it is not their learning style, and they liked the personal on site interaction from inservice. They contended that the problem with inservice is that administration selects the topics and generally they don't apply to real teacher needs. They believe telecommunications could be used to help teachers instructing outside their content area if they could get them to attend.

Students-- The students where not really aware of the possibilities of receiving instruction over a telecommunications network. Before they could be interviewed they had to be briefed on what telelearning was and how it applies to students. After this briefing, they were interviewed and they suggested that over half of the students would like to take classes under these situations. They suggested classes that they would like taught. These included advanced computer programming as well as introductory computer classes, foreign languages, especially French and German, (the school offers Spanish only) and autobody. One student (the only one that had experience with telelearning from Mrs. Potter's English class) said it would be great once in a

while, but day after day, it would be "Boring!" One student felt other students wouldn't take these classes because that is not the way they learn. In a follow-up question on how they learned, she said they needed the personal touch of their teachers because they understood them. A male student that is taking A.P. classes presently, said that the elective offerings would be the greatest asset of telecommunication classes. He liked the idea of learning under a telecommunication model.

Conclusions

The following conclusions were drawn from the site visit to Juab High School.

1. The administration is in full support of telelearning strategies, but recognize the unified support that must come from the Utah State Office of Education.

2. The school is involved with the C.U.E.S. programs for implementation of telecommunication systems.

3. The teachers believe that the personnel support is essential to make the program work, and the teacher support in telecommunication classrooms must be trained professionals.

4. Telecommunications would better serve the school as an enriching tool rather then as a complete teaching system.

5. Personal interaction and on site visits would be necessary to acquaint the teachers with the students and thereby make instruction more personal and beneficial to local needs.

6. A reward system for students would need to be developed that could replace the in house system to keep students motivated.

7. Teacher inservice could be offered over the system as long as offerings were content specific, with applications for better instruction.

8. Teachers need to be included in the decision making process for the implementation of telelearning for both inservice or instruction to succeed.

9. Telecommunications may have some strengths in enriching programs, but may not be totally cost effective or practical unless some statewide unified scheduling and coordination is provided, and local districts choose to give up some elements of local control.

10. Telecommunication can be expected to have greater impact on smaller schools with less qualified staff than on larger schools with more qualified teaching staffs.

Site Visit: Wasatch High School, Heber City, Utah
Date of visit: April 28, 1987
Date of write-up: April 29, 1987
Interviewer: Nick Eastmond

I arrived at Wasatch H.S. shortly before 9:00 AM. The principal, Dr. Kent Larson, was away from the school handling an errand, but returned shortly. We had a brief interview, during which we were joined by an Assistant Principal/Intern from the Brignam Young University, Mr. Phillip Armstrong. Mr. Armstrong helped set up the interviews for me with faculty and students.

I was able to meet with the Principal, the Assistant Principal/Intern, the Superintendent, and four teachers for individual interviews. I met with two groups of five students each, to conduct group interviews.

Several of the interviews were exceptional. The Superintendent had a wealth of information about telecommunications projects, having been extensively involved with projects of this sort in Garfield County, prior to coming to Wasatch County this year. The four teachers had a variety of ideas for how to use the telecommunications systems. Surprisingly, none of the persons interviewed, except for the Principal and the Superintendent, indicated having filled out the questionnaire a month earlier.

Findings : Overall

An important feature of the school context is that to date the school has offered no courses provided via telecommunications. Two projects involving telecommunications are taking place at the nearby Wasatch Middle School: the degree program for teachers, offered through COMNET from Utah State University and a geology class brought in for middle school students from Lake Lomond, Michigan. It was clear from discussions with teachers that telecommunications as a topic had been on peoples' minds recently. As one teacher related, "If you had asked me these questions a year ago, I would have had almost nothing to say. This year, though, there is a lot going on around here."

Certainly, much of the ferment is due to the attitude of the Superintendent, Dr. Henry Jolley. He had apparently made his favorable attitudes toward telecommunications teaching quite clear, as all teachers interviewed volunteered information about the superintendent's declared position and emphasized their own interest in that light. Administrative enthusiasm from the superintendent is apparent. The commitment from the Principal is less definite, but stated nonetheless.. Though stated as having "tremendous potential, one of the few hopes for quality in rural areas", it is clear that the superintendent is the person identified as leading out in this area.

I felt I was well received and appreciated the scheduling help of Mr. Armstrong. People were able to give me adequate time, and they seemed to be generally forthright and positive. In the case

of the students, they were totally unaware of the existence of this sort of class. Their responses were all hypothetical, based upon my description of what this sort of class might be like.

Findings: Student Course Offerings

Some of the ideas suggested for course offerings were as follows:

-- Science areas, where camera closeups would enhance.

-- Do some specials with electronic journalism. Show how journalism programs are set up in some of the state's bigger schools, e.g. Orem H.S. and Highland H.S. (S.L.C.)

-- Advanced classes such as physics, calculus, astronomy.

-- The classroom portion of Drivers Education ought to be offered over telecommunication, with the hands-on, driving portion taught as it is now.

-- A preparatory course for the ACT test.

-- Aerospace science.

-- Marketing.

-- Visual art or commercial art.

-- A.P. English

-- Any of the colllege entry courses, e.g. Math, history, literature, economics, accounting, business, and typing.

-- Computer courses such as "C", Pascal and Cobol.

-- Math courses for self-motivated students.

-- Social studies courses, e.g. geography, using slides and film clips.

In one instance, I was aware of information from a student about a course that had not been offered but one in which considerable demand had been expressed. I later made contact with the teacher who apparently would have taught that course. When I came to the question dealing with subject areas for teaching over telecommunication, I was aware that this person was suggesting the general subject area but not the specific area. I then suggested the specific area that the student had noted.

From the student's point of view, the class had not been offered because the teacher was not trained in the area and could not take the time to become qualified. From the teacher's point of view, the class had been cancelled when it became apparent that students signing up were not serious about this course academically, but rather, were enrolled for "fun and games", i.e. amusement and an easy class, only. Lacking any corroborating data to resolve that

difference in report, I can only state that faculty and student perceptions of the need for certain courses may be considerably different.

Findings: Teacher Inservice Possibilities

Some of the best information about inservice possibilities came from two teachers who had viewed videotapes of Mrs. Janet Potter from Richfield High School, as broadcast over KUED. Their idea was simply that Mrs. Potter serves as a role model, bringing ideas to teachers as well as students. While the teachers will not be copying her techniques exactly, her work is admired and is apparently being imitated.

Another idea with merit, I felt, was the offering of inservice workshops over telecommunication that were oriented to computer usage in particular subject areas. For example, a workshop might address computer usage for accounting teachers, or for English teachers, or for particular sciences. Instead of expecting people to sign up for a lengthy workshop spread over three months or so, these workshops could be effective as single-shot, one day or one afternoon affairs. I felt that the idea deserves consideration at the State Board Level.

Another workshop suggested would involve Mr. Douglas Bates of the State Department of Education dealing with topics in school law. This teacher said that the workshop given by Mr. Bates had been by far the best inservice offering provided in the district this year. He felt that a series of workshops dealing with legal aspects of every teacher's role -- e.g. the legalities of someone hurt on a field trip, the limits of "search and seizure" of lockers, etc. -- would be of interest to both elementary and secondary teachers.

Some of the additional ideas suggested for inservice were as follows:

-- Teaching methods and materials classes.

-- Counseling, Library Science, Administrative courses, media, and computer literacy. (These appeared to be entire degree programs or major courses, at least)

-- Inservice courses in methods of discipline, the core curriculum and positive self esteem.

-- Clinical supervision.

-- New research with applicability to teachers.

-- Teaching techniques, uses of media, computer as a tool.

-- A "Summer Teaching Seminar" for teachers using technology. That would take some seed money on the part of the state, but it could pay off handsomely.

-- Personnel evaluation.

-- Electronic mail and networking for teachers.

Findings: Pitfalls and Caveats

Features of courses which ought to be avoided were somewhat predictable. They included:

-- Pay attention to motivation. This sort of teaching requires an extremely dynamic teacher.

-- Feedback time on assignments must be minimized.

-- The teacher needs to know individual students at each of the sites.

-- Teaching must be done at an appropriate level of difficulty for the students.

-- Somehow, the informality of the classroom with Mrs. Janet Potter ought to be widely imitated.

-- The teaching needs to stay humanized.

-- Avoid early claims that teachers can be replaced. That may be true at sometime in the future, but it is not true in the short run. The threat from that idea can kill the telecommunications.

-- Identify the prerequisite skills needed by students. Make sure they have these skills before being admitted into class.

-- Maintain quality control. The rigor of the course must stay comparable to previous offerings. The course must stay humane as well.

-- Have trained aides as classroom monitors. Folks hired on minimum wage, just off the street, will not do.

-- These courses, at least in the short run, must be geared to the needs of the more motivated students. These students can be expected to discipline themselves most, but not all of the time.

-- These courses provide a useful "window on the world" for students. As an example, I grew up in one small community, and we hated everyone from another small community nearby. One person I had been really impressed with in college turned out to be from this rival town. It was not until then that I had realized that there could be good people coming from that town. Our students need to learn this sort of thing. I want students to know that there's more to this world than just Heber City.

-- When I first saw the (COMNET) slow scan television, it was a disappointment. These classes need to be animated, with variety and excitement.

