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ABSTRACT

The dearth of innovative instructional resources has been a key reason for inadequacy of learning opportunities in the New York Appalachian region, particularly in occupational education. Project 81 was formulated to organize a regional approach to the use of new instructional media materials for occupational education through increasing the acquisition and use of videocassettes. The necessary hardware and opportunities for training were also provided. The evaluation began with a pre-survey in the fall of 1975 which estimated baseline utilization of media by staff. Data were collected on use of individual program materials throughout the evaluation period, and a final evaluation was completed in June 1976. This last survey produced a clear picture of the project's success. The diffusion of large quantities of videocassette equipment and materials resulted in a significant increase in teacher adoption and utilization. (WBC)

SUMMATIVE EVALUATION REPORT

PROJECT 81

THE APPALACHIAN COMMUNICATIONS EXTENSION

Instructional Television Materials

Duplication and Distribution

in

OCCUPATIONAL EDUCATION

2

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OVERVIEW

Project 81

Rationale and Need

The geographical, economic, and social conditions of the New York Appalachian region have severely limited its development. Educational opportunities for students in the Appalachian region have been considerably fewer than for students in other parts of the State. The dearth of innovative instructional resources has been one of the key reasons for the inadequacy of learning opportunities. The lack of innovative technological media resources has been felt particularly in the crucial area of occupational education. The highly diversified and specialized nature of occupational education has made it difficult to maintain adequate instructional programs without the assistance of media resources. The need for new curriculum, instructional materials and methods could be met in large part through audio-visual media resources.

Objectives of the Project

A project plan was formulated to organize a regional approach to the acquisition of new instructional media materials for occupational education. The objective of the plan (entitled Project 81) was to increase the availability and accessibility of instructional media resources in the form of videocassettes. Accompanying videocassette equipment was also acquired in substantial quantities to allow maximum availability and utilization of the instructional materials. In-service workshops were designed to familiarize teachers with the equipment and materials, and ultimately to increase their adoption and utilization of the innovative instructional resources. The long-range goal of the Project was to strengthen occupational education programs and to increase learning opportunities.

Evaluation

Purpose

This report describes Project 81 in terms of the antecedant conditions of media use for instructional purposes in the Appalachia Region of New York State and the kind of equipment and program materials provided through the project. The report also describes an evaluation study of the success of Project 81 in terms of the quality of the materials and the degree of their utilization as an instructional tool. The study was a two time point survey of occupational education directors, educational communications directors, and occupational education teachers in 11 BOCES. Multiple comparisons were made of adoption and utilization, availability, attitudes, problems, and reactions.

Design

The evaluation study contacted BOCES staff during the Fall of 1975. Eleven educational communications directors, and 279 occupational education teachers were contacted. Although a portion of the video display equipment provided by the project was already in the schools, the program material to be provided was not. This pre-survey was used to estimate baseline utilization of media by BOCES staff. Following the introduction of the project equipment and programming, data were also collected on the use of individual program materials throughout the course of the evaluation period.

BOCES staffs were again contacted in June 1976, at the end of the evaluation period. At that time eleven education communications directors, 12 occupational education directors, 159 occupational education teachers and 252 students were surveyed in this second wave. The second wave provided 5 months during which Project 81 program materials were available to BOCES staff. Time constraints on completion of the evaluation did not unfortunately, permit a more long term assessment of the effectiveness of the project.

Results

Analysis of initial existing conditions in the BOCES centers prior to the project indicated that equipment and program availability were both limited. Film was used more than videotape prior to dissemination of project materials. BOCES staff members had a fairly positive attitude towards media on the whole and perceived that the major difficulties in using film and video in the classroom centered around inadequacies of the program materials available.

The survey of BOCES staffs conducted in June 1976 produced a clear picture of the success of the project in providing video materials to the centers. Film usage had not changed significantly, but video usage had increased markedly, surpassing film usage by a statistically significant amount. Teachers had uniformly favorable reactions to Project 81 materials in terms of relevance, effectiveness, and potential impact on learning. Occupational education directors and educational communications directors had similar positive reactions to the project materials.

Attitudes of teachers towards media as an instructional tool and towards problems in using film and television were expected to become more positive during the term of the evaluation. This did not occur. Both sets of attitudes failed to change significantly. What movement did occur was towards a slightly more positive attitude for perceptions of usage problems and a slightly more negative attitude toward film and video as instructional tools. The only significant change was the degree to which teachers felt that the relevance and quality of media materials had become less of a problem in their utilization.

