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A Study of the Personnel Problems Associated with Instructional Television

Patrick Joseph Kennedy
Central Washington University

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A STUDY OF THE PERSONNEL PROBLEMS ASSOCIATED
WITH INSTRUCTIONAL TELEVISION

A Thesis
Presented to
the Graduate Faculty
Central Washington State College

In Partial Fulfillment
of the Requirements for the Degree
Master of Education

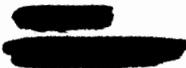
by
Patrick Joseph Kennedy

June 1965

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INFORMATIONAL REPORTS
SPECIAL COLLECTION

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APPROVED FOR THE GRADUATE FACULTY

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CHAPTER I

THE PROBLEM AND DEFINITIONS OF TERMS USED

Colleges and universities in the United States are faced with the serious problem of increasing enrollments and a scarcity of well-qualified professors. This problem also exists at Central Washington State College--matching quantity with quality. This problem requires that a new look be given instructional television and the personnel problems associated as a possible solution.

I. THE PROBLEM

Statement of the problem. The purposes of this study are: (1) to identify instructional problems which could perhaps be solved with instructional television at Central Washington State College; (2) to compare the requirements and functions of personnel used in conventional teaching at Central Washington State College to the requirements and functions of personnel required if instructional television were utilized; (3) to indicate in what ways instructional television could improve instruction at Central Washington State College; (4) to make recommendations for using instructional television in solving curriculum problems at Central Washington State College.

Importance of the study. Like most college and university faculties, a large percentage of the Central Washington State College faculty employ the lecture method to present information to students. Some Central faculty members also use discussion and student questions in their teaching. In many instances, perhaps these lectures could be presented more effectively via television than with the present conventional techniques.

Professors at Central Washington State College lecture on the same subject to many different classes in classrooms and auditoriums. This duplication of effort could be reduced to a minimum by sharing lectures via television. Professor time thus released from lecture preparation can be put to effective use in student consultations and in imaginative integration of additional classroom discussion and lecture materials.

More important than its efficiency in bringing information to large numbers is the effect that television is having in improving the quality of education which students receive. Most professors desire to include in their lectures more and better illustrations of their ideas--specific demonstrations of what is meant. This is especially true in science, but it applies even to abstract subjects such as philosophy. Since television is an audio and visual medium,

illustration can be integrated into presentations for more effective teaching.

Limitations of the problem. This study will deal with the personnel problems associated with instructional television. It will be concerned primarily with: (1) instructional television at Central Washington State College particularly as related to courses in which 200 or more students are enrolled during the academic year; (2) the number of personnel required in the production of television lessons; (3) whether increasing enrollment is a factor for televising certain courses; (4) faculty teaching load with and without instructional television; and (5) the utilization of graduate assistants in conventional and instructional television programs.

II. DEFINITION OF TERMS

Large-section classes. Throughout this paper the term "large-section classes" shall refer to those classes which are composed of four or more sections.

Large classes. The term "large classes" shall refer to those classes having an enrollment of 200 or more students.

Educational media. Throughout this paper the term "educational media" shall be used to describe pertinent

materials and technological devices: television, teaching machines, programmed learning material, and electronic learning laboratories. It also includes many well-established audio-visual media such as motion pictures, filmstrips, slides, and recorders. The term has not been widely accepted.

Programed instruction. The term "programed instruction" shall refer to a sequence of carefully constructed items leading the student to mastery of a subject with minimal error. The distinguishing characteristic of programed materials is the testing procedure to which they are subjected. Empirical evidence of the effectiveness of each teaching sequence is obtainable from the performance records of students.

Response. Programed instruction may involve the production of a single word or phrase or it may involve selection among alternatives. It shall refer to the latter in this paper except where otherwise noted.

Closed-circuit television. A television system which limits distribution of an image to those receivers which are directly connected to the origination point by coaxial cable or microwave link.

Personnel. A body of employees that is a factor in a business or organization, especially with respect to efficiency, selection, training, and health.

CHAPTER II

REVIEW OF RELATED RESEARCH

Television has been widely used for the presentation of regular classroom instruction for approximately eleven years. In this short time instructional television has probably been subjected to more research than any other instructional innovation. Perhaps this is because the use of television has appeared to threaten the position of the classroom teacher. Or, because of the costs of installation and operation of television facilities, advocates of instructional television have had to produce a great deal of evidence to support its use.

Because there has been no research done on instructional television at Central Washington State College, the review of literature will attempt to: (1) present proof that instructional television is an effective tool at the college level, and (2) show how other institutions similar to Central Washington State College utilize personnel in their instructional television program.

John L. Burns, President of the Radio Corporation of America and a former teacher at Harvard and Lehigh, said that there exists today an "educational gap" that is far-reaching in its implications as any so-called gap that might confront our country (6:4).

Dr. Herold Hunt, Professor of Education at Harvard, said, "television is the best hope for bringing today's restrictive and unimaginative educational system out of the oxcart age and into the 20th century" (3:2).

Arnold Perry, dean of the University of North Carolina's School of Education, said, "the weight of evidence is overwhelmingly in favor of teaching by television" (15:5).

James D. Davis, manager of closed-circuit television at Michigan State University, believes television teaching offers several advantages: (1) Fewer instructors are needed. One instructor can teach an unlimited number of students. (2) Students are taught by the best possible instructors. (3) It is the only way that a large number of students can receive the same interpretation of the lecture material (3:3).

John Woods, pioneer Humanities instructor on teaching by television at Western Michigan University, feels television classrooms have been very successful. "I miss most," states Woods, "the feedback of the students while delivering the lecture, but find television instruction most stimulating and rewarding" (7:2).

Terry F. Lunsford, Director of the WICHE Special Regional Programs, states that scores of careful studies have compared student achievement in televised courses and conventional classroom instruction in a variety of subjects. In the great majority the result has been "no statistically

significant difference." In other words, students learn just about as well from televised instruction as in a regular classroom (22:1).

In the fall of 1964, Michigan State University taught more than 19,000 students with closed circuit television. Classes included speech, veterinary medicine, economics, and typing. MSU programmed 109 hours of closed circuit TV each week. This has helped MSU solve the college level teacher shortage and also enabled each department to select its most qualified instructors to lecture on closed circuit TV. A recitation instructor is present in each classroom receiving a televised lecture. This enables the students to stop the lecturer by calling on the phone through the recitation instructor in the event a student wants something clarified. No more than twenty-five students view a TV set at one time. This means that some classrooms use more than one receiver to insure each student's participation.

MSU feels that some courses are not applicable to television teaching. Three examples are philosophy, English literature, and psychology. These classes are taught best when there can be an unlimited exchange of ideas between the professor and the student (22:4).