-- Teachers need plenty of prep time to be ready for this sort of teaching.

I interviewed through the students lunch hour, to about 1:10 PM. I left shortly after that.

APPENDIX B

Sample Questionnaires

and Accompanying Letters

UTAH STATE OFFICE OF EDUCATION

UTAH STATE BOARD OF EDUCATION
UTAH STATE BOARD FOR VOCATIONAL EDUCATION

Keith T Checketts, Chairman
Ruth Hardy Funk, Vice Chairman

Neola Brown·Donald G. Christensen
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Valerie J Kelson·M Richard Maxfield·Margaret R Nelson

250 East 500 South / Salt Lake City, Utah 84111
(801) 533-5431

James R Moss
State Superintendent
of Public Instruction

March 12, 1987

Dear Rural Educator:

Electronic communication is being utilized more and more in Utah as a means for delivering high school courses, concurrent-enrollment college courses for high school students, and inservice training. This medium is particularly valuable for Utah's rural schools.

The enclosed questionnaire solicits information which will be used to determine the needs of rural high school students and educators for courses which can be delivered in 1987-88 through telelearning. At a time when financing for schools is being reduced and when the gap in equality of education between urban and rural schools is widening, it is important to conduct this study and to use the information gained for planning courses to be delivered next year.

The CUES Service Center is implementing the study, which is funded by a grant from the State Office of Education. The information gained will be given to all those now engaged in telelearning projects in Utah.

I endorse this study as being worthwhile and useful, and recommend that it be supported by all rural school staff members.

James R. Moss
State Superintendent
of Public Instruction

JRM:b

Enclosure

Central Utah Educational Services
SERVING TEACHERS & STUDENTS
188 WEST CENTER
RICHFIELD, UTAH 84701
(801) 896-4469

Dear Superintendents and Principals:

Electronic Telecommunication is being utilized more and more in Utah as a means for delivering high school courses, concurrent-enrollment college courses for high school students, and inservice training. This medium is particularly valuable for Utah's rural schools.

The enclosed questionnaire will be used to determine the needs of high school students and rural educators for courses which could be delivered in 1987-88 through telelearning. At a time when financing for schools is being reduced and when the gap in equality of education between urban and rural schools is widening, it is important to make this study and to use the information for planning courses for next school year.

I endorse the study as being worthwhile and useful, and request the support of all rural school staff in its behalf.

Sincerely,

Jack Burr

Jack F. Burr
CUES Director

JFB:vw

WORLDWIDE

EDUCATION AND RESEARCH INSTITUTE

INTERNATIONAL HEADQUARTERS
2315 STRINGHAM AVENUE
SALT LAKE CITY, UTAH 84109
PHONE: (801) 486-6066 / 521-9393

March 11, 1987

Dear Superintendent;

Enclosed is a copy of a statewide telecommunications survey, developed under the auspices of the Central Utah Educational Services Center (CUES), but with the assistance of State Board of Education personnel. The intent of the study is to determine the needs for various course offerings over telecommunications, in the areas of regular high school classes, advanced placement or university credit courses and teacher inservice.

There are three versions of the questionnaire: one for administrators, one for teachers and one for students.

Please note that all data from the questionnaires, with the exception of names volunteered for possible teaching via telecommunications, will be reported back as grouped data. The confidentiality of respondents will be protected.

A stamped envelope is provided for returning the questionnaire. When all have been collected, please send them back to us. We need to receive the questionnaires back by Wednesday, March 25th, for inclusion in the analysis.

Thank you for your help with this project. Our intent is to provide accurate information to decision-makers about telecourse offerings in the future. Your participation is important.

Sincerely,

J. Nicholls Eastmond, Jr.
Consultant

NOTE: Questions should be referred to Mr. Chuck Stoddard (750-2614) or myself.

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There are three versions of the questionnaire: one for administrators, one for teachers, and one for students. Please follow the instructions below for each:

Administrator version: (one copy per school)

This questionnaire should be filled out by the school principal, or if necessary, by the vice-principal.

Teacher version: (copies for one-half of the teachers)

To distribute this questionnaire, take a list of teachers at your school. Starting with the second name on the list, give one questionnaire to every other teacher. Keep track of the numbers of the questionnaires with the list of teachers, marking off those numbers as the questionnaires are returned.

Student version: (copies for one out of every twelve students, grades 10-11. From a listing of students in grades 10 and 11, go down the list to the 10th student. Then count down 12 students to select the next one. Count down 12 students to the next one and so on. It is important to follow these procedures to obtain an accurate sampling of these students. As in the case with teachers, it is important to maintain a list of students and the number of the questionnaire given out to allow for follow up if they are not returned. If, after following these procedures, you need more questionnaires, please contact us at the address below. If questions arise, please contact us.

Please note that all data from the questionnaires, with the exception of names volunteered for possible teaching via telecommunications, will be reported back as grouped data. The confidentiality of respondents will be protected.

A stamped manilla envelope is provided for returning the questionnaires. When all have been collected, please send them back to us. We need to receive the questionnaires back by Wednesday, March 25th, for inclusion in the analysis.

Thank you for your help with this project. Our intent is to provide accurate information to decision-makers about telecourse offerings in the future. Your participation is important.

Sincerely,

J. Nicholls Eastmond, Jr.
Consultant

NOTE: Questions should be referred to Mr. Chuck Stoddard (750-2614) or myself.

code#_____

STATEWIDE TELECOURSE SURVEY
Administrators Questionnaire

Over the past several years, a variety of telecourse offerings have been provided to selected rural high schools in the state. These courses have been delivered over a variety of systems, including microwave systems, over KUED, and over telephone lines. The intent of this questionnaire is to determine the demand for such courses for the coming year(s) in the areas of (1) high school subjects; (2) advanced placement or college level courses; and (3) teacher inservice.

Instructions: Please give us your thoughtful responses to the following questions.

1. Following is a list of classes that students might receive through a telecommunications program. From your point of view, rate the items by circling the number corresponding to the following scale.
   5. We now offer or plan to offer such a course in our school, and have no need for a telecommunication class on this subject
   4. We now offer or plan to offer such a course in our school, but would like to replace it with a telecommunication class,
   3. We now offer or plan to offer such a course in our school, and would like to supplement it with a telecommunication class,
   2. We do not have this course, but would like to receive it by telecommunications.
   1. We do not have this course, and have no need for one.
   0. No Opinion- I don't know

Many of these classes would require students to have learned pre- requisite skills using the following scale 0 - 4, indicate how many students in grades 10-11 who presently have the pre-requisites for each of the following classes.
   4. Many Students (20+)
   3. Several students (10-19)
   2. A few students (1-9)
   1. No students
   0. Cannot Estimate

Offerings for Students

A. High School Offerings	Rating Scale	Number scale
Business:		
1. BUSINESS COMMUNICATIONS	5 4 3 2 1 0	4 3 2 1 0
2. ACCOUNTING	5 4 3 2 1 0	4 3 2 1 0
3. SHORTHAND	5 4 3 2 1 0	4 3 2 1 0
4. MARKETING	5 4 3 2 1 0	4 3 2 1 0
5. BUSINESS MATH	5 4 3 2 1 0	4 3 2 1 0
COMPUTER SCIENCE		
6. INTRODUCTORY PROGRAMMING	5 4 3 2 1 0	4 3 2 1 0
7. ADVANCED COMPUTER SCIENCE	5 4 3 2 1 0	4 3 2 1 0
8. COMPUTER APPLICATIONS	5 4 3 2 1 0	4 3 2 1 0
FOREIGN LANGUAGE		
9. BEGINNING SPANISH	5 4 3 2 1 0	4 3 2 1 0
10. OTHER_ _____	5 4 3 2 1 0	4 3 2 1 0
ART		
11. ART	5 4 3 2 1 0	4 3 2 1 0
LANGUAGE ARTS		
12. ENGLISH COMPOSITION	5 4 3 2 1 0	4 3 2 1 0
SCIENCE		
13. PHYSICS	5 4 3 2 1 0	4 3 2 1 0
14. CHEMISTRY	5 4 3 2 1 0	4 3 2 1 0
15. BIOLOGY	5 4 3 2 1 0	4 3 2 1 0
16. PHYSIOLOGY	5 4 3 2 1 0	4 3 2 1 0

PLEASE CONTINUE ON OTHER SIDE

SOCIAL STUDIES		
17. SOCIOLOGY	5 4 3 2 1 0	4 3 2 1 0
18. PSYCHOLOGY	5 4 3 2 1 0	4 3 2 1 0
19. AMERICAN GOVERNMENT &POLITICS	5 4 3 2 1 0	4 3 2 1 0
20. WORLD HISTORY	5 4 3 2 10	4 3 2 1 0
B. ADVANCED PLACEMENT OR UNIVERSITY OFFERINGS		
21. AP COMPUTER Science	5 4 3 2 1 0	4 3 2 1 0
22. AP ENGLISH	5 4 3 2 1 0	4 3 2 1 0
23. AP HISTORY	5 4 3 2 1 0	4 3 2 1 0
24. CALCULUS	5 4 3 2 1 0	4 3 2 1 0
25. COLLEGE ALGEBRA	5 4 3 2 1 0	4 3 2 1 0
26. TRIGONOMETRY	5 4 3 2 1 0	4 3 2 1 0
27. AP BIOLOGY	5 4 3 2 1 0	4 3 2 1 0
28. AP CHEMISTRY	5 4 3 2 1 0	4 3 2 1 0
29. AP PHYSICS	5 4 3 2 1 0	4 3 2 1 0

2. Now that you have completed the ratings, please go back and circle the numbers of up to five courses that you feel are the most critical for offering via telecommunications.