An attempt was made to predict which teachers were more likely than others to be early utilizers of Project 81 materials. This attempt failed on the whole. The only factor which predicted media usage consistently was the level of media usage during the previous year. There was, however, an interesting trend in the data. The correlation between previous video use and video use during the project test period dropped from the pre to the post test. It was lowest for the Project 81 materials. This trend in the correlation seems to indicate that the increased usage of video materials due to the project came, in part at least, from a new group of teachers who had not previously used video materials.

Conclusions

The diffusion of large quantities of videocassette equipment and materials resulted in a significant increase in teacher adoption and utilization. The process used to implement the project objectives appears to have been successful judging from the positive user reactions to the materials. The long-range instructional effects are difficult to assess at this point.

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PREFACE

> It is our observation at the present time that one of the tradgedies in American education and social practice is that a large proportion of the creative inventions which are in line with good research and theory never become appropriately transmitted from one setting and practioner to another. (Lippit, 1965)

Although communications technology has become an ubiquitous force in modern society, its integration into the formal education process has been less than spectacular. Despite the existence of audiovisual materials, teachers have not generally adopted their use on anything but the most minimal of scales. Successful demonstrations and extensive research notwithstanding, the rapidly evolving communications technologies have not received the same welcome in formal educational settings that they have received in government and industrial applications.

Undoubtedly, the reasons for this dilatory diffusion are complex (e.g. Berkman, 1975); involving the technological materials, methods, systems, users, and target audiences. All of these factors are interwoven, however, with economic realities. The start-up costs of inaugurating a communications technology-based program are high. Local school administrators are frequently reluctant to make large expenditures for instructional technology programs that are contrary to the labor intensive pattern of resource allocations in schools. Expenditures for technology-based instructional resources are usually kept to a minimal level, thereby reducing their availability and utilization. Understandably, the resulting underutilization leads to a questioning of technology's efficiency and effectiveness.

It would seem that the specific benefits of instructional technology can only be meaningfully compared with other instructional resources after the technology (whether it be television, film, or computers) is a readily available and utilized resource. Cost-benefits analyses examining the input-output relationships of technological school resources (Kiesling, 1975) will be negatively biased until the technological resources are accessible to teachers on a significant scale.

Of course, there are numerous unanswered questions concerning the effectiveness of technologically mediated instruction. In the case of instructional media these questions center around a need to clarify media's

effectiveness with particular students, contents, situations, and arrangements. Research into Aptitude-Treatment-Task Interactions has begun to deal with these questions (Cronback and Snow, 1969; Snow 1970). Hopefully, this line of research will provide continuing understanding into the capabilities of instructional media.

However, in the long run additional proof of the effectiveness of technological resources will not increase their availability for instruction. What is required will be a change in the overall instructional resource allocation pattern so that technological resources can play an integral part in instruction on an equal basis with other resources. To make newer technological resources just as available for use as more traditional resources will demand concentrated planning and action at all levels. Large scale incentives and programs designed to increase availability and utilization will probably provide the most realistic opportunity to access the impact of these technological resources.

INTRODUCTION

Project 81

The present evaluation report investigates a program entitled Project 81—The Appalachian Communications Extension Instructional Television Materials Duplication and Distribution: Occupational Education. This communications technology program was a cooperative effort of the New York State Education Department and the Appalachian BOCES Consortium (BOCES—Boards of Cooperative Educational Services). The purpose of the program was to increase the availability of instructional media resources for occupational education BOCES centers in the New York Appalachian region. (The developmental context of Project 81 is discussed at length in the "Background and Rationale" section of this report, Appendix A.)

The unique geographical, historical, and economic characteristics of the Appalachian region have created numerous problems in the development of human resources. One strategy that has become increasingly important in dealing with these regional problems has been the creation and expansion of high quality occupational education programs. The goal of these programs is "To equip the individual with the necessary skill clusters to permit him the upward and lateral career mobility necessary to fulfill both his immediate and long range career goals" (Appalachia Development Plan, 1971). Although the effectiveness and value of media resources for occupational education has been documented by government and industry, these materials were not available in sufficient quantities within BOCES to have any serious impact on instruction. Research had indicated that sufficient quantities of these media resources existed on the commercial market, but that individually the occupational centers were not capable of committing sufficient funds to purchase any appreciable quantities of materials. While the fifteen regional centers (BOCES) in Appalachia were not in a position to each commit the funds necessary to acquire media resources on their own, their common needs and interests created an excellent opportunity for cooperative media materials acquisition. Accordingly the State Education Department sought funding from the Appalachia Regional Commission to meet the media needs of the centers on a broad regional basis.

Prior experience on the part of the Education Department in negotiating with commercial media producers/distributors for large scale video duplication rights, and with proven procedures for media search, selection, and acquisition, offered a strong starting point for dealing with the media resource problem. Furthermore, the inherent advantages of the newly ascendant videocassette format seemed ideally suited for a program aimed at increasing media resource availability. The videocassette format provided a means to get materials diffused to teachers in a form that was not only more flexible educationally, but also more cost-effective on a unit by unit basis (See discussion in Appendix A).