Pennsylvania State University is another example of television making it possible for fewer teachers to present information to many more students. At Pennsylvania State

University televised lectures have been used successfully in subjects such as accounting, American history, anthropology, calculus, economics, education, music, psychology, and sociology, with course enrollments ranging from 169 to more than 800. Student achievement has not been impaired; faculty lecturers have been employed efficiently; and in most large-section courses students have indicated they prefer lectures on television, where "eye contact" is possible with the lecturer (16:7).

The University of Utah telecourse in physical geography illustrates how instructional television can improve the quality of instruction. Films, mechanical models of the solar system, and aerial photographs of mountains and plains are used to illustrate the instructor's lectures. Students see only a smooth flow of compellingly realistic illustrative materials as they hear the voice of the lecturing professor, who usually appears on the screen only to introduce and close the presentation. Discussions with classroom instructors help to answer their questions (16:5).

Student observation of events as they actually occur has long been thought a valuable part of education--especially in training teachers, physicians, and other professionals.

Television's power to bring immediate events with great realism into the classroom, without disrupting the events themselves, has been used very effectively.

At the University of California (Santa Barbara), three instructors in an introductory biology course had to deliver simultaneous lectures to small classes in different rooms. Now, via closed-circuit television, each instructor delivers one-third of the course lectures to all students in the course, covering the areas in which he is most competent. He is therefore able to spend more time on tutoring students and on independent research (22:2).

Some teachers are better at lecturing than others because of greater experience, longer preparation, or the accident of personality. Other teachers are good discussion leaders, student counselors, or creators of classroom teaching aids. Television is helping to encourage specialization by teachers in many schools so that each does what he can do best.

Contrary to much opinion, most classroom teachers do not resent the presentation of a good lecture in their classrooms via television. The best classroom teachers see this as what it is--another resource, like a textbook or a blackboard, to be used to advantage in helping their students learn.

In addition, there are some teachers and scholars in this country whose abilities and knowledge cannot be duplicated. Greater numbers of students in many more colleges are now able to see and hear some of these great teachers

through the cooperative use of televised lectures.

Walter Prescott Webb, the famous Western historian, now lectures on The Great Plains to hundreds of students in eight Texas colleges. Most students taking this credit course would have had little chance to receive history instruction of such quality without the help of TV.

As an unexpected "side effect," teaching via television has led many teachers to improve their own skills in the preparation and presentation of classroom assignments. Besides having more time for preparation in many cases, teachers who know that their colleagues will see them on television are anxious to be at their best in every lecture. Most find that they become much more aware of the teaching process, its problems and its successes, than they were when each led a single class in the privacy of a closed room.

Good TV teachers in turn, however, are providing inspiration and good examples to many new or inexperienced classroom teachers, who had never been free to study other teachers' skills since beginning their own teaching careers. The result, some educators feel, is a distinct upgrading of teaching skills because of television's influence (22:4).

Three other institutions of higher learning that have found instructional television beneficial to their educational programs are Hunter College, Western Michigan University, and the University of Akron.

In February of 1961 Western Michigan University, with the aid of several grants, took its first step into the world of television through two courses taught over a closed circuit line. A survey of the first courses taught over television showed that 67 per cent of the American Government students found the television lecture sessions better than the regular courses. Forty-nine per cent of the Humanities students also found television instruction better. Eighty per cent of the American Government students thought the television sessions were well prepared and clear. Sixty per cent of the Humanities students listed television lectures over normal classes in regard to preparation and clarity. A composite of the two classes showed that 72 per cent of the students thought the television lectures were generally interesting and stimulating.

The students listed many advantages in the television classroom. Among them were that classes were available to a larger number of students. They also felt more ground was covered in less time and that there was a better use of audio-visual aids. In general, most of the students felt televised instruction was superior to normal classes (7:2)

Also in February of 1961 The University of Akron began using closed-circuit television in its classrooms. Following demonstrations on campus a month earlier for a dedicatory ceremony and open house, the new TV network

began beaming its programs into classrooms on a regular basis at the beginning of the University's second semester.

The programs for the \$64,000 system cover courses in public speaking, analytic geometry, science, and education. The foresight displayed by University officials in bringing closed-circuit TV to the campus has helped in part to solve the problem of securing enough qualified instructors to adequately handle the increasing number of students enrolling in the University. With sets placed in any given number of classrooms at the University of Akron, one instructor can teach assemblages of students, limited in size only by the physical facilities available on campus. Thirty-five classrooms are presently equipped for TV reception. As high as six sets may be placed in one classroom, allowing a clear view of the instructor or any demonstration he may be performing. Presently, up to 1,100 students may view a particular class given by one instructor (4:3).

Summary

These universities and colleges have found that the use of closed-circuit television in teaching large numbers of students has enabled them to serve more students more effectively with the able teachers already on their staffs. By helping teachers to share their teaching tasks, and by allowing lecturers to reach greater numbers of students, television has made teaching more efficient. This is resulting in better

use of a scarce educational resource: faculty time and effort. In sharing the lecture portions of their courses, many teachers are now able to spend more time in discussion with individual students, in preparation of better lectures, and in independent research or study for self-improvement. Therefore, instructional television is proving to be a powerful tool for enhancing the art and prestige of teaching and for bringing to the student richer, broader, and deeper learning experiences.

CHAPTER III

METHODS AND PROCEDURES

The descriptive survey was employed in this investigation of the personnel problems associated with instructional television at Central Washington State College. Central Washington State College records surveyed included International Business Machines data processing sheets on course descriptions and number of class sections and the size of individual classes from 1960 to 1965, class schedules, and Central Washington State College catalogs. The files in the Central Washington State College Periodical and Audiovisual Libraries were very helpful.

Department chairmen of the following departments were interviewed to gain further information on crowded class conditions and use of graduate assistants and staff: the Departments of Art, Biological Science, Chemistry, Economics and Business, Education, English, Hebel Elementary, Music, Physical Education, Psychology, and Speech and Drama. Also interviewed were the Director and Assistant Director of Bouillon Library, the Dean of Men, Dean of Women, Dean of Education, and Director of Research.

Other sources surveyed were books, pamphlets, periodicals, brochures, and articles relating to instructional television and its uses in higher education.

Some data were secured through interviews with persons long associated with the college and community in which it is located. Local and general authorities on closed-circuit television, investigations of the development of the uses of television at other institutions, and general works on the history and utilization of television in education provided background for the present study.