3. List teachers in your area (and subject area) who would be particularly effective in teaching over telecommunications.

4. What percent of the students in your school would you estimate does each of the following within two years of graduation. Note: Categories should total 100%

_____% College _____ % Technical Schools _____ % Other

Offerings for Teacher Inservice

5. Please list courses or workshops in demand for inservice training in your district. These could be existing offerings or ones you believe should be created.

6. Please note any of these courses for inservice that would appeal to teachers in your district if offered over telecommunication.

7. List teachers or district personnel you feel would be particularly effective providing inservice over a telecommunication system. Also, note their area for their inservice offering.

8. Please give any additional suggestions you might have using tele-learning to improve the curriculum choices and instruction in your school.

code #_____

STATEWIDE TELECOURSE SURVEY
Teacher Questionnaire

Over the past several years, a variety of telecourse offerings have been provided to selected rural high schools in the state. These courses have been delivered over a variety of systems, including microwave systems, over KUED, and over telephone lines. The intent of this questionnaire is to determine the demand for such courses for the coming year(s) in the areas of (1) high school subjects; (2) advanced placement or college level courses; and (3) teacher inservice.

Instructions: Please give us your thoughtful responses to the following questions.

1. Following is a list of classes that students might receive through a telecommunication program. From your point of view, rate the items by circling the number corresponding to the following scale.
   5. We now offer or plan to offer such a course in our school, and have no need for a telecommunication class on this subject
   4. We now offer or plan to offer such a course in our school, but would like to replace it with a telecommunication class,
   3. We now offer or plan to offer such a course in our school, and would like to supplement it with a telecommunication class,
   2. We do not have this course, but would like to receive it by telecommunications.
   1. We do not have this course, and have no need for one.
   0. No Opinion- I don't know

Many of these classes would require students to have learned pre- requisite skills using the following scale 0 - 4, indicate how many students in grades 10-11 who presently have the pre-requisites for each of the following classes.
4. Many Students (20+)
3. Several students (10-19)
2. A few students (1-9)
1. No students
0. Cannot Estimate

Offerings for Students

A. High School Offerings	Rating Scale	Number scale
Business:		
1. BUSINESS COMMUNICATIONS	5 4 3 2 1 0	4 3 2 1 0
2. ACCOUNTING	5 4 3 2 1 0	4 3 2 1 0
3. SHORTHAND	5 4 3 2 1 0	4 3 2 1 0
4. MARKETING	5 4 3 2 1 0	4 3 2 1 0
5. BUSINESS MATH	5 4 3 2 1 0	4 3 2 1 0
COMPUTER SCIENCE		
6. INTRODUCTORY PROGRAMMING	5 4 3 2 1 0	4 3 2 1 0
7. ADVANCED COMPUTER SCIENCE	5 4 3 2 1 0	4 3 2 1 0
8. COMPUTER APPLICATIONS	5 4 3 2 1 0	4 3 2 1 0
FOREIGN LANGUAGE		
9. BEGINNING SPANISH	5 4 3 2 1 0	4 3 2 1 0
10. OTHER_____	5 4 3 2 1 0	4 3 2 1 0
ART		
11. ART	5 4 3 2 1 0	4 3 2 1 0
LANGUAGE ARTS		
12. ENGLISH COMPOSITION	5 4 3 2 1 0	4 3 2 1 0
SCIENCE		
13. PHYSICS	5 4 3 2 1 0	4 3 2 1 0
14. CHEMISTRY	5 4 3 2 1 0	4 3 2 1 0
15. BIOLOGY	5 4 3 2 1 0	4 3 2 1 0
16 PHYSIOLOGY	5 4 3 2 1 0	4 3 2 1 0

PLEASE CONTINUE ON OTHER SIDE

SOCIAL STUDIES		
17. SOCIOLOGY	5 4 3 2 1 0	4 3 2 1 0
18. PSYCHOLOGY	5 4 3 2 1 0	4 3 2 1 0
19. AMERICAN GOVERNMENT &POLITICS	5 4 3 2 1 0	4 3 2 1 0
20. WORLD HISTORY	5 4 3 2 1 0	4 3 2 1 0
B. ADVANCED PLACEMENT OR UNIVERSITY OFFERINGS		
21. AP COMPUTER Science	5 4 3 2 1 0	4 3 2 1 0
22. AP ENGLISH	5 4 3 2 1 0	4 3 2 1 0
23. AP HISTORY	5 4 3 2 1 0	4 3 2 1 0
24. CALCULUS	5 4 3 2 1 0	4 3 2 1 0
25. COLLEGE ALGEBRA	5 4 3 2 1 0	4 3 2 1 0
26. TRIGONOMETRY	5 4 3 2 1 0	4 3 2 1 0
27. AP BIOLOGY	5 4 3 2 1 0	4 3 2 1 0
28. AP CHEMISTRY	5 4 3 2 1 0	4 3 2 1 0
29. AP PHYSICS	5 4 3 2 1 0	4 3 2 1 0

2. Now that you have completed the ratings, please go back and circle the numbers of the courses that you will be qualified to teach, given the 1988 requirements for teacher certification in the subject matter areas.

3. What percent of the students in your school would you estimate does each of the following after graduation.

_____% College _____ % Technical Schools _____ % Other

4. Are you interested in teaching a class over telecommunications?
_____ YES _____NO (If yes, identify yourself by name with the class(es) you would be interested in teaching.

INSERVICE TRAINING OFFERINGS

5. Please list any courses or workshops that you would want for inservice training.

6. Are there any of these, in your opinion, that would lend themselves to delivery over telecommunications?

7. Please give any additional suggestions you might have using tele-learning to improve the curriculum choices and instruction in your school.

code #_____

STATEWIDE TELECOURSE SURVEY
Student Questionnaire

You may have heard that some courses are now being offered from a distance in the State of Utah. For example, it is possible to have an instructor at one location teach a class at one or more other locations, using telecommunications. Some of these classes are delivered over KUED, others over microwave transmission, and others by the telephone lines. The intent of this questionnaire is to determine how much interest exists for these types of courses for (1) high school subjects and (2) advanced placement or college level courses.

Instructions: Please give us your thoughtful responses to the following questions

1. The following is a list of classes that you might receive through this program. Please rate the importance of each to your future needs and the the ones for which you may have the prerequisites.

Note: Pre-requisites needed — For Tele-learning classes

___Sophomore English ---------- Technical writing, Engl' Composition, Business Communications
___First Year Biology ---------- Advanced Biology
___General Math ---------- Accounting
___Algebra I ---------- Physics, Chemistry, Algebra II
___Algebra II ---------- Trigonometry, Calculus
___Trigonometry ---------- Calculus

Following is a list of classes that you might receive through this program. Please rate the importance of each to your future needs by circling the numbers from the following scale:

5 - Extremely important
4 - Very Important
3 - Moderately important
2 - Of slight importance
1 - of no importance

A. High School Offerings	Rating Scale	Mark (X) those that you have the pre-requicites
Business:		
1. BUSINESS COMMUNICATIONS	5 4 3 2 1	( )
2. ACCOUNTING	5 4 3 2 1	( )
3. SHORTHAND	5 4 3 2 1	( )
4. MARKETING	5 4 3 2 1	( )
5. BUSINESS MATH	5 4 3 2 1	( )
COMPUTER SCIENCE		
6. INTRODUCTORY PROGRAMMING	5 4 3 2 1	( )
7. ADVANCED COMPUTER SCIENCE	5 4 3 2 1	( )
8. COMPUTER APPLICATIONS	5 4 3 2 1	( )
FOREIGN LANGUAGE		
9. BEGINNING SPANISH	5 4 3 2 1	( )
10. OTHER_____	5 4 3 2 1	( )
ART		
11. ART	5 4 3 2 1	( )
LANGUAGE ARTS		
12. ENGLISH COMPOSITION	5 4 3 2 1	( )
SCIENCE		
13. PHYSICS	5 4 3 2 1	( )
14. CHEMISTRY	5 4 3 2 1	( )
15. BIOLOGY	5 4 3 2 1	( )
16. PHYSIOLOGY	5 4 3 2 1	( )

PLEASE CONTINUE ON OTHER SIDE

SOCIAL STUDIES		
17. SOCIOLOGY	5 4 3 2 1	( )
18. PSYCHOLOGY	5 4 3 2 1	( )
19. AMERICAN GOVERNMENT &POLITICS	5 4 3 2 1	( )
20. WORLD HISTORY	5 4 3 2 1	( )
B. ADVANCED PLACEMENT OR UNIVERSITY OFFERINGS		
21. AP COMPUTER Science	5 4 3 2 1	( )
22. AP ENGLISH	5 4 3 2 1	( )
23. AP HISTORY	5 4 3 2 1	( )
24. CALCULUS	5 4 3 2 1	( )
25. COLLEGE ALGEBRA	5 4 3 2 1	( )
26. TRIGONOMETRY	5 4 3 2 1	( )
27. AP BIOLOGY	5 4 3 2 1	( )
28. AP CHEMISTRY	5 4 3 2 1	( )
29. AP PHYSICS	5 4 3 2 1	( )

2. Now that you have completed the ratings, please go back and circle the numbers of up to five courses that you would be interested in taking if offered at your school over a telecommunications system.