This report will present the evaluation of Project 81 in terms of how well its objectives were implemented and what the consequences of the implementation were. It is hoped that the data presented here will serve to verify the educational improvements of the project, and also provide an information base for future policy decision-making and program development.

OBJECTIVES OF PROJECT 81

The specific objectives as stated in the funding proposal were:

Budget Period Objectives

1. To acquire and duplicate on videocassette 16mm motion pictures currently not available to occupational education programs in the Appalachian area.
2. To provide each Appalachian Board of Cooperative Educational Services with appropriate television display equipment to utilize the materials which will be made available to them.
3. To provide to each Appalachian Board of Cooperative Educational Services a complete set of duplicated films or videocassettes.
4. To develop and implement an in-service training program in techniques of utilization of video materials for occupational education teachers and to support career education programs in each of the BOCES.

Long Range Program Objectives

1. To increase the educational opportunities for the residents of the New York Appalachian region through the use of communications technology, to expand or enchance curriculum offerings of the schools and Boards of Cooperative Educational Services.
2. To develop and expand the availability of software suitable for various communications systems.

By nature of the process involved in Project 81, the diffusion of innovation conceptual framework (Hull, 1973; Havelock, 1975; Rogers and Shoemaker, 1971) seemed to have particular application in describing and evaluating the project objectives. The key conceptual terms applied to diffusion of innovation research designs (as described by the Center for Vocational and Technical Education at Ohio State University) explain the overall intent of Project 81 and facilitate the description and evaluation of the project. These terms are:

Diffusion—a process of disseminating and arriving at utilization of an innovation over time.

Adoption—decision to accept and make full use of an innovation as a worthwhile course of action by an intended consumer.

Innovation—research based educational product and/or process which is perceived as new and different.

Targetted consumers—the group intended to adopt the innovation which is diffused.

Diffusion strategy—techniques used to influence the acceptance of an innovation by the targetted consumer.

Change advocate—the group influencing and directing diffusion.

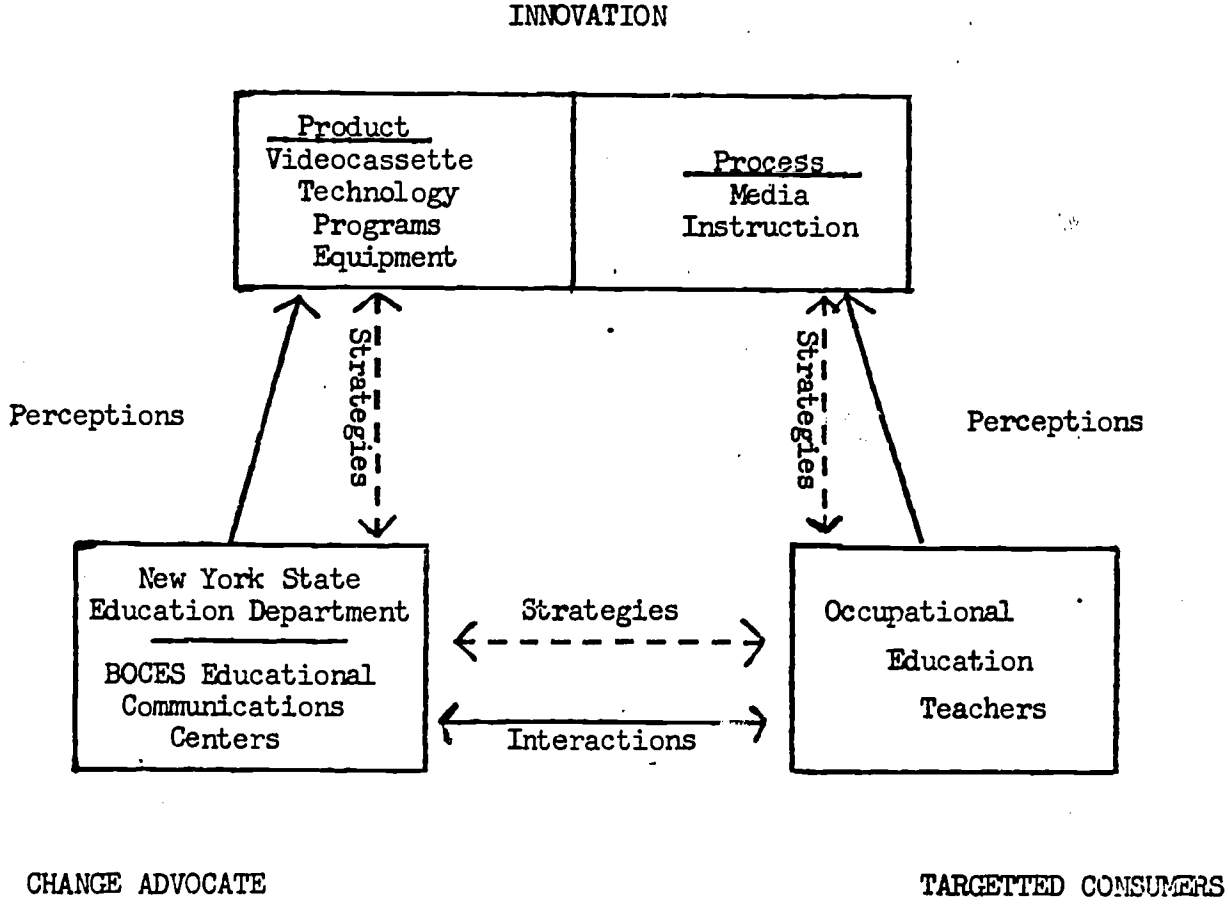
Diffusion process—acceptance over time of an innovation by individuals, groups or adopting units linked to specific channels of communication, to a social structure, and to a given system of values or culture (Katz and others 1963 in Hull, 1973).