The problem of this study can be stated as an attempt to solve some of the personnel problems associated with instructional television at Central Washington State College. The purpose of the study was to identify the personnel problems associated with instructional television at Central Washington State College; to compare the requirements and functions of personnel in instructional television and the conventional classroom at the college; to indicate in what ways instructional television could improve instruction at Central; and to make recommendations for using instructional television in solving curriculum problems at this institution.

The study was limited to large-section classes and included: (1) the utilization of the television instructor's time; (2) the question of released time; (3) the use of video tape; (4) class load; (5) salary; (6) the most effective use of graduate assistants and staff.

The procedures used to solve this problem were:

(1) a review of the literature at Central Washington State

College to determine whether the use of instructional television might help solve personnel problems; (2) a survey and analysis of the academic departments to identify the large-section classes and the different ways in which personnel are utilized at Central; this was accomplished by searching Central Washington State College class schedules (1960-65) and picking out those courses that enrolled 200 or more students for the academic year; (3) devising a questionnaire from the findings above and sending it to institutions with similar problems, and (4) making recommendations for Central Washington State College from the analysis of data derived from the questionnaire.

The institutions were selected from The 1965 Compendium of Televised Instruction published by Michigan State University. Colleges and universities were selected which had already solved personnel problems similar to those that exist at Central Washington State College by using instructional television. These institutions were selected on the basis of two criteria: (1) The classes they taught using instructional television were large-section, and (2) the courses were similar to large-section courses at Central Washington State College. To be quite certain that the courses chosen from the compendium were similar to those taught at Central Washington State College, the individual

college and university catalogs were consulted, searched, and compared with the Central catalog.

Each selected institution was sent a general questionnaire and a specific questionnaire for each course that the compendium listed as taught via closed-circuit television and met the criteria. The plan involved securing from the institutions which met the criteria for selection replies to the general questionnaire and specific course questionnaires.

The general questionnaire concerned the number of full-time and part-time personnel (including student help) involved in the production of television lessons; how long instructional television programs have been produced; whether increasing enrollment was a major factor in utilizing instructional television; and whether difficulty in obtaining a teaching staff was a major factor.

The specific course questionnaire includes information on the length of time the course had been televised; whether increasing enrollment in a certain academic area, lack of adequate classroom space, and difficulty of obtaining a teaching staff were major factors for televising the course; whether the course was video taped; class sessions per week and their length; the utilization of full-time and part-time personnel in producing the course; and a course evaluation.

Summary

A review of the available literature was surveyed to obtain an understanding of the personnel problems associated with instructional television and to aid in the development of an effective instrument to determine how these problems might be solved.

The following methods and procedures were used to obtain data for this study. First, a thorough and systematic search for information was made on the Central Washington State College campus. This involved an examination of the files in the Audiovisual Library and the Periodical Library; and contacting the heads of all academic departments, the Offices of the Dean of Women, the Dean of Men, and the Office of Research. Other sources surveyed were books, pamphlets, periodicals, brochures, and articles relating to instructional television and its uses in higher education. The basic purpose of this search was to determine which academic areas are crowded on the Central campus.

The Descriptive Survey method was employed to report the evidence gathered through the use of a questionnaire. The instrument itself resulted from a survey of the literature at Central Washington State College and visits with the people in charge of the offices and departments on the Central campus.

The questionnaire was sent to colleges and universities selected from the 1965 Compendium of Televised Instruction published by Michigan State University. The criteria employed was "course similarity" between Central Washington State College and the selected institution.

CHAPTER IV

ANALYSIS OF THE DATA

The findings of this study were determined by an analysis of the personnel problems associated with large-section classes (200 or more students enrolled during the year) at Central Washington State College campus and from information derived from a questionnaire sent to thirty-nine institutions of higher learning which have solved similar problems using instructional television.

I. CONVENTIONAL TEACHING

Identification of large-section classes. An analysis of the registrar's records revealed twenty subject areas which had 200 or more students enrolled during the 1965-66 academic year. They were: Art 100, Introduction to Art; Biology 102, General Biology; Education 207, Introduction to Education; Education 314, Curriculum Methods and Materials; Education 319, Cursive and Manuscript Writing; Education 322, The Teaching of Reading; Education 323, The Teaching of Arithmetic; Education 420, The Teaching of the language Arts; Education 490, Seminar in Educational Problems; English 101, English Composition; English 105, Introduction to Fiction; English 201, English Composition; English 301, English Composition; Geography 100, World Geography; Health

100, General Nutrition; Psychology 100, General Psychology; Psychology 309, Human Growth and Development; Psychology 310, Learning and Evaluation; Sociology 107, Principles of Sociology; and Speech and Drama 201, Public Speaking.

To illustrate the growth of large-section classes at Central Washington State College, several examples can be cited. In 1960, General Biology, Cursive and Manuscript Writing, The Teaching of Reading, Teaching of Arithmetic, and The Teaching the Language Arts had no large-section classes. In 1965, General Biology had 12 sections, Cursive and Manuscript Writing had 14 sections, The Teaching of Reading had 14 sections, The Teaching of Arithmetic had 12 sections, and The Teaching of The Language Arts had 11 sections. All of the other subjects listed in the identification section were already large-section areas in 1960 and since that time have grown larger. However, it should be noted that data was not available for all years (1960-1965) or in all subject areas. Table I summarizes the growth pattern of the present large-section courses.

Class size and teaching load. Both class size and faculty teaching load have remained relatively constant since 1960. Class size has been held to an average of twenty-five students. The faculty teaching load was sixteen hours in 1960-1962. Since that time, it has been reduced to twelve

TABLE I
GROWTH PATTERN OF LARGE-SECTION COURSES

Courses	Enrollment By Years											
	1960		1961		1962		1963		1964		1965	
	No. of Sections	Enrollment	No. of Sections	Enrollment	No. of Sections	Enrollment	No. of Sections	Enrollment	No. of Sections	Enrollment	No. of Sections	Enrollment
Art 100	23	575	23	575	22	550			8	200	16	400
Bio. 102									8	200	12	300
Ed. 207	14	350	15	375	8	200	10	250	11	275	17	425
Ed. 314	14	350	19	475	15	375	16	400	16	400	19	475
Ed. 319					8	200	12	300	12	300	14	350
Ed. 322							4	100	13	325	14	350
Ed. 323											12	300
Ed. 420									4	100	11	275
Ed. 490	11	275	24	600	19	475	19	475	21	525	26	650
Eng. 101	23	575	30	750	34	850	27	675	42	1050	44	1100
Eng. 105											13	325
Eng. 201	15	375	15	375	15	375	19	475	20	500	22	550
Eng. 301	10	250	4	100			5	125	15	375	19	475
Geo. 100	12	300	14	350	14	350	14	350	14	350	15	375
Health 100	17	425	23	575	13	325	22	550	9	225	14	350
Psych. 100	15	375	12	300	14	350	16	400	16	400	18	450
Psych. 309			14	350	15	375	15	375	18	450	27	675
Psych. 310	12	300	15	375	13	325	15	375	19	475	24	600
Soc. 107									12	300	17	425
Speech 201	15	375	18	450	17	425	19	475	20	500	21	525

hours. Central Washington State College anticipates an increase in student enrollment of 800 per year up to and including the year 1975. If the faculty teaching load is to be held at 12 hours and class size at approximately 25 students, more than 30 faculty members must be added to the existing staff every year for the next 10 years.