3. Mark an X, how interested you are in receiving some of your classes next year through this technological process.
_____NOT INTERESTED _____QUITE INTERESTED _____VERY INTERESTED

4. What are your plans in the two years following your high school graduation?
_____College _____Technical School _____Other (Explain)

5 Are you interested in advanced placement (AP) classes for which university credit would be available?

_____YES _____NO

6. Please give any additional suggestions you might have using tele-learning to improve the curriculum choices and instruction in your school.

WORLDWIDE

EDUCATION AND RESEARCH INSTITUTE

INTERNATIONAL HEADQUARTERS
2315 STRINGHAM AVENUE
SALT LAKE CITY, UTAH 84109
PHONE. (801) 486-6066 / 521-9393

MEMORANDUM

To: Dr. Jack Burr. Dr. Kent Ellertson. Dr. Bill Cowan, and Dr Lyle Wright.

From: Nick Eastmond and Chuck Stoddard

Re: Statewide Telecommunication Survey

Enclosed is a copy of the data gathering instruments and cover letters used to obtain the information for the statewide telecommunication survey. The material was sent out on March 14th, with hopes that the mail service would get the materials to the desitnation on March 16th and 17th.

A return date was suggested of March 25th, in order for us to maintain the specified time table. Please consider them at your convenience.

WORLDWIDE

EDUCATION AND RESEARCH INSTITUTE

INTERNATIONAL HEADQUARTERS
2315 STRINGHAM AVENUE
SALT LAKE CITY, UTAH 84109
PHONE: (801) 486 6066 · 521-9393

March 25, 1987

Dear Superintendent:

During the week of March 16th, you should have received a questionnaire regarding the use of telecommunications. As of this date, we have not received the questionnaire back from you. We know that the requested time for returning it was short, but the information desired is important to assure adequate programming for next year.

If you have already mailed the questionnaire back, let us thank you for your assistance in this project.

If you did not receive such a questionnaire, please contact us immediately at (801) 750-2614 (Chuck Stoddard).

If you did receive the questionnaire but it is not yet completed, please take steps to expedite the process and to send them in immediately. If there are some special extenuating circumstances or if some obstacle has arisen, please contact us at the number above.

Thank you for your help in this matter.

Sincerely,

Nick Eastmond

Nick Eastmond
Consultant

NE/dl

WORLDWIDE

EDUCATION AND RESEARCH INSTITUTE

INTERNATIONAL HEADQUARTERS
2315 STRINGHAM AVENUE
SALT LAKE CITY, UTAH 84109
PHONE: (801) 486-6066 / 521-9393

March 25, 1987

Dear Principal:

During the week of March 16, you should have received a packet with questionnaires for students, teachers and one administrator at your school regarding the use of telecommunications. As of this date, we have not received the packet back from you. We know that the requested time for returning them was short, but the information desired is important to assure adequate programming for next year.

If you have already mailed these questionnaires back, let us thank you for your assistance in this project.

If you did not receive such a packet of questionnaires, please contact us immediately at (801) 750-2614 (Chuck Stoddard).

If you did receive the questionnaires but they are not yet completed, please take steps to expedite the process and to send them in immediately. If there are special extenuating circumstances or if some obstacle has arisen, please contact us at the number above.

Thank you for your help in this matter.

Sincerely,

Nick Eastmond

Nick Eastmond
Consultant

NE/dl

Site: _____

Date: _____

Admin. Tchr. Student

Interview Schedule for Site Visit

Introduce yourself. Establish rapport. Then ask...

1. To what extent have telecommunication classes been used in your school?

2. What has been your reaction to this type of class?

Probe: How useful is this type of instruction?

3. Are there some features of these classes which should be changed?

Probe: Avoided? Maintained? Improved?

4. What subject areas should be offered over a telecommunication system?

Probe: How many students would qualify (i.e. have the necessary prerequisites?)

5. (Teachers and Administrators) What are some potential courses for teachers over the telecommunications system which could be used for inservice and recertification needs at your school?

Probe: Do you have any suggestions for teachers?

6. Do you have any additional comments to make at this time?

APPENDIX C

Tables of Findings and Comments:

Administrators

TABLE C-1: Administrator Ratings of Telecourse Status and Levels of Students' Prerequisites With Total Rating Scale and Rankings (Question #1)

	Rating Scale						Numerical Scale					Total Rating Scale (2+3+4)	Ranking on Rating Scale
Administrators (n=53)	0	1	2	3	4	5	0	1	2	3	4		
1. Business Communications	6	6	10	4	4	21	3	2	7	13	10	18	19.5
2. Accounting	3	1	3	11	2	31	1	1	5	14	14	16	22.5
3. Shorthand	5	8	3	8	2	24	3	3	9	9	10	13	28
4. Marketing	9	5	17	6	3	8	4	4	12	7	6	26	11
5. Business Math	5	4	3	8	4	26	2	1	5	9	17	15	25.5
6. Introductry Programming	3	-	6	8	3	29	1	1	3	16	17	17	21
7. Advanced Comp. Science	4	-	20	5	4	16	-	1	16	14	9	29	6
8. Computer Applications	4	2	13	8	6	16	2	2	9	13	13	27	8.5
9. Beginning Spanish	1	-	5	8	5	31	2	-	5	10	15	18	19.5
10. Other	-	-	10	1	5	9	1	2	4	6	7	16	22.5
11. Art	1	1	5	10	7	28	3	-	3	10	17	22	16
12. English composition	1	-	1	11	4	33	1	-	3	7	17	15	25.5
13. Physics	-	-	5	12	9	26	-	-	9	17	8	26	11
14. Chemistry	-	-	4	12	5	30	-	-	7	13	12	21	17
15. Biology	-	1	1	9	5	35	-	-	5	7	18	15	25.5
16. Physiology	4	3	10	9	4	21	-	1	12	8	11	23	15
17. Sociology	7	2	11	5	4	19	1	2	10	3	14	20	18
18. Psychology	3	3	13	8	3	19	-	3	10	6	13	24	14
19. Amer.Gov't & Politics	1	2	1	7	4	34	1	-	1	6	19	12	29
20. World History	1	1	1	10	4	34	1	-	3	6	20	15	25.5

	Rating Scale						Numerical Scale					Total Rating Scale (2+3+4)	Ranking on Rating Scale
Administrators (Cont'd)	0	1	2	3	4	5	0	1	2	3	4		
21. A.P. Computer Science	4	2	25	6	2	7	3	1	19	9	5	33	4
22. A.P. English	1	3	16	7	4	19	1	3	14	10	10	27	8.5
23. A.P. History	2	3	15	7	4	19	1	1	15	12	8	26	11
24. Calculus	-	1	24	9	2	15	1	4	20	10	3	35	1.5
25. College Algebra	2	2	19	6	3	19	2	4	16	11	4	28	7
26. Trigonometry	1	1	15	7	3	23	2	4	13	11	4	25	13
27. A.P. Biology	2	5	24	4	2	8	3	3	15	9	7	30	5
28. A.P. Chemistry	2	4	27	6	2	7	3	4	18	7	6	35	1.5
29. A.P. Physics	2	6	25	6	3	6	2	4	19	9	3	34	3

TABLE C-2: Administrator Rankings of Items Indicated as Critical for Offering via Telecommunication (Item #2)

Most Critical for Telecomm.	Frequency Total	Rank
1. Business Communications	4	20
2. Accounting	2	25
3. Shorthand	1	28
4. Marketing	5	16
5. Business Math	3	23
6. Introductry Programming	4	20
7. Advanced Computer Science	9	5.5
8. Computer Applications	9	5.5
9. Beginning Spanish	4	20
10. Other	7	11
11. Art	2	25
12. English Composition	8	8.5
13. Physics	11	3
14. Chemistry	6	13
15. Biology	1	28
16. Physiology	4	20
17. Sociology	1	28
18. Psychology	4	20
19. Amer. Gov't & Politics	2	25
20. World History	5	16
21. A.P. Computer Science	6	13
22. A.P. English	17	1

	Frequency Total	Rank
23. A.P. History	8	8.5
24. Calculus	15	2
25. College Algebra	8	8.5
26. Trigonometry	5	16
27. A.P. Biology	10	4
28. A.P. Chemistry	8	8.5
29. A.P. Physics	6	13

STATEWIDE TELECOURSE SURVEY
Administrators Questionnaire

3. List teachers in your area (and subject area) who would be particularly effective in teaching over telecommunications.