Within the context of Project 81 the evaluation will examine the diffusion process of instructional media in the form of videocassettes. However, the innovation being diffused is both product (videocassette equipment and films transferred to videocassettes) and process (instruction based on the use of videocassette media). The immediate targetted consumers in Project 81 are all the occupational education teachers in each of the 15 regional occupational education centers (BOCES) in New York Appalachia. As the objectives of

the project indicate, the terminal goals of Project 81 are aimed at improving learning opportunities for students. The change advocates are both the New York State Education Department and the Educational Communications centers in each of the regional centers.

A paradigm for the diffusion of innovations, modified to reflect Project 81 is illustrated in Figure 1.

Figure 1



The diffusion event is composed of the following dimensions:

I. The antecedant state or baseline of:

Target consumers
Social structures
Innovation existence

II. The interim interactive state—during the introduction of the innovation via diffusion strategies.

III. The consequent state

A. Diffusion effect variables

1. adoption (behvaioral)
2. utilization

3. attitude
4. interest

B. Consequence variables

1. instructional effects
2. actions
3. benefits
4. quality
5. productivity
6. efficiency
7. internalization

OUTLINE OF THE EVALUATION: DATA TO BE COLLECTED

It should be obvious that the diffusion of the Project 81 materials and accompanying instructional methods involves a time dimension and the evaluation must reflect this time dimension. Within the time frame from antecedant to consequent states, data were collected to answer questions dealing with all phases of the diffusion event. The data required for the evaluation are outlined below.

I. Antecedant or Baseline State

A. Demographic characteristics of teachers (adopting unit)

1. professional
2. personal

B. Demographic characteristics of centers

1. staffing levels and characteristics
2. existing programs and curriculum

C. Innovation dimensions (prior state)

1. quantities
2. distribution
3. other format types
4. application (particularly in occupational education)

D. Antecedant interaction dimensions

1. amount of innovation utilization
2. amount of other resource utilization
3. pattern of utilization
4. assessed problems of utilization
5. attitudes toward the innovation

II. Interim Interactive State

1. amount of equipment obtained (availability)
2. distribution of equipment and materials
3. amount of materials obtained for diffusion (availability)
4. type (content) of materials
5. accessibility
6. strategies employed for diffusion (workshops)

III. Consequent State

A. Diffusion effects

1. rate of diffusion (trial and adoption)
2. changes in amount of utilization
3. attitude change
4. changes in patterns of utilization (content, instructional mode)
5. changes in assessed problems of utilization

B. Consequences and outcomes

1. reactions of teachers
2. reactions of occupational education directors in centers, and educational communications directors
3. reactions of students
4. instructional effects
5. economic benefit

Research Hypothesis

In addition to the descriptive data collected in the evaluation, experimental data were collected relative to a number of research hypotheses. The research hypotheses for this evaluation study were:

1. The greater the availability and accessibility of an instructional media format, the greater the utilization of that medium.
2. The greater the availability of media equipment and materials, the more positive teachers' attitudes toward instructional media.
3. The greater the accessibility of instructional media materials, the lower the perceived problems with utilization of those media materials.
4. The greater the accessibility of instructional media materials, the greater the use of media in small group and individualized instructional patterns.
5. The greater:
   - teacher education
   - training in media production/utilization
   - number of years teaching
   - number of years of teacher employment in a trade
   - more positive the teacher attitude
   - lower the assessed problems with media

   the greater the utilization of media.