Faculty salaries. Faculty salaries at Central Washington State College are commensurate with salaries paid at other institutions of higher learning and have increased steadily. In 1962 the average faculty salary for nine months was \$8402.00; in 1963, \$8687.00; in 1964, \$8889.00; and in 1965, \$9200.00. The projected salary increase is six per cent per year for the foreseeable future.

The increase and use of graduate assistants. The utilization of graduate assistants at Central Washington State College has grown rapidly within the past few years. Unfortunately, data concerning the use of graduate students was not available for 1960-62. In 1963-64, 14 graduate assistants were employed by the college. The cost to the college was \$275 per month or \$27,750 per year. In 1965-66, 27 graduate assistants were utilized by the academic and non-academic departments at a cost to the college of \$6275 per month or \$50,200 per year.

At Central Washington State College graduate assistants have been utilized in a wide variety of ways. However, their duties usually involve assisting with research, grading papers, and teaching a professor's class only occasionally. There are also graduate assistants who have specific job assignments within a department. The graduate assistants in the Dean of Women's Office and the Dean of Men's Office would fall into this latter category.

Of the twenty-nine respondents who answered the section in the questionnaire relating to the utilization of graduate students, only four institutions indicated that graduate students were used to teach classes.

All the departments on the Central Washington State College campus were hesitant to attempt to predict the number of graduate assistants they would employ over the next ten years. There were two reasons for this: one, the uncertainty of available funds; and two, the problem of finding graduate students with specific skills necessary within a given department.

Cost per course and cost per student. The formula used to arrive at a cost per course and cost per student in this study was to multiply the number of sections by twenty-five (the average number of students in each section) to obtain the total enrollment for the course. Next, divide

the total number of sections by four (four three-credit courses equals an average teaching load) to arrive at the number of professors required. Then multiply the number of professors used to teach the course times the mean salary. The product is the total professor cost and the cost per course for faculty. To determine the cost per student, divide the total cost of faculty and graduate assistants used in presenting the course by the total number of students in the course.

In 1965-66 there were 44 sections of Introductory English Composition. The total average enrollment was 1100 students. Using the average faculty load of 12 hours as a base and dividing the 44 sections by this base, 11 professors were needed to teach Introduction to English Composition. The mean salary was \$9200 for each professor. The total mean salary was \$101,200. Therefore, the cost per student for faculty only in Introductory English Composition was \$92. With several examples taken from Table I, Table II illustrates the cost for faculty per student in five large-section courses.

II. TELEVISION UTILIZATION AT OTHER CAMPUSES

The criteria on which the thirty-nine institutions were selected were two: first, they had successfully solved personnel problems associated with instructional television

TABLE II

COST PER STUDENT FOR FACULTY ONLY

Course	Sections	Cost Per Student for Faculty Only
English 101	44	\$92.00
English 201	22	93.27
English 301	19	96.84
Psychology 100	18	96.44
Speech 201	21	94.63

which were similar to the personnel problems at Central Washington State College, and second, the courses utilized in solving these problems were similar to large-section courses taught at Central Washington State College.

Of the 39 questionnaires sent out, 30 were returned (77%), eight were not returned (19%) and one questionnaire could not be used due to the nature of the program at the school (2%). There were 66 individual course questionnaires sent, 45 of which were returned (68%). However, very few of them had every item answered. The assumption was made that not all the questions were applicable to all the respondents.

Presentation of television lessons. The respondents of 30 courses indicated that although some courses had been televised as early as 1955, the majority began televising courses after 1959. There were several reasons why the selected colleges and universities decided to televise these courses. One, respondents from 29 courses indicated that increasing enrollment was a major factor for televising the course while enrollment problems were not a factor for 15 courses. Respondents from 19 courses said that the difficulty of obtaining an adequate teaching staff was a major factor for utilizing television while the respondents from 25 courses indicated that it was not a factor. Other major factors instrumental for televising these specific courses

were Improvement of the quality of instruction, opportunity for demonstrations, lack of adequate facilities, a greatly expanded student enrollment, standardization of instruction, released time for the teaching professor, and lack of qualified faculty. See Table III.

TABLE III
WHY COURSES WERE TELEVISED

Reasons	No. of Respondents Yes	No. of Respondents No
1. Increasing enrollment	29	15
2. Difficulty in obtaining adequate teaching staff	19	25
3. Improvement of instructional quality	21	0
4. Opportunity for demonstrations	4	0
5. Lack of adequate facilities	1	0
6. Standardization of instruction	1	0
7. Released time for professors	1	0
8. Lack of qualified faculty	1	0

Twenty-seven of the televised courses were offered twice every year, nine courses were offered three times a year, and one school offered its televised course four times during the school year. See Table IV. The average enrollment

per quarter for these courses was 507. The average fall enrollment was 584, the average winter enrollment was 431, and the average spring enrollment was 456 students.

TABLE IV
FREQUENCY OF REPEATING TELEVISION LESSONS

Frequency of Repetition	Number of Courses
Twice per year	27
Three times per year	9
Four times per year	1

Length and revision of television lessons. Of 46 responses, 32 respondents indicated that each lesson was 45 minutes in length. In one course each lesson was 15 minutes in length, while in eight courses respondents indicated that each lesson was 30 minutes long. One course had 60-minute lessons, and in three courses lessons were 75 minutes in length. See Table V.

There were 43 responses to a question concerning the length of the course when it was taught conventionally rather than by television. Thirty-six of these had 45-minute sessions, one course had 15-minute sessions, none were 30 minutes long, two were 60 minutes, and three were 75 minutes for each session.

TABLE V
LENGTH OF TELEVISION LESSONS

Length of Lessons	Number of Courses
75 minutes	3
60 minutes	1
45 minutes	32
30 minutes	8
15 minutes	1

Of the thirty-five video-taped courses that were revised or brought up to date, ten courses were revised or brought up to date every quarter; eight were revised or brought up to date every year; five courses were revised or brought up to date every two years; and two courses were revised or brought up to date every three years. See Table VI.