Chris Kearl, Paul Webb, Daryl Nelson - Administration. RICH

Gary Turner, Cheryl Hardy, Susan Laueri, Carl North (drafting). WASATCH

Mr. Miller - Physics, Chemistry, Principles of Tech, Comp. Applications; Mrs. Evans - College and AP English; Mr. Robb - Drivers Ed; Mr. Hunt - College Math; Dr. Hartman - College Chem. & Biology. DUCHESNE

Larry Bailey - Biology; Doyle Rowley - Math, Physics; Dick Pincock - Math; Doug Wright - English; Bobbi Suttlemyre - English; Rosalie Payne - Accounting. SAN JUAN

Don Wilden - Math; Elroy Stucki - Computers; Susan Edwards, Nick Swain
Leeth DeWeese - Art. BEAVER

Janet Potter - English; Kevin Epich - Math; Earl Stock - Life Science. SEVIER

Bill Coster - AP History. DAGGETT

Aray Kolmier - Russian - French; Rodney Scott - Writing - Speech; Scott Thompson,- Art. CARBON

Grant Richins, Math - Computers. NORTH SUMMIT

Patti Parrott - Chemistry; Steve Morgan - Computer Science; Anson Call - Calculus. No sticker but code # 30-001

Our experience has been you cannot replace the teacher. We are experiencing greater student gains with teacher classes vs. Telecommunications. Code # 18-001.

7. List teachers or district personnel you feel would be particularly effective providing inservice over a telecommunication system. Also, note their area for inservice offering.

Judy Mayword, Foster Lott, Rodney Scott, Amy Kolmier, James Jensen, Scott Thompson CARBON

Computer literacy - Blaine Robertson, May Abraham. DAGGETT

Same as above. BEAVER

EEI - Bill Long, Garina McCarthy & 8 trained teachers. Clinical Supervision - Mel Walker, Bill Long; Bicultural - Al Kurpers, Lewis Singer. SAN JUAN

Larry Meplamapp - Elem. Ed & OBE, EEI; Mr. Robb - Drug Awareness; Mr. Burton -EEI; Various specials in area prep. DUCHESNE

Cecil Black - Kent Ellertson. WASATCH

Chris Kearl, Vernile Matheson, Jeanine Matheson. RICH

3. List teachers in your area (and subject area) who would be particularly effective in teaching over telecommunications.

Donald Willden - Computer; Margaret Miller - English; Enoch Swain - Computer; Dale Jensen - Biology, Physics. 02-708

David Galbriath. 05-704

Mr. Bill Carter - History. 06-704

Bruce Goodrich. 08-704

Robert Park. 08-712

Doug Bonzo - Composition; Glade Sorensen - Biology; Harold Shirley - English; John Pensis - Art; Richard Anderson - History; Kent Bishop - History; Steve Steffengen - Chemistry. 13-704

Clark Greenhalgh - Biology; Jay Woodard - Chemistry; Diane Lungo - M.S. P.E.; Alan Sperry - Health & Drivers Ed. 15-704

Christine Kearl - Math; Paul Webb - Biology; Cindy Batty - Business. 24-708

Richard Pincock - Math. 25-708

Les Good - Physics, College Algebra, Chemistry; Dixie Bond - English, College English; Debra Gardner - English. 27-708

Linda Monson - American Government & Politics - Tintic High School.
Janet Potter, Richfield High - AP English
Dean Bradshaw - USOE

We have 3 teachers who cover all subjects and they all could do a good job. 29-708

Patti Parrott - Chemistry; Anson Call - College Algebra, Trig. 30-712

Scott Harris - Social Science and HIstory; Kathy Mascard - English; Dale Higley - Math; Sherrie King - Business. 30-714

Paul Brooks - Calculus, Computer Programming; Heber Jones - AP Amer. History; Marilyn Wenzel - AP English. 33-704

Larry Esplin - Computers; Dada Stratton - Business; Wayne Edwards - Social Studies; Vance Wood - Science. 33-716

C. Kay Peterson - Science; Beth Bobsdahl - Home Ec.; Shirley Durfey - English. 34-704.

Carolyn Southerlin - English; Cheryl Hardy - All Business; Gary Turner - Science & Physical. 32-704

3. List teachers in your area (and subject area) who would be particularly effective in teaching over telecommunications.

Mr. Maughan, Mr. Leonard, Mr. Olsen, Mr. Miller, Miss Reevs, Mr. Gilget - 11-704

Spanish; Gene Drake / English; Mike Walker 16-704

Madlyn Haws - Social Studies; Susan Wilson - Business; Janene Alleman - Science; 10-708

Floyd Roberts - Physics & Math; Judy Morris - Computer Science & Spanish

Douglas Bjerregaard - Biology; Marie Sanders - Computer Science; Steven Lambertson - Chemistry.

Neal Peacock - AP History.

Jim Clarke; Debbie Pollock; Carl Shakespeare

Max Weiss - Sciences, Chemistry, Physics; Nance Stewart - English; John Foster - German. 08-708

Janet Potter - Earl Slack - Larry Black - Phil Johnson 26-708

STATEWIDE TELECOURSE SURVEY
Administrators

5. Please list courses or workshops in demand for inservice training in your district. These could be existing offerings or ones you believe should be created.	6. Please note any of these courses for inservice that would appeal to teachers in your district if offered over telecommunication.
Finance workshop for principals.	Computer Technology
Broadcasting, Measuring the difference (in student performance)	--
OBE, Math, sciences	same
Computer classroom management, Utah Core curriculum, OBE	Core and OBE
EEI Inservice, OBE Inservice, Drug Awareness, Subject Area Certification Inservice.	All of the above.
Essential elements of instruction, Gifted & Talented, Bilingual/Bicultural Instruction, Slingerland Multi Sensory.	All of them under the right condition and circumstances.
EEI, Reading, OBE	EEI, OBE
We have several science teachers under-qualified. We would like to also strengthen science instruction in our elementary schools	--
OBE, Teaching in classroom 1. Management 2. Improvement of inst.	All of the above
EEI, National Writing Project (Ut WP) Learning styles, OBE.	All would be used
--	AP Teaching Inservice
EEI, Classroom Organization & Management.	same as above
Computer Management, Math Inservice	Computer Management
Math, Computer Science	All - We already participate in USU COM-NET.
Mastery teaching, EEI, 4-Mat, Learning Styles, OBE.	None
Not set up for it.	--
Teacher certification	--
OBE	--
Effective Teaching Strategy Development, Implementation of the CORE Curriculum	Effective Teaching, Core Implementation
Subject matter specialty conferences/with workshops	

STATEWIDE TELECOURSE SURVEY
Administrators

5. Please list courses or workshops in demand for inservice training in your district. These could be existing offerings or ones you believe should be created.	6. Please note any of these courses for inservice that would appeal to teachers in your district if offered over telecommunication.
EEI Training	--
Essential Elements of Instruction, Assertive Discipline.	--
I would like to see some in subject areas that teachers teach - Eng. Math, Social Studies, etc. Also the following: Mastery learning, Essential Elements of Instruction and Effective Schools.	Subject areas that teachers - (refresh them in their sub. areas) Hopefully - Mastery learning, essential elements of instruction and effective school material.
OBE - Outcome Based Education; Core Curriculum workshop in each academic discipline. Instruction in the Affective Domain	All of the above.
Teaching Format in the content area. Glasser - Reality Therapy. Writing in the content area. Use of AP class curriculum and computer assisted instruction	All
Teaching critical thinking skills.	See above.
EEI - Mastery Learning - Learning Styles.	--
Essentials of Effective Instruction. Grading telecommunications classes and granting credit.	Any course available to teach could use inservice, ie. grading, records, strategies, etc.
Drug - Alcohol. Effective Teaching	Both
Courses in writing lab concepts; Language arts; science; math. All offered through USU as they have an extension office in this area.	not sure
Essential elements for instruction; discipline management; teacher effectiveness; motivation; Drug and alcohol abuse.	All
--	Courses leading to Masters degree in Ed. Adm. (school law, finance, supervision).
Time Management; Teaching Test Taking; Overlapping of writing skills with all other areas.	--
EEI; OBE; Vertical Accul	EEI
Presently of USU Telecom.	Above

STATEWIDE TELECOURSE SURVEY
Administrators

5.	6.
Computer Science	?
AP Courses in All areas. Business Courses - shorthand - accounting Art, Music	Advanced on honors all areas Remedial - all areas Art, Music
Computer workshops - technical software (W.P.) Essential elements of instruction	All. Very effective with quality instruction - (teachers)
Clinical Improvision; Outcome Based Education	OBE
Mathematics - all levels	all
Administration classes; Master Level classes in subject areas; classes on gifted; computers.	all
We have offered all of our teachers limited in-service on tele-learning. More are needed	Motivational courses, discipline courses modern literature, modern novel, biology/ chemistry, Time management.
Science and Math certification courses	All
Effective Styles of Teaching Teaching higher level thinking skills Questioning techniques	Effective styles of teaching

STATEWIDE TELECOURSE SURVEY
Administrators

7. List teachers or district personnel you feel would be particularly effective providing inservice over a telecommunication system. Also, note their area for inservice offering.

See # 3. 34-704

Dr. Steven Peterson - Law; Dr. Calvin Durfey - finance, supervision. 33-704

Randy Houk - Discipline. 30-714

Same as 3 above. 30-712

Most all sciences, math, language, social science, fine, arts, vocational, and etc. 15-704

B. Robertson - Effective Teaching Techniques. 06-704

Carolyn Southerlin; Cheryl Hardy. 32-704

Lawrence Esplin - computer science 33-001

Gene Drake - spanish; Mike Walker - English 16-704

Susan Wilson - Word Processing 10-708

Dr. Deael (?) Director of secondary ed.