Assumptions of the Evaluation Study

1. Project 81 evaluation provides an opportunity for examining the large scale diffusion of innovation—in this instance—media technology—within the educational context of occupational education.
2. While the central long range goal of the project is to increase the accessibility of learning resources and thereby the learning opportunities for students, the crucial operational focus of the project is the adoption and utilization of the project's output (media in videocassette format) by teachers. Teachers in the occupational centers are, therefore, the prime focal point of the evaluation.

3. The processes of dissemination and awareness creation were strategies of the project aimed at getting teachers to accept, adopt, and utilize the projects materials which would then affect student opportunities.

4. Acceptance of innovation is a function of a number of factors, some outside the individual teacher (like channels and sources of information, availability of the innovation, and social peer examples and pressures) and some internal to the individual teacher (like past training, experience, attitudes and predispositions).

5. While the ultimate focus of the study is on instruction, the lack of a unified theory of instruction as it relates to media forces an extensive reliance on human judgement of media learning effects rather than on empirical (determination of) outcomes and effects.

Design Limitations

Due to a number of factors, the diffusion of videocassette equipment and materials in Project 81 was far from ideal. Although the original project proposal anticipated the introduction of project materials before the beginning of the 1975-76 instructional year, only the videocassette equipment was available at that point in time. Delays in film rights negotiations, film acquisition, and film to videocassette duplication deferred the distribution of the videocassette materials until the beginning of 1976. Even by the end of the 1975-76 school year in June, only 75% of the films obtained for the project were catalogued and available for use. Since the time frame of the evaluation from December 1975 to June 1976 was a limited one to begin with, and since the entire complement of materials that was to be a part of the project was not available for use during the evaluation period, the diffusion and utilization of materials was less than might be anticipated. Furthermore, since the materials were not made available until after the mid-point of the school year (January 1, 1976), a point at which teachers had already formulated their lesson plans, any revision of teacher lesson plans probably was accomplished with a great deal of reluctance.

The present evaluation acknowledges these limitations, while attempting to make an assessment of the project outcomes within the limited time parameters. The situation was far from ideal. A more comprehensive evaluation design investigating particularly the long range project outcomes would necessitate a more lengthy longitudinal study. Ideally diffusion of the Project 81 videocassette technology should be examined over at least one natural instructional cycle (one entire school year) within the ongoing instructional and social systems of the BOCES occupational centers.

In order to achieve a more comprehensive assessment of the instructional impact and effectiveness of the project materials and processes diffused, the State Education Department, as an offshoot of Project 81, is formulating plans to conduct a longitudinal study over a two year period following the funding period and present evaluation of the project.

It should be also noted that any assessment of how well the long range project objectives were achieved is also wrought with numberous difficulties. The absence of any standardized criterion referenced testing within occupational education as well as the absence of uniform performance objectives for measuring the successful outcomes of instructional programs in occupational centers raises numerous questions not only in the present evaluation, but also in any future longitudinal design. For the purpose of this report, project effectiveness will be determined in terms of teacher adoption and utilization. Dimensions of learning effectiveness and efficiency will be assessed through target consumer's reactions and opinions. This research methodology of soliciting user determinations of effectiveness rather than measuring behavioral outcomes relative to inputs has been a common procedure for decades. It would seem, therefore, that the numerous unique and complex aspects of the study far outweigh its limitations.

METHOD

Target Population. The evaluation of Project 81 investigated the overall impact of a large scale introduction of instructional media (and support equipment) within the context of the regional occupational education centers in New York Appalachia. Since the constraints of the evaluation precluded any extensive longitudinal collection of data relative to the materials instructional effects, a great deal of energy was focused on the users judgements of the materials impact and effects.

Since prior research (Dodge, Bogdan, Brodgen, and Lewis 1974; Ayers 1972; and Kelley 1959) indicates that the success and effectiveness of any educational innovation have a cruical dependence on whether teachers accept and utilize the innovation, the occupational educational teachers affected by the program become the prime focus for data collection. It was assumed

that the quality of instruction has been directly influenced by the level of teacher experience with instructional procedures and resources. Teacher perception of an innovation, as Rogers (1962) mentions is the crucial dimension of acceptance utilization, and impact.

> It matters little whether or not an innovation has a great deal of advantage over the idea replacing it. What does matter is whether the individual perceives the relative advantage of the innovation. (Rogers, 1962, p. 124).

> The fact it (method or device) does or does not improve learning may be very nearly irrelevant...for improvement of learning may not be a concern of the student, and it may not be the main concern of the teacher either. (Dodge, Bogdan and others, 1974, p. 21).

As was mentioned earlier, the quasi-experimental design of the evaluation involved a time dimension. Judgemental, attitudinal, and utilization data were collected from occupational teachers at two points in time, [December 1975 and June 1976] (one prior to introduction of the project materials, and one six months following the introduction of the project materials).