TABLE VI
FREQUENCY OF REVISING TELEVISION COURSES

Frequency of Revision	Number of Courses
Every quarter	10
Every year	8
Every two years	5
Every three years	2

Use of faculty and released time. By a margin of nearly three to one, one television instructor was used to present each course. Of the forty-one responses, each of twenty-seven television courses were taught by one instructor, six courses were each taught by two instructors, four courses were each taught by three instructors, one course was taught by four instructors, and the responses from three courses indicated that more than four instructors were used to present one course. See Table VII.

TABLE VII
NUMBER OF STUDIO PROFESSORS USED TO
TEACH TELEVISION COURSE

Number of Instructors	Number of Courses
1	27
2	6
3	4
4	1
More than four	3

Only one-ninth of the television instructors presented more than one to three television lessons per week. Thirty-six of the forty-one responses indicated that each television instructor presented one to three television lessons per week. Four of the responses indicated that the television

instructor presented from four to six television lessons per week.

In addition to the television instructor's television teaching, sixteen of the television instructors taught one to three lessons per week conventionally, eight television instructors taught four to six lessons per week conventionally, eight television instructors taught seven to ten lessons per week conventionally, and two television instructors taught eleven to fifteen lessons per week conventionally. See Table VIII.

TABLE VIII

TEACHING LOAD OF STUDIO TEACHERS IN
ADDITION TO TEACHING BY TELEVISION

Number of Lessons Per Week Conventional Teaching	Number of Instructors
1 - 3	16
4 - 6	8
7 - 10	8
11 - 15	2

It was found that television instructors engaged in one or more of five types of activities during the following quarter or semester after the course had been video taped. Twenty instructors revised television lessons; five instructors

prepared new television courses; twenty-nine instructors taught conventional classes; seven instructors served as discussion leaders for students enrolled in their video taped courses; and seven instructors met the class in question and answer sessions for students enrolled in their video taped courses. See Table IX.

TABLE IX
STUDIO TEACHERS' RESPONSIBILITIES
AFTER COURSE IS TAPED

Type of Activity	Number of Instructors
Revise TV lessons	20
Prepare new TV lessons	5
Teach conventional classes	29
Discussion leader	7
Question session leader	7

Utilization of classroom instructors in receiving rooms. In twenty-nine courses, no classroom instructors were utilized in receiving rooms to help teach the course. Sixteen courses utilized one instructor, two courses used two instructors, and three courses used more than three instructors in receiving rooms.

Sixteen classroom instructors spent one to three class hours per week working with discussion groups, seven instructors spent four to six hours in this endeavor, and one instructor spent more than thirteen hours per week working with discussion groups.

Eleven classroom instructors worked one to three hours per week with question and answer sessions, and four instructors worked four to six hours per week with these sessions. The sample indicated that no classroom instructor spent more than six hours working with question and answer periods. See Table X, page 35.

Utilization of graduate students. Of the forty-four respondents who answered the section in the questionnaire relating to the utilization of graduate students, thirty indicated that graduate students were not used in receiving rooms to help teach the course. Thirteen courses used one graduate student in each receiving room, and one course utilized two graduate students in receiving rooms to help teach the course.

Eleven graduate students worked one to three class hours per week with discussion groups; three graduate students worked four to six class hours per week with discussion groups; one graduate student spent ten to twelve hours per week with discussion groups, and one graduate student

TABLE X

UTILIZATION OF INSTRUCTORS IN RECEIVING ROOMS

Number of Courses Using Instructors In Receiving Rooms	Number of Instructors	Hours Per Week Working With Discussion Groups	Number of Instructors	Hours Per Week Working With Question Period	Number of Instructors
29	0	1-3	16	1-3	11
16	1	4-6	7	4-6	4
2	2	13+	1		
3	3+				

worked more than thirteen class hours per week with these groups.

Graduate students spent approximately the same number of class hours per week working with question and answer periods as they did working with discussion groups. Thirteen graduate students worked one to three class hours per week with question and answer periods, and two graduate students worked four to six class hours per week with question and answer periods. There was no indication from the sample that graduate students spent more than six class hours per week in that type of activity. See Table XI, page 37.

Graduate students were also used in two other specific areas. Four graduate students were utilized as teachers of television lessons and seventeen graduate students graded papers. In addition, the sample indicated that sixteen graduate students were utilized in a variety of miscellaneous activities.

Discussion periods and question and answer periods.

Because in television instruction there is usually very little opportunity for students to ask the studio professor questions, questions were included on the questionnaire which pertained to (1) feedback from classrooms to studio; (2) question and answer periods, and (3) discussion periods.

TABLE XI

UTILIZATION OF GRADUATE STUDENTS

No. of Graduate Assistants Used In Receiving Rooms	Frequency	Hours Per Week As Discussion Leaders	Frequency	Hours Per Week in Question and Answer Periods	Frequency
0	30	1 - 3	11	1 - 3	13
1	13	4 - 6	3	4 - 6	2
2	1	10 - 12	1		
		13+	1		

Respondents of thirty courses indicated that they do not allow students to question the television instructor during the television lesson while respondents from fourteen courses said they do allow this type of activity. Respondents in twenty-eight courses indicated that they provide separate question and answer periods for classes taught via television and fifteen indicated they do not. In thirty courses, separate discussion periods followed the television lesson and in twelve courses they did not. In addition, respondents of courses indicated that they provided supplemental materials for use by the students during the television lesson. The supplemental materials took the form of lesson outlines, study questions, texts, graphic materials, and other visual aids.

Cost per course using television (presentation only).
The data indicated by a ratio of two to one (30 to 14) that television instructors presented their lessons without instructors or graduate assistants working in the receiving rooms. Using the 1966 average faculty salary of \$9200 at Central Washington State College, \$9200 divided by three quarters, minus the time spent teaching other courses conventionally, would be the cost per course for presentation only. The assumption was made that since the television instructor spent three hours teaching by television and

three hours teaching conventionally, the remaining six hours of his teaching load were spent in preparation for his television presentation. Table XII summarizes the cost per course for a television professor teaching one to three television lessons per week.

TABLE XII
COST PER COURSE PER QUARTER (PRESENTATION ONLY)

Teaching By Television	
Three-credit course	\$2300.00

Again using the 1966 average faculty salary at Central Washington State College of \$9200 as a base figure, the data indicated that television instructors and other professors devote one to three hours per week working in two other related activities: (1) working with question and answer periods, and (2) working with discussion groups. Therefore, inasmuch as the classroom instructor's teaching load averages ten to twelve hours per week, these professors utilized as discussion leaders or for question and answer sessions devoted one-fourth of their time for this assignment. Thus the cost for question and answer sessions and discussion periods per section will be the faculty mean salary of \$9200 divided by

three quarters times 25% (25% of the professor's time devoted as discussion leader and/or working with question and answer sessions).