Lavar Leonhardt; Neal Peacock

8. Please give any additional suggestions you might have using tele-learning to improve the curriculum choices and instruction in your school.

Accessibility

We believe every effort should be spent to get schools on the State Network and use 2-way Audio Video in place of more outdated methods.

We would like to see the microwave system expanded to include our district. Also satellite programs are of interest to us.

Offer the classes (some) outside the normal school hours.

My knowledge and understanding of your system is very limited. Never did I see it, other than the Spanish Program. I'm very cautious until I know and understand. We are not yet equipped for your programs.

Need to improve our pre-college level classes in small rural high schools, esp. in Math and Sciences.

Impact pre service training of teachers.

We are not really a rural school. We have over 1250 students and most of the courses you described above we offer here as a 3-A school!

Make it as interactive as possible. Look at the possibility of producing courses on CD-ROM or videodisc to be mailed out.

Vocational - House wiring, plumbing, building, welding, Ag. Mech, machine shop farming (many aspects), vocational opportunities.

We are now using the system for five classes. However, the advanced classes as indicated above would be an excellent addition to our curriculum.

Don't know enough about it to respond adequately.

Supplementary materials in all areas especially core.

Time scheduling - locking in on time to fit rest of schedule.

We mainly need foreign language (Spanish) and advanced math at our school. Presently we are not receiving any tele-learning. Budget cuts have really hurt our curriculum offerings.

Teach the school board and school administrators that there are other means and ways of teaching.

APPENDIX D

Tables of Findings and Comments:

Teachers

TABLE D-1: Teacher Ratings of Telecourse Status and Levels of Students' Prerequisites With Total Rating Scale and Rankings (Question #1)

	Rating Scale						Numerical Scale					Total Rating Scale (2+3+4)	Ranking on Rating Scale
Teachers (n=219)	0	1	2	3	4	5	0	1	2	3	4		
1. Business Communications	69	14	34	18	3	50	64	7	18	26	36	55	21
2. Accounting	49	4	13	26	6	93	55	2	17	25	50	45	27
3. Shorthand	51	7	16	20	6	89	58	4	16	33	35	42	28
4. Marketing	66	13	38	16	7	47	68	9	21	18	33	61	12.5
5. Business Math	47	11	19	26	7	81	53	6	9	21	62	52	25
6. Introductory Programming	39	8	18	35	5	84	45	3	18	19	65	58	16.5
7. Advanced Comp. Science	43	10	35	32	6	58	50	4	31	37	30	73	4
8. Computer Applications	46	6	36	42	6	49	45	2	29	30	42	84	1
9. Beginning Spanish	41	3	16	35	7	85	37	7	14	23	62	58	16.5
10. Other	38	4	13	17	3	36	38	3	11	10	27	33	29
11. Art	41	4	23	34	7	79	41	6	14	23	63	64	8
12. English Composition	40	6	13	38	4	87	40	5	11	16	75	55	21
13. Physics	42	5	24	42	8	70	39	4	28	46	31	74	3
14. Chemistry	39	6	11	40	8	84	36	2	20	33	45	59	15
15. Biology	41	7	4	44	5	92	39	2	11	27	64	53	24
16. Physiology	49	11	25	32	5	69	46	2	21	33	42	62	11
17. Sociology	54	12	32	26	3	56	53	13	18	14	39	61	12.5
18. Psychology	50	10	46	26	3	51	50	15	21	17	36	75	2
19. Amer.Gov't & Politics	44	7	12	37	8	77	39	5	9	18	64	57	18
20. World History	40	5	9	37	8	86	40	5	8	19	67	54	23

Teachers (cont'd)	Rating Scale 0	1	2	3	4	5	Numerical Scale 0	1	2	3	4	Total Rating Scale (2+3+4)	Ranking on Rating Scale
21. A.P. Computer Science	67	12	55	9	6	28	58	8	35	24	10	70	5
22. A.P. English	50	8	23	23	4	75	40	3	22	32	35	50	26
23. A.P. History	58	8	34	18	3	62	49	4	23	31	26	55	21
24. Calculus	53	12	36	24	4	57	50	11	40	27	13	64	8
25. College Algebra	58	9	38	19	3	55	50	9	38	17	27	60	14
26. Trigonometry	56	7	29	26	1	64	47	9	31	26	26	56	19
27. A.P. Biology	61	12	42	19	3	45	50	12	29	20	22	64	8
28. A.P. Chemistry	64	13	43	17	3	40	50	13	34	16	17	63	10
29. A.P. Physics	80	18	54	10	5	9	55	16	32	10	9	69	6

TABLE D-2: Teacher Ranking of Items Most Qualified to Teach (Item #2)

	Frequency Total	Rank
1. Business Communications	18	7
2. Accounting	16	10.5
3. Shorthand	15	12.5
4. Marketing	11	17
5. Business Math	20	3
6. Introductory Programming	10	19
7. Advanced Computer Science	7	24
8. Computer Applications	7	24
9. Beginning Spanish	9	21.5
10. Other	6	26
11. Art	7	24
12. English Composition	32	1
13. Physics	10	19
14. Chemistry	12	15.5
15. Biology	23	2
16. Physiology	12	15.5
17. Sociology	15	12.5
18. Psychology	13	14
19. Amer. Gov't & Politics	18	7
20. World History	18	7
21. A.P. Computer Science	4	27
22. A.P. English	18	7

	Frequency Total	Rank
23. A.P. History	10	19
24. Calculus	16	10.5
25. College Algebra	19	4
26. Trigonometry	18	7
27. A.P. Biology	9	21.5
28. A.P. Chemistry	1	29
29. A.P. Physics	2	28

4. Are you interested in teaching a class over telecommunications?

Spanish - Alyce Mutter - 34-704-05

Econ & Bio Earth - 33-716-02

Possibly. A telecommunications class in history at the resource (Special Education) level is badly needed. It could be done with University talent & technical advice. 33-704-17

Earth Science - Ray Odette 33-704-16

Maybe - need more information on format, hours, how and what. 33-704-15

Economics - Forrest Fonnesbeck 33-704-08

World History, Computer literacy. 33-704-07

Robert J. Comeford, Math Teacher, Dixie High School - College Algebra 33-704-05

Sociology; American Govt. & Politics; World History; AP History - Ron Tree. 32-704-16

Need to know more about the program -32-704-15

English Comp; AP English - 32-704-13

Trigonometry; College Algebra - 32-704-05

Business classes - 32-704-04

Any courses circled and health; advanced CPR, advanced 1st aid - 30-714-03

Pottery - 30-712-10

Literature; English Composition - Debra Gardner 27-708-06

Physical Geography; Political Geography - D. J. Wallace - 13-704-15

English or Drama - Anthony P. Pellegrini - 13-704-03

Playwriting - 08-712-02

Am. Govt & Politics; World History; AP History - Gerry W. Tuft -08-704-06

Business machines - Scott Brown - 08-704-05

Psychology - Virginia Richins 06-704-04

Russian/French/Geometry/AP History/ have all been taught from Carbon High School and transmitted to East Carbon High School for the last 2 years. 05-704-04

Psychology/Computer Applications/Programming - 05-704-01

AP English/ W. History/ AP History - 05-704-02

Physics - Dale E. Jensen 02-708-02

4. Are you interested in teaching a class over telecommunications?

AP English; English Composition- David L. Dunn

Vocational Auto Mecnanics; Vocational English Skills; Vocational Math for home and business; Current Events; Social Studies; Work Study-World of Work.

Art maybe - ___Nielsen

Any of the Social Studies classes; Stephen K. Greenwood 08-708-12

History, U.S. etc - 16-704-01

Any area in Vocation or Principles of technology, Industrial Arts - Brent Judd 16-704-01

English; State Standards - 10 & 11th grade - 16-704-01

Yes. I love it! I already have the fun. 26-708-02

Stewart Shaver - French/History 26-708-03

Accounting Rick Pruitt -26-708-11

Question 4. Are you interested in teaching a class over telecommunications?