In addition, baseline data were collected from the educational communications directors in all the occupational centers prior to materials introduction. The perception of, reactions to, attitudes toward, and judgements of the Project materials were also collected from a sample of occupational students, all the occupational directors, and all the communications directors. The rationale for surveying the occupational directors was that since they were part of the instructional context and they supervised the occupational teachers in each center, their effect on teacher acceptance could be significant. The rationale for surveying the communications directors was that they could influence media accessibility and utilization depending on their media management procedures and systems.

Because of the relatively limited number of teachers, occupational directors, and communications directors, dimensions of phenomena pertinent to these groups were not sampled, but rather measured from the entire population. The large number of students (over 8,000) necessitated sampling procedures.

Apparatus-Techniques

Program evaluation data were collected through three main methods:

1. Analysis of existing records, reports, and files in each occupational center as well as at the State Education Department, Bureau of Educational Communications.

2. On-site interviews with occupational teachers, students, and directors as well as interviews with communications directors.

3. Survey questionnaires administered to all involved in the program.

Analysis of existing information and records from the centers provided data on media utilization patterns, media utilization frequencies, curriculum program, and teacher in-service media training. Interviews, which were conducted by the evaluation coordinator during the on-site inspections of the project centers, provided extensive supporting data on the program implementation and effects. Survey questionnaires used in the study were developed by the project evaluation coordinator in conjunction with consultants in the Communications Department at Rensselaer Polytechnic Institute and assistance from personnel in the New York State Education Department's Bureau of Educational Communications and Bureau of Educational Data Systems.

After extensive revisions, the pre-assessment teacher survey was piloted with a group of occupational education teachers with characteristics similar to those of the target group. The teacher post assessment instruments were not piloted because of their similarity with the pre-instrument, but did undergo extensive modifications and improvements before administration. Other forms when through an extensive revision process, but were not pilotted. Copies of all the instruments used in the evaluation along with the mean responses and standard deviations for all items for the entire groups are included in Appendix B. Rationales and development procedures for the various survey forms are provided in Methodological Appendix E.

Procedure

The basic design of the project evaluation encompasses both a descriptive and an experimental dimension. The description dimension deals with the antecedant pre-state and subsequent prior state data collected from teachers, students, and directors in the centers relative to the quantity, quality, accessibility, utilization and effectiveness of the projects materials. The experimental dimension examined and explained changes (expected and actual) in attitudes, frequency of utilization, patterns of utilization, and effectiveness between the pre and post status of survey administration. The relationship of these changes to teacher, student, and center characteristics are essential aspects investigated in the experimental design. Figure 2 provides a synopsis of the data collection procedures of the evaluation.

Figure 2

Data Collection Timetable

Pre-Test/Before Introduction of Project Materials. Dec. 1975	Introduction and Use of Project Materials	Post Test/End of Assessment Period. June 1976.
Teacher Survey	Teacher Interviews Teacher Assessment of all materials used	Teacher Survey
Analyses of Records and Reports		
		Student Surveys (Sample)
Communications Directors Survey	Communications Director Interview	Communications Directors Survey
	Occupational Directors Interviews	Occupational Directors Survey

Sample

Because of the large number of students directly involved in the project (10,000) as well as those with peripheral involvement either through special education or in the supervisory school districts, the decision was made to sample student reactions to the project rather than survey the entire population. The sampling procedure involved:

1. Ranking all BOCES based on their combined film and videotape utilization prior to the introduction of the Project materials.
2. Selecting BOCES in the first, second, third, and seventh rank (4 BOCES) to achieve centers with variance in media use.*
3. Determining content areas that were taught in at least 75% of the eleven BOCES involved in the BOCES project.

*Note that the original design also anticipated using student responses from the BOCES in the eleventh rank (Schoharie). Since Schoharie's eligibility for project funds was not determined until after most of the video equipment had already been purchased for the other centers, it took more time than was originally planned to get the Schoharie center operational. Because of these equipment allocation problems it was decided that Schoharie should be dropped from the post-assessment phase. Futhermore, because of the exploratory nature of this student dimension, as well as the variability already existing in the four other centers in the sample, it was decided that another center would not be added at that late point in the study.

4. Selecting from those content areas which were taught in at least 75% of the eleven BOCES, the four that had the largest quantity of materials made available through the project.