The total faculty cost for teaching via television using television followed by one question and answer period or discussion period for each section will be the television production cost of \$2300 per three-credit course and \$767 for one section. Table XIII summarizes that information.

TABLE XIII
TELEVISION PRESENTATION COSTS WITH DISCUSSION
AND QUESTION SESSIONS

TV Professor	Discussion and Answer Sessions
\$2300/course	\$767/section

III. PRODUCTION INFORMATION

General Information. Because there are so many ways of determining television production costs and so many variables involved, the writer was unable to arrive at a workable norm. Table XIV is a compilation of the responses from the forty-six individual course questionnaires concerning the number of production personnel they used in each position.

Because a production cost per course was needed for comparative purposes, an attempt was made through an

TABLE XIV
PERSONNEL UTILIZATION

Position	Fractional Time Per Course			
	Full-time	3/5	2/5	1/5
Producer-Director	2	9	7	11
Producer			1	1
Director	1		2	
Floor Director			1	2
Engineer	3		5	18
Photographer			4	11

examination of the data to arrive at a trend for production staff utilization. Based on the data and the frequency with which the questionnaire respondents indicated their utilization of full-time production personnel, it would appear that most institutions employ only three full-time professionals on their production team. See Table XV.

TABLE XV
COST FOR FULL-TIME PRODUCTION PERSONNEL

Position	Time Devoted To A Specific Course	Yearly Salary	Cost per Course
Producer-Director	2/5	\$7500	\$ 750
Engineer	2/5	8000	800
Photographer	1/5	7000	<u>350</u>
		Total	\$1900

An examination of the data for part-time personnel indicates that many production responsibilities are performed by part-time or student help. These part-time positions are summarized in Table XVI.

TABLE XVI
STUDENT OR PART-TIME HELP USED IN
PRODUCTION OF ONE COURSE

Position	Number of Hours per Course	Hourly Rate	Total Cost Per Course
Producer-Director	10 hours	\$1.50	\$15.00
Floor Director	5 "	1.50	7.50
Audio Operator	5 "	1.50	7.50
Cameraman	8 "	1.50	12.00
Engineer	5 "	1.50	7.50
Graphic Artist	5 "	1.50	7.50
Photographer	5 "	1.50	<u>7.50</u>
		Total	\$64.50

Therefore, the total production costs for personnel only would be the salaries of full-time professionals (\$1900) plus the salaries of part-time personnel (\$64.50), for a total production cost of \$1964.50 per three-credit course.

Video taping of lessons. The respondents from twenty-five courses indicated that they recorded their televised

lessons on video tape while sixteen indicated that they did not. Of those institutions that said they did video-tape their lessons, twenty-one schools said that the course was repeated during the day of origination via video tape.

There were three reasons for this procedure: (1) Seventeen colleges and universities said they presented courses via video tape for schedule flexibility, (2) two schools did so to provide remedial help for students who needed reinforcement in the subject matter, (3) several schools indicated that they presented lessons via video tape to provide a more flexible schedule for review of the course content. Also, respondents from twenty-eight of the courses indicated that they repeated the video-taped courses during other quarters or semesters. Ten courses indicated that they did not.

To teach ~~the~~ eight sections per quarter conventionally would require two professors per quarter. Using the mean salary of \$9200, the cost to teach this course for salaries only would be \$18,400, compared to \$26,912 with instructional television. See Table XVII, page 44.

If television were used for total teaching with no instructors provided for discussion leaders, the cost would be much lower. See Table XVIII, page 45.

Therefore, by not providing instructors for discussion groups, the cost of teaching via television is less expensive than conventional teaching when considering staff requirements only.

TABLE XVII
 COMPARISON OF COSTS FOR INSTRUCTIONAL TELEVISION AND
 CONVENTIONAL TEACHING FOR THREE QUARTERS

Medium	First Quarter Cost	Second Quarter		Third Quarter		Total Cost Three Quarters
		Cost	Cum. Cost	Cost	Cum. Cost	
Conventional Teaching	\$ 6,136	\$6,136	\$12,302	\$6,136	\$18,408	\$18,408
Television Teaching:						
Production	\$ 1,964	\$ 0	\$ 1,964	\$ 0	\$ 1,964	
Presentation	<u>8,436</u>	<u>6,138</u>	<u>14,574</u>	<u>6,136</u>	<u>20,710</u>	
Total	\$10,400	\$6,138	\$16,538	\$6,136	\$22,674	\$22,674
Cost/Consecutive Quarters	\$10,400		\$ 8,269		\$ 7,558	

TABLE XVIII

COST OF INSTRUCTIONAL TELEVISION FOR THREE QUARTERS
WITHOUT INSTRUCTORS AS DISCUSSION LEADERS

Medium	First Quarter Cost	Second Quarter		Third Quarter		Total Cost For Three Quarters
		Cost	Cum. Cost	Cost	Cum. Cost	
Production	\$1,964	\$ 0	\$ 0	\$ 0	\$ 0	
Presentation	<u>\$2,300</u>	0	0	0	0	
Total	\$4,264	0	\$4,264	0	\$4,264	\$12,792
Cost/Consecutive Quarters	\$4,264	0	\$2,132	0	\$1,421	

IV. SUMMARY

The data presented in Chapter IV brought out several important points. One, Central Washington State College has a large number of large-section courses. Two, large-section areas similar to those at Central Washington State College are being successfully taught via instructional television at other colleges and universities. Three, the cost for personnel only using television instructors and classroom instructors compares favorably with conventional teaching; and if television were used for total teaching, without discussion and question and answer leaders, the cost would then be much lower.

CHAPTER V

SUMMARY, CONCLUSIONS AND RECOMMENDATIONS

I. SUMMARY

The purpose of this study was to determine through a review of the related research and a questionnaire whether an expansion of the closed-circuit television program was feasible at Central Washington State College.

From the review of related research, it was clearly evident that educational television, when used judiciously, is a remarkably powerful and efficient tool for handling increased enrollments and improving the quality of instruction.

The data from the questionnaire substantiated the information derived from the review of related research.

Three
Two of the major reasons why the thirty respondents to the questionnaire decided to televise large-section courses were a lack of qualified professors, and a desire to improve the quality of instruction, *and increasing enrollment*

There are twenty large-section areas at Central Washington State College. Each of these large-section courses has from eight to forty-four individual sections averaging twenty-five students per section.