29 YES	125 NO	6 maybe	18 no response
8	32	2	3
0	2		
3	5		1

5. List any courses or workshops that you would want for inservice training.	6. Are there any of these, in your opinion, that would lend themselves to delivery over telecommunications?
Utah Writing Project Seminars	-
Any on the gifted & talented. Any on the handicapped	Any of these
Workshop on teaching Sociology. I majored in Sociology, but that was 13 years ago. I have never taught a Sociology class in high school.	
Dominant Art; Printmaking	Yes, all.
Science workshops, Art workshops	Yes both
Art; 7th grade English, 7th grade social studies	Yes, all of them.
Suggestions for content and ideas of how to teach Physical - Earth Science.	Yes! See above. Include labs that we do not have equipment for.
Biology; Career Exploration; Physiology	-
Advanced math	yes
Geology, Ecology, Astrology (Bio-Earth) and (Physical Earth)	I would hope all would.
Chemistry; Physics; Geology	not qualified to say
Any Social Studies classes	All
OBE	
Computer programming and hardware	-
Library Science Courses; Computer technology and application in libraries	Either area. I know specific course titles 11-704-05
Computer Automotive; How to tune a car; Shupe math	math
Political Science; critical thinking skills	Yes
High School Reading Diagnostic & skills; AP English; creative writing	All

Psychology - for Counseling Certification; Drug & Alcohol Education; Teachers should be allowed to design what ever is given.	All
An inservice workshop that compares and contrasts the educational methods and curriculum of the United States and other leading nations in Asia, Europe, etc.	Yes, then the course could be taught by experts.
Labor Negotiations	Yes
Composition; Teaching learning disabled.	Any
None. I have taken telecommunications courses from Utah State. I find the classes to not be an effective teaching tool.	If the transmission was clear and presented in a way to keep and maintain student interest.
Computer Science; Math; English	All of the above
All inservice training and suggestions for Fine Art curriculum, both in print, video, telecommunications and state personel.	-
Workshops in painting; glazing and Decoration taught by Andrew Watson (Ben Lomond High) & Dan Gibby, Tooele Sr. High. Throwing Pottery Techniques.	Very much so.
Teaching Composition SKills	--
Literature Courses; Writing Courses	Yes
Technical and Report Writing Foreign language development - French I, III; Writing about literature.	All of the above
Math certifications	-
How to teach, grade, evaluate AP courses.	Yes, anthing about AP could be.
Anything to do with higher Math; I also would like all the training I can get regarding alcohol & drugs for Dr. Ed. & Health.	-
I would want to investigate all aspects of this before I could decide	History courses - Foreign Languages.
Anatomy & Physiology	-

College geometry - This is the only course I need to certify in Math. It is very expensive to drive to a campus.	Yes.
Math; computer	-
Teaching AP English; Teaching gifted and talented.	both
Math; Science; Computer	Physics; World history; Computers
Practical Computers How to use Computers for class records	-
Subject matter	-
Computer record management for teachers	no
Critical thinking workshop	Yes
Use of lasers in education Establishing & evaluating curriculum	yes, both
Inservice in your discipline or subject area.	no
none	Workshops in any of the subjects would be helpful, if one were to teach a class over telecommunications.
-	I think we would do well to work up a program for Marriage preparation, family life, budgeting in a family, and child rearing.
Sociology and psychology, Am. Govt and politics, A.P. History	All would. However there is presently such a course in sociology & psychology.
Reading for the non-reader. Social Social Skills, Behavior Modification	Yes, all of them.
Teaching strategies; innovative discipline techniques; ideas for better classroom management.	Yes
Self assertiveness	Self assertiveness
A. P. Physics	A. P. Physics
Discipline; grading on outcome against student himself.	either one
Any courses which would apply to district lane changes or Utah State Master's Programs.	History courses

5. Please list any courses or workshops that you would want for nservice training.	6. Are there any of these, in your opinion that would lend themselves to delivery over telecommunications?
Classroom Management - Foundations for Core Curriculum	?
Inservice training for completion of certification in Spanish Education.	Not sure.
OBE	Yes. OBE.
Masters program in Guidance & Counseling.	-
Student achievement - teaching mo[illegible] s	all above
Counseling classes	Psychology courses
none	
Making proper use of te[illegible]communications.	-
Just an awareness of what it is and how it works. Also, does the cost justify the results of such a project?	
English writing & Let. P.E., Athletics, Control of finances.	P.E., Athletics
Any computer science courses. Also courses that lead to a masters degree in something other than education, i.e., counseling, history, compters, etc.	I think most of them would to some degree counseling being the most difficult.
Because I have never used telecom before I really have no idea. This applies to these last 3 questions.	
Computer applications	Yes
What is available?	
Computer Aided Drafting	
Physical Science, Earth Science Biology	I don't know.
Adolescent Behavior	Don't know.
Computer applications	-
Time Management; Stress Management	-

Trigonometry; Calculus	Both would
Math classes	Math
PASCAL Programming; Advanced Athletic training	I think both of these could possibly be done over telecommunications.
Math courses; teacher training	?
Graduate work for teachers	-
I'd like an advanced math class (calculus) to "sharpen" my math skills as it has been quite a while since I had calculus	-
Special Education college classes that could be used for advancement; Health Education; Workshops for teacher education that could be counted as career ladder days to eliminate long distance travel.	Yes, all of the above.
I don't know ... but there is too much money invested in the system, to not take advantage of it to the fullest.	If you can teach history, chemistry over the system, one could teach the others also.
Teaching methods for English. Any college-level literature courses.	Yes. Both would.
Composition; discipline	-
Computer applications; computer programming; accounting.	All these could be done, but I think in person would be better.
A.P. Art	-
	Almost any would lend itself to telecommunications.
Instructional Delivery (Video)	Yes
Practical Application workshop	yes
Middle School Certification Courses Math Certification Courses	All of them.
Administration class in Legal Aspects of Administering the Public Schools	Yes -- A good teacher could do it.
I would need lead/prep time	either (4. Stewart Shaver French/History)
Biology Update Teaching study-learning techniques	-
12, 22	?
Computer Applications & Computer Programming	Yes

STATEWIDE TELECOURSE SURVEY
Teachers Questionnaire

7. Please give any additional suggestions you might have using tele-learning to improve the curriculum choices and instruction in your school.

To implement a few of the telecommunications at our school would be advantageous to the students. 34-704-05

I would like to see something in industrial arts and shop safety. E. Jackson 34-704-04

In Art: More training and technics/methods and less on theory and art appreciation. and history. 33-716-09

Where is U. S. History on your list? 33-704-15

Teach a course that teaches a student to study and work. 33-704-12

Make samples of courses available so we could see their content, to make better evaluations. 33-704-09

Telecommunications course need to be geared to the needs of those who receive the service, rather than to the coverage of ideology. 32-704-10

I have never really had any dealings with it and cannot give an opinion. 32-704-09

The French telecourse we have used this year has been very effective. 32-704-07

Guest speakers, for example - business executives. 32-704-04

Public school teachers need to design their own training for inservice. They know what they need far better than teachers in higher ed. 32-704-03

The only need in my opinion would be to help any students who have failed an above class and need to make it up. Also if there are students who may want an AP class that we do not teach at this time. 30-712-20

Foreign language: - short programs, e.g. plays, news, commercials, etc., available for video recording. 30-712-17

Tele-learning does not allow for interaction and feedback. 30-712-13

Telelearning has no feedback and doesn't allow for responses with the originator or facilitator. 30-712-09

Tele-learning to supplement text books used in the district.
Cultural enrichment for foreign language (French) 30-704-02

Vocational Core both Jr. and Sr. High. 29-704-04

In any course there needs to be a relationship between the pace the material is presented and the pace that which students actually learn. In too many cases in courses which I have seen in the past this is not monitored, but the TV blabs on and on with lost-frustrated students becoming discipline problems. 29-704-04

Provide money for equipment, TV's etc., training to teach both teacher & media personal on how best to use the system(s). 29-704-01

Question 7.

Several foreign languages could be taught. 27-708-06

Currently telecommunications is needed for a foreign language in our school. Motivated students would enjoy the AP courses for credit. 24-708-01

Hands-on followup such as worksheets. 16-708-01

Make them a little more entertaining so to keep the interest of the students. 15-704-07

I do not consider CHS a rural school which needs tele-communication. 13-704-21

It seems we are working hard for student total education or college preparation but we are failing in marriage, communication and general life preparation. Paul Gillespie. 13-704-18

Parenting skills, child development. 13-704-16

Make-up classes, at the high school level, in all required, state mandated, classes, ie., across the board language arts, physical and biological sciences, etc. 13-704-15

I work only with intellectual handicapped students so the telecourses do not help my students. 13-704-13

How to present a good public image. How to show your best part. 13-704-04

If every school offered one course over public TV, then students' core choices history, English, math, could be completed at home and more social classes could be taken at school. 13-704-03

I would like to see at least one class in each major discipline offered to teachers who wish to improve in their teaching area. It would also be helpful if they could obtain college credit for these classes. 10-704-01

This is essential to a school like Tabiona. I teach 6 classes and five preparations. I think that about says it. 08-712-02

People in the school who serve as resource people to help with labs and problem solving. 08-712-01

I think its very good - but more practice and expanded parameters needed. Films - Ed. programs. 06-704-06

Is it possible to offer another language i.e., German? 06-704-05.

It concerns me that the principals of the high schools serviced by NUES are not interested in AP American History for next year. My understanding is they want college classes, whereby the students might receive college credit. I have applied to Utah State to be an adjunct professor but they are balking at the idea. 06-704-03

Question 7.

I would like to see a senior-level or AP English class offered. 06-704-02

These courses take the students out of the classes we enjoy teaching. We are with the dull average students. 05-708-04

We have been us it. Scheduling, including extracurricular activities, must be coordinated problems arise. 05-704-04

Using local Jr. College link & transmitting classes to and from. Satellite Dish links to 3 schools in District. 05-704-01

Literature and speech courses could also be telecast. 05-704-02

Remedial Courses for Spec. Educ.
1. Math (consumer and life skills)
2. Sociology (problem solving). 02-708-01

I believe that telecommunications courses are a great idea for rural schools with small student populations; I encourage your efforts.

A near complete offering of courses leading to some college degrees.

Offer some telecommunication classes that are graduate degree-oriented for teacher education.

Make the tele learning interactive.

I do not believe that these programs have any impact on education!

Not qualified to say -- I'm not the administrator

Would be valuable with enough equipment for student feedback.

Photography introduction or values clarification classes.

Taped programs to use as our schedule permits.

Taking retirement after this year!

I'm not familiar with tele-learning but do see great opportunities with it.