5. Establishing a sample of 500 students (approximately 5% of the student population).

6. Surveying of students within each BOCES in clusters of intact classes.

7. Assigning randomly within BOCES which have two centers, intact class on equal number of groups from both centers.

Table 1

Student Sample Sites and Sizes

BOCES	Content Areas				
	Agriculture Conservation	Building Trades	Business	Health Services	Personal Services
Allegany	25	25	25	25	25
Broome-Tioga	25	25	25	25	25
Delaware Chenango	25	25	25	25	25
Cortland	25	25	25	25	25

Administration of the Surveys

Administration of the surveys to occupational teachers and students was accomplished through each BOCES' administrative staff. The rationale for this procedure was to assure teacher and student participation without the intervention of State Education Department personnel. Based on prior experience, it was felt that given appropriate guidelines and procedures for administration, local personnel could obtain better respondent cooperation.

Accordingly, procedures were established and reviewed for BOCES administrative staff before the surveys were distributed to them for their teachers. All surveys had a cover letter from the evaluation coordinator introducing the survey, explaining the task involved, and the purpose of the survey. Envelopes were supplied with the survey form so that teacher anonomity would be maintained. The sealed envelopes were consolidated in one package and then returned via the mail by the BOCES administrative staff.

The teacher evaluations of media used during the course of the evaluation were recorded on the half page survey form sent with each videocassette scheduled from their communications center. The BOCES educational communications staff in each BOCES collected forms and followed up forms which were not sent back by

teachers when they returned the videocassettes. In the case of the Educational Communications Directors, and the Occupational Education Directors, contact was made directly by the evaluation coordinator. Their survey forms were distributed to them directly and collected directly from them through the mail.

Survey Returns

Table 2 provides response rates for the occupational teachers (pre and post) as well as returns from the teacher's individual media evaluation sheets, the communications director's surveys and the occupational education director's surveys. As is indicated, the return rate on the teacher's post survey is less than that of the pre-survey. Any explanation of this difference must take into

Table 2

Response Rates*

Those Surveyed	Total Number	Number Responding	Percentage
Occupational Education Teachers			
Pre-Assessment	362	279	77%
Post Assessment	352**	159	45%
Teachers' Individual Media Evaluation Sheets (Jan. to June)		668 Forms Completed	
Educational Communications Directors			
Pre-Assessment	11	11	100%
Post Assessment	10**	9	90%
Occupational Education Directors			
Post Assessment	15	12	80%

*Criteria for valid survey responses were those that provided identification of the respondent's BOCES and at least 70% completion of the survey.

**NOTE that Schoharie center was originally anticipated to receive all project equipment and materials despite its late inclusion in the funding. Because of delays in receiving videocassette equipment at that center until the last two weeks of school, the decision was made to drop that center from the post-assessment.

account the late administration data of the post-survey during the last two weeks of school in June. This period in June is undoubtedly very hectic for teachers. This administration point was decided upon, however, to allow the maximum amount of time for teachers to utilize the project materials before the post survey. Despite follow up reminders to teachers, it appears that many teachers were just too busy to complete and return the surveys. As will be developed later, this lower response rate presents no serious problem. Furthermore, since the teachers individual media evaluation sheets were completed by the teachers each time they used a Project 81 videocassette, they provide continuous reaction and information on the utilization of materials by teachers throughout the project evaluation period.

Table 3 and Table 4 break down the student response rates from each BOCES and content areas sampled.

Table 3

Response Rates from Each BOCES

BOCES	Returned
Allegany	51
Broome-Tioga	87
Delaware Chenango	94
Cortland	22
	Total: 254

Table 4

Response Rates from Each Content Area Surveyed

Content Areas Represented	
Agriculture/Conservation	29
Building Trades	62
Business	21
Health	48
Personal Services	82
*Other	12

RESULTS

I. ANTECEDANT (Baseline State)

A. Demographic Characteristics of Teachers

Table 5 provides descriptive statistics on the occupational teachers in all of the Appalachian BOCES centers. As is presented in the table, a majority of the teachers were born in the New York Appalachian region. Computations indicate that there has been little teacher mobility from their birthplace to their teaching location. As might be expected, those counties which were more populated contributed proportionally more teachers.

Data indicated that the median educational level of occupational teachers was more than a two year associate degree. Nearly one quarter of the teachers had obtained a masters degree or higher while over one quarter had attended college but had earned no degree. Data calculations show that the major portion of teachers' post secondary education was undertaken on an average of only one county (50 miles) from their present employment. The fact that teachers have undertaken course work within their own county indicates again a great deal of stability over time, not only in the schools, but in the communities as well. This lack of teacher mobility is also reflected in the number of years that teachers have been teaching in the same BOCES ($\bar{x}$ = 5.9 years) as compared with their total number of years teaching ($\bar{x}$ = 7.99).

The teachers in occupational education are somewhat unique in the teaching profession in that the majority of them either have been or are employed in another profession or trade besides teaching. The data indicate that the average number of years of such employment is over 14. It is probable that this outside employment produces teachers who are more familiar with changes and developments in their profession and probably less reluctant to incorporate these changes into their own instruction.