The data from the questionnaire revealed that the average enrollment for a large-section course was 507 students at the institutions surveyed. By a ratio of almost three to one, these large-section courses were offered twice during the academic year via television. In addition, by a ratio of almost two to one, the large-section courses were (1) recorded on video tape, (2) repeated during the day of origination via video tape, and (3) repeated during other quarters on video tape.

At both Central Washington State College and the selected colleges and universities, the average teaching load was found to be twelve hours per quarter or semester. Since almost seventy per cent of the television instructors taught one three-hour television course per week and one three-hour conventional class per week, the assumption was made by the writer that the remaining six hours per week were devoted to preparation of lessons in addition to four other activities during the following quarters: (1) revision of television lessons, (2) preparation of new television courses, (3) discussion leader for students enrolled in his television course, and (4) meeting his class in question and answer sessions.

Graduate students were used very little as television instructors or conventional classroom instructors. They were utilized in two areas: (1) grading duties and (2) miscellaneous duties.

The costs of conventional teaching, the presentation of television lessons, and production costs are summarized in Table XIX, page 50.

Table XX, page 51, summarizes the comparative educational costs (using eight sections) for conventional teaching, television with discussion groups, and television without discussion groups.

II. RECOMMENDATIONS

Within the confines of this study the writer makes the following recommendations:

1. That a closer look be taken at closed-circuit television at Central Washington State College and the implications it has for presenting better quality teaching to greater numbers of students.
2. That specific course literature on the improvement of education by television be made available to all academic departments. It might be possible for a member of the audio visual library professional staff to present to departments or individual members of a department information on how television can be used as a tool to help improve instructional quality.

TABLE XIX
 COST PER COURSE FOR CONVENTIONAL TEACHING
 AND TELEVISION PRESENTATION AND PRODUCTION

Medium	Position	Per Cent of Time Per Course	Yearly Salary	Salary Per Course
<u>Television:</u>				
Production	Producer- Director	40%	\$7,500	\$ 750
	Engineer	40%	\$8,000	\$ 800
	Photographer	20%	\$7,000	<u>\$ 350</u>
				Total
Presentation	Studio Professor	25%	\$9,200	\$2,300
	Receiving Room	25%	\$9,200	<u>\$ 767</u>
			Total	<u>\$3,067</u>
<u>Conventional Teaching:</u>				
	Classroom Instructor	25%	\$9,200	<u>\$2,300</u>
			Total	<u>\$2,300</u>

TABLE XX

COMPARATIVE EDUCATIONAL COSTS OF CONVENTIONAL TEACHING, TELEVISION
WITH DISCUSSION GROUPS, AND TELEVISION WITHOUT DISCUSSION GROUPS

Medium	First Quarter Cost	Second Quarter		Third Quarter		Total Cost Three Quarters
		Cost	Cum. Cost	Cost	Cum. Cost	
Conventional Teaching	\$ 6,136	\$6,136	\$12,302	\$6,136	\$18,408	18,408
Television:						
With Discussion Groups						
Production	\$ 1,964	\$ 0	\$ 1,964	\$ 0	\$ 1,964	
Presentation	<u>8,436</u>	<u>6,138</u>	<u>14,574</u>	<u>6,136</u>	<u>20,710</u>	
Total	\$10,400	\$6,138	\$16,538	\$6,136	\$22,674	\$22,674
Cost/Consec. Quarters	\$10,400		\$ 8,269		\$ 7,558	
Without Discussion Groups						
Production	\$ 1,964	\$ 0		\$ 0		
Presentation	<u>\$ 2,300</u>	0		0		
Total	\$ 4,264		\$ 4,264		\$ 4,264	\$12,792
Cost/Consec. Quarters	\$ 4,264		\$ 2,132		\$ 1,421	

3. That literature cover such areas as long-range planning, the advantages of closed-circuit television in teaching large-section classes, the use of video tape and released time, planning for the eventual elimination of large-section classes, cost comparisons between closed-circuit television and conventional teaching of large-section areas, and general and specific recommendations for the use of closed-circuit television.
4. That research be carried out at Central Washington State College on interaction in learning and its implications for television. At this time it appears that television programs that provide for many kinds of interaction offer the most immediate hope for improved learning by viewers.
5. That because of the indeciveness of the data, a study should be made at Central Washington State College to determine whether the availability of qualified faculty could be a factor for considering television as a teaching tool.

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APPENDIX A

GENERAL PRODUCTION INFORMATION

PRODUCTION

Indicate the number of full-time personnel involved in the production of television lessons.

<u>Number</u>	<u>Title</u>
_____	Producer-Director
_____	Producer
_____	Director
_____	Floor Director
_____	Audioman
_____	Cameraman
_____	Engineer
_____	Graphic Artist
_____	Photographer
_____	Other (please specify)

Indicate the number of part-time personnel (including student help) involved in the production of television lessons.

<u>Number</u>	<u>Title</u>
_____	Producer-Director
_____	Producer
_____	Director
_____	Floor Director
_____	Audioman
_____	Cameraman
_____	Engineer
_____	Graphic Artist
_____	Photographer
_____	Other (please specify)

How long has your institution produced instructional television programs?

1 year _____ 2-3 years _____ 4-5 years _____ 5-10 years _____

INFORMATION PERTAINING TO SPECIFIC COURSES

DEFINITION OF TERMS

Television Instructor - The instructor who appears before the television camera.

Classroom Instructor - The instructor who meets with the class face to face.

Question and Answer Period - A period to allow students to ask specific questions and receive specific answers.

Discussion Period - A period for interaction between students, instructors, or graduate students.

COURSE NUMBER _____ COURSE TITLE _____

GENERAL INFORMATION

1. What year did you first televise this course? _____
2. Was increasing enrollment a major factor for televising this course?
Yes _____ No _____
3. Was a lack of adequate classroom space a major factor for televising this course?
Yes _____ No _____
4. Was the difficulty of obtaining a teaching staff a major factor for televising this course?
Yes _____ No _____
5. What other major factor was instrumental for the televising of this course?
Please state _____
6. How many times each year is this course offered via television?
1 _____ 2 _____ 3 _____ 4 _____ Other (please specify) _____
7. What is the average enrollment per quarter in this course?
Fall _____ Winter _____ Spring _____ Summer _____
8. Is this course recorded on video tape?
Yes _____ No _____
9. If the answer to the above question is "yes", is this course repeated during the day of origination via video tape?
Yes _____ No _____

A. If so, for what purpose?

Schedule flexibility _____ Remedial Help _____ Further
Clarification _____ Other _____

B. Is this course repeated via video tape during other quarters or semesters?

Yes _____ No _____

10. Do the facilities allow students to question the television instructor during the television lesson?

Yes _____ No _____

11. Are separate question and answer periods (as defined) provided for classes taught via television?

Yes _____ No _____

12. Do students meet in separate discussion periods (as defined) following the television lesson?

Yes _____ No _____

13. What supplemental materials are used by the students during the television lesson?

Lesson Outline _____ Study Questions _____ Others _____

14. What is the length of each television lesson in this course?

15 min. _____ 30 min. _____ 45 min. _____ 60 min _____

15. What is the length of each lesson in this course when it is taught conventionally?

15 min. _____ 30 min. _____ 45 min. _____ 60 min. _____

16. How often are the video taped lessons revised or brought up to date?

Some every quarter _____ Some every year _____

Some every two years _____ Other (please specify) _____

PERSONNEL UTILIZATION

Concerning the weekly work schedule of full-time employees, check the fractional amount of time involved in producing this course.