We need more information centered around High Technology.

Educate Rural teachers as to times and uses. Most don't think to use the courses availab

A series featuring old classic films which are frequently a part of our literature anthologies or other curriculum ... see current anthologies and novels used for H.S. study.

I see no reason that the Health classes couldn't be taught over TV.

APPENDIX E

Tables of Findings and Comments:

Students

TABLE E-1: Mean Student Ratings of Telecourse Status and Percent Indicating Possession of Necessary Prerequisites, with Standard Deviations and Ranking by Means (Item #1)

	Percent Indic. Possession of Necessary Prerequisites	Mean Rating (Scale=1-5, 5 high)	S.D. of Ratings	Ranking by Means (1= high, 29=Low)
1. Business Communications	29	3.49	1.18	4
2. Accounting	30	3.36	1.20	10
3. Shorthand	10	2.60	1.19	28
4. Marketing	07	3.04	1.23	23
5. Business Math	18	3.38	1.28	7
6. Intro. Programming	20	3.68	1.19	1
7. Advanced Computer Science	08	3.41	1.20	6
8. Computer Applications	08	3.58	1.19	3
9. Beginning Spanish	18	2.52	1.27	29
10. Other	10	2.94	1.44	26
11. Art	22	2.62	1.25	27
12. English Composition	35	3.64	1.19	2
13. Physics	23	3.18	1.18	15
14. Chemistry	25	3.16	1.22	16
15. Biology	34	3.32	1.22	11
16. Physiology	11	3.14	1.23	17
17. Sociology	06	3.12	1.18	18
18. Psychology	07	3.22	1.20	12
19. American Gov't. & Politics	12	3.36	1.26	9
20. World History	26	3.21	1.23	14

21. A.P. Computer Science	06	3.37	1.33	8
22. A.P. English	11	3.43	1.30	5
23. A.P. History	09	3.11	1.29	19
24. Calculus	10	3.08	1.34	20
25. College Algebra	09	3.21	1.35	13
26. Trigonometry	11	3.05	1.34	22
27. A.P. Biology	12	3.07	1.26	21
28. A.P. Chemistry	07	3.02	1.30	24
29. A.P. Physics	06	3.01	1.32	25

TABLE E-2: Frequency Distribution of Student Interest and Ranking by Frequency (Item #2)

	Frequency Total	Rank
1. Business Communications	72	1
2. Accounting	53	5
3. Shorthand	43	8
4. Marketing	40	10
5. Business Math	33	15
6. Introductry Programming	61	3
7. Advanced Computer Science	44	7
8. Computer Applications	56	4
9. Beginning Spanish	20	22
10. Other	41	9
11. Art	36	12.5
12. English Composition	51	6
13. Physics	31	16
14. Chemistry	35	13
15. Biology	29	17
16. Physiology	26	18.5
17. Sociology	39	11.5
18. Psychology	64	2
19. Amer. Gov't & Politics	39	11.5
20. World History	26	18.5
21. A.P. Computer Science	36	12.5
22. A.P. English	34	14

	Frequency Total	Rank
23. A.P. History	17	24
24. Calculus	25	19
25. College Algebra	23	21
26. Trigonometry	11	25
27. A.P. Biology	24	20
28. A.P. Chemistry	18	23
29. A.P. Physics	9	26

4. What are your plans in the two years following your high school graduation?

(comments for "Other")

Air Force	5
Mission	27
Bryman School	1
No Plans	11
Hari Krisna (?)	1
Army	11
Beauty School	5
Work	18
National Guard	1

5. Are you interested in advanced placement (AP) classes for which university credit would be available?

277 YES 94 NO

84 29

2 14 0

6. Please give any additional suggestions you might have using tele-learning to improve the curriculum choices and instruction in your school.

None

I have none.

I have none.

I think it should be made more convenient to use both in school and home.

My suggestion would be to offer courses that people would use in every day life.

Make the programs more available.

What is this for?

Be faster taught. Not so crowded.

More foreign language classes, i.e. French.

Go for it.

None -- sorry.

World Geography

Animal Science

Have someone come to our school & discuss the program.

question 6. continued.

Do these before or after school hours so that the students could take them as well as high school classes.

Get rid of English.

Give very define instructions so the student knows exactly what is happening in their class. Also be in order of learning as in steps 1-2-3 instead of 3-2-1.

Agriculture classes.

Color TV. Good sound.

Make sure its a color TV

Color TV. Pretty girl teacher.

Maybe have them on video cassette so you can do it at home or at school without the help of a teacher.

I think it would teach us better and would help us to learn more.

Have the tapes recorded so you can check them out over night so you can keep school classes full. Also you can take classes at home as well as at school.

I think we should get this to give our smaller schools more of a chance.

I think it would be hard because you couldn't show what your problems would be. And a lot of kids have a hard time explaining things.

I think that it would help me improve my grades and learn more about the type of career I want.

I think we need a better variety of foreign languages instead of just Spanish.

I am going to study business in college and I want more classes to prepare me.

question 6. continued.

It seems like a system that would be difficult to teach to a class of 25-30 children.

I don't feel like students would be able to learn as much from this type of system as if a teacher was in the room and able to interact and help the students.

Should be available as soon as possible to anyone who could really use it.

Make it classroom oriented so students could discuss what they learned.

They might use tele-learning to talk about the courses being offered for the school.

Auto-shop, metalworking.

I suggest that we have actual teachers who have gone to college and know their subjects instead of confused coaches teaching U S History and Biology.

Have more foreign languages available! Better drama classes. Soccer team.

Will you be able to ask questions?

I don't like it. How are you supposed to be helped? You can't ask a T.V. questions.

I think it would be a lot easier.

I don't know much about the quality of tele-learning. It may be a more effective way of learning or it may not. I think this survey might hold more value if handed out to be answered after those filling out the forms have experienced such a class (such as a one class experiment).

I just think that it would be a little bit harder learning that way because it's hard to ask the TV a question; it would be less personable.

I think we should have some of these classes also offered after school counting toward our graduation.

More people would probably graduate and go to college.

I personally have never experienced this type of learning. But it sounds like a good idea.

More mechanic classes.

Teach hall beder nexed year.

I would really like to see a German III or a higher level. It is only offered 2 years and it is a great language. It is difficult but it can be just as fun or even more so than the others. I'm really excited about this and am really glad you are considering on doing it. Psychology is great!

question 6. continued.

I don't think that I would be to interested but as for a learning technique I think it might be good.

Need Russian as a foreign language because if we go to war it would more than likely be with them.

The way I feel using the tele-learning could help our school is the point there aren't many classes to chose from and if we had a larger selection we might get more people interested in school. That would help attendents, dropouts and our community. Thank you.

Second year classes to those that are already offered such as accounting.

Well it might help the kids understand what classes they have and help them understand the classes and maybe learn them better.

It would be great - even a home-study program like after school hours to get credit away from school and learn more. Not replacing a class in school for this, but doing it after school.

I disapprove of this program. This money could be used for extra curricular classes since the budget took a lot of money from this area.

I think that money going toward this could be used for something more useful.

I would like an A-B day schedule. That way we would have more time with the instructor.

Have the teacher in the classroom and not in the studio when the teacher is from your school.

Offer more of a selection of foreign languages. Give us more than just Spanish to choose from.

Myself, to be honest, I don't think it works. I think the students need to have a teacher in the room teaching. I am a Junior and from what I have seen the courses seem to be more of a goof around than what they are worth. So what I am saying is I don't think we should even have it.

The telecommunication would be better with the teacher than without, especially with one qualified in that area.

Have the classes available when other required classes aren't to be taken at the same time.

I think it would help a lot of people learn more about what they need to and what they want to learn. Would be a good experience!

Have a teacher that is experienced in the subject so he can help you when you need it.

Learn more about classes that usually wouldn't be taught.

I think that some courses can be taught this way but some of the more difficult classes in the math and science shouldn't be taught this way.

question 6. continued

Computer programming

Offer more business classes, like the careers class, only in more depth.

I would like more computer instruction classes.

None.

Good stuff.

No suggestions.

No suggestions.

Give teachers more authority how to teach the classes.

Burn it down.

None

Vocational classes (metals, woods, graphics).

Naturally courses which are already offered at High Schools aren't really needed through tele-learning, but advanced placement classes or extended classes would be extremely beneficial, especially at smaller schools such as ours.

Have more science and math classes in the rural schools.

Ask the students what they would be interested in taking, and take the majority ideas.

Sounds great!

Visual contact through tele-communications.

Improve on that DRAW program.

I think the program works well - the only thing I don't like is not being able to talk face to face with the teacher.

Mechanics, Electronics, Technology.

Altamont High doesn't offer much as a school, so it doesn't really prepare us for college. I feel this program will be an addition to the schools education system and will help the students be prepared for college.

I think its quite interesting.

question 6. continued

No suggestions

Offer these courses to those who are smart enough to handle them. Offer them to everyone . . . not just seniors. Offer more Vo. Ag. courses.

More Ag classes ext.

Have it available for more people to take it.

An auto mechanic class or some class to do with cars and trucks.

Try to get as many people involved as possible.

None

None

Add any Health classes or Nutrition classes! This school needs some for juniors and seniors!!

Individually paced classes.

I think that the tele-learning cannot even compare to having a teacher in the classroom.

Music