<u>Title</u>	Full-time	4/5	3/5	2/5	1/5
Producer-Director					
Producer					
Director					
Floor Director					
Studio Teacher					
Audioman					
Cameraman					
Engineer					
Graphic Artist					
Photographer					
Other (please specify)					

Concerning the weekly work schedule of part-time personnel including student help, check the amount of time (in hours) involved in producing this course.

<u>Title</u>	5 Hrs.	10 Hrs.	15 Hrs.	20 Hrs.	25 Hrs.	30 Hrs.
Producer-Director						
Producer						
Director						
Floor Director						
Audioman						
Cameraman						
Engineer						
Graphic Artist						
Photographer						
Other (please specify)						

USE OF FACULTY

1. How many television instructors (as defined) are used to present this course (exclude professors in the classroom)?

1. _____ 2 _____ 3 _____ 4 _____ More _____

2. How many lessons per week does each television instructor present via television?

1-3 _____ 4-6 _____ 7-10 _____ 11-15 _____

3. In addition to his television teaching, how many lessons per week does each television instructor teach conventionally?

1-3 _____ 4-6 _____ 7-10 _____ 11-15 _____

4. What assignments do the television instructors have during the following quarter (semester) after the course has been video taped?

_____ Revises television lessons

_____ Prepares new television course

_____ Teaches conventionally

_____ Serves as a discussion leader for students enrolled in his video taped course

_____ Meets the class in question and answer sessions for students enrolled in his video taped course

5. How many classroom instructors (Not graduate assistants or students) are utilized in each receiving room to help teach this course?

0 _____ 1 _____ 2 _____ 3 _____ More _____

- A. How many class hours per week do these classroom instructors work with discussion groups (as defined)?

1-3 _____ 4-6 _____ 7-9 _____ 10-12 _____ 13 plus _____

- B. How many class hours per week do these classroom instructors work with question and answer periods (as defined)?

1-3 _____ 4-6 _____ 7-9 _____ 10-12 _____ 13 plus _____

6. How many graduate students are used in each television receiving room to help teach this course?

0 _____ 1 _____ 2 _____ 3 _____ More _____

- A. How many class hours per week do these graduate students work with discussion groups (as defined)?

1-3 _____ 4-6 _____ 7-9 _____ 10-12 _____ 13 plus _____

B. How many class hours per week do these graduate students work with question and answer periods (as defined)?

1-3 _____ 4-6 _____ 7-9 _____ 10-12 _____ 13 plus _____

7. Graduate students are also utilized as:

_____ Teachers of the televised lesson

_____ Grading Duties

_____ Other Duties

8. What is the normal number of class hours assigned per week to a classroom instructor who teaches strictly by conventional methods.

7-9 _____ 10-12 _____ 13-15 _____ More _____

USE OF CLASSROOMS

1. The lessons are viewed in:

Academic Buildings

_____ Small classrooms (30-60)

_____ Large classrooms (60-100)

_____ Auditoriums

_____ Lounge areas

Dormitories

_____ Dormitory lounge areas

_____ Dormitory classrooms

_____ Student living quarters

_____ Other (please specify)

2. Students view the televised lesson in viewing groups of:

_____ Under 50

_____ 50-100

_____ 100-150

_____ 150-200

_____ 200 plus

EVALUATION

1. In your opinion, if no immediate feedback techniques are used, do television instructors believe that this lack hinders successful teaching?

Yes _____ No _____

2. In your opinion, what is the consensus of students' attitude towards having this course taught via television?

Strongly Approve _____

Strongly Disapprove _____

Approve _____

Disapprove _____

3. In your opinion, what would be the consensus of faculty opinion towards the teaching of this course via television?

Strongly Approve _____

Strongly Disapprove _____

Approve _____

Disapprove _____

4. In your opinion, what would be the consensus of faculty opinion towards teaching via television?

Strongly Approve _____

Strongly Disapprove _____

Approve _____

Disapprove _____

APPENDIX B

APPENDIX B

INSTITUTIONS RECEIVING QUESTIONNAIRES

Antioch College
Yellow Springs, Ohio

Oregon State University
Corvallis, Oregon

Ball State University
Muncie, Indiana

Pacific Lutheran University
Tacoma, Washington

Central Connecticut State
Mt. Pleasant, Michigan

Pennsylvania State University
University Park, Pennsylvania

Central Michigan University
Mt. Pleasant, Michigan

Pensacola Junior College
Pensacola, Florida

College of San Mateo
San Mateo, California

Rensselaer Polytechnic Institute
Troy, New York

East Carolina College
Greeneville, North Carolina

Sacramento State College
Sacramento, California

Eastern Michigan University
Ypsilanti, Michigan

San Diego State College
San Diego, California

Indiana State University
Terre Haute, Indiana

State University of New York
Albany, New York

Indiana University
Bloomington, Indiana

State University of New York
Brockport, New York

Jacksonville University
Jacksonville, Florida

State University of New York
Oswego, New York

Kent State University
Kent, Ohio

St. Mary's College
Winona, Minnesota

Marietta College
Marietta, Ohio

St. Petersburg Junior College
St. Petersburg, Florida

Michigan State University
East Lansing, Michigan

Southern Illinois University
Carbondale, Illinois

Millersville State College
Millersville, Pennsylvania

University of Akron
Akron, Ohio

Northwestern State College
Natchitoches, Louisiana

University of Colorado
Boulder, Colorado

University of Dayton
Dayton, Ohio

University of Detroit
Detroit, Michigan

University of Georgia
Athens, Georgia

University of Miami
Coral Gables, Florida

University of Minnesota
Minneapolis, Minnesota

University of Missouri
Columbia, Missouri

University of Omaha
Omaha, Nebraska

University of Texas
Austin, Texas

Western Michigan University
Kalamazoo, Michigan