Occupational teachers in Appalachia have been exposed to a number of aspects of communications technology and media. Twenty percent of the teachers have had specific college training in communications technology while over 50% have had inservice training in media production and utilization (58% and 67% respectively). The number of hours of such training was fairly limited, however, before Project 81 as the distributions for media production training and utilization training indicate (medians .56 and 1.66 respectively).

Table 5

Descriptive Data on Occupation Education Teachers

ITEM — STATISTIC — N = 279

Birth by Area

	County	Frequency	Percent	
Appalachia	Allegany	7	3%	
	Broome	18	7%	
	Cattaraugus	21	8%	
	Chautauqua	13	5%	51%
	Chemung	16	6%	
	Chenango	6	2%	
	Cortland	1	1%	
	Delaware	9	4%	
	Otsego	4	2%	
	Schoharie	3	1%	
	Schuyler	2	1%	
	Seneca	1	1%	
	Steuben	22	9%	
	Tompkins	4	2%	
New York Outside Appalachia	Western NY	32	13%	
	Northern NY	5	2%	26%
	Central NY	6	2%	
	Southern NY—NYC & LI	23	9%	
Outside New York State	Pennsylvania	32	13%	
	All Other States	25	10%	23%

Birth by Distance

$\bar{X}$ = 3.57 Counties or approximately 180 miles from present employment. (S. D. = 4.88 counties)

Education

	Frequency	Percent
Less than High School Diploma	1	<1%
High School Diploma or Equivalent	9	3%
Some College—No Degree	74	27%
Two Year Associate	31	11%
Bachelor's Degree	96	35%
Master's Degree	63	23%
Doctorate	1	<1%

(Continued)

Table 5 (Continued)

Occupational Education Teachers N = 279

Post Secondary Education by
County Where Attended

BOCES	Frequency Per	Percent of Total
Allegany	18	6%
Broome	38	14%
Cattaraugus	28	10%
Chautauqua	35	13%
Cortland	20	7%
Delaware/Chenango	13	5%
Greene	17	6%
Schoharie	12	4%
Schuyler/Chemung	47	17%
Steuben	39	14%
Tompkins/Seneca	12	4%

Education by Distance

$\bar{x}$ = 1.07 counties or approximately 50 miles from present employment to location of major portion of post-secondary education. (S.D. = 1.62 counties)

Media Training

Major or minor area of College Study related to communications or communications technology.

Yes	52	20%
No	212	80%

In-service training related to the production of instructional media and technology.

Yes	158	58%
No	113	42%

Number of hours training $\bar{x}$ = 5.98 hours (S.D. = 11.4)

In-service training related to the utilization of instructional media and technology.

Yes	175	67%
No	87	33%

Number of hours of training $\bar{x}$ = 5.48 hours (S.D. = 10.38)

Experience

Teaching Experience: $\bar{x}$ = 7.99 years (S.D. = 5.78)

Years Teaching in present BOCES: $\bar{x}$ = 5.93 years (S.D. = 3.99)

Years employed in a trade besides teaching: $\bar{x}$ = 14.1 years (S.D. = 8.29, N = 159)

B. Demographic Characteristics of Centers

The regional occupational education centers in Appalachia (BOCES) while sharing a number of characteristics and problems differ among themselves on a number of dimensions. Table 6 provides statistics on the sizes of each of the BOCES in terms of the number of teachers and enrollment size. Although no information was collected on this point, interviews indicated a wide variance in the age of various BOCES operations including their occupational education as well as their educational communications programs. For example, Chautauqua and Tompkins BOCES have provided services for a number of years while Broome and Schuyler are fairly new operations. The relative maturity of the various BOCES structure was not a factor considered in the present evaluation study because of its numerous dimensions. This is not to deny the importance of these various structures and their influence on patterns of operations, but only to admit an uncertainity of how to appropriately include them in the overall design.

Table 6

Demographic Statistics
Occupational Education Centers (BOCES)

BOCES	Number of Teachers	Enrollment	
Allegany	21	736	
Broome	39	1380	
Cattaraugus	50	1252*	604/648*
Chautauqua	36	1141*	601/540*
Cortland	21	580	
Delaware-Chenango	35	956*	386/570*
Greene	25	544*	246/298*
Schuyler	47	1226	
Steuben	54	1385*	587/798*
Tompkins	24	609	
Schoharie-Albany	10	250	
	362	10,059	

*BOCES with more than one center.

Table 7 provides a distribution of classes within each content area and the average student enrollment within these content areas. As the table illustrates the areas with the largest number of classes are auto trades, building trades, trade/industrial, and other (37, 36, 33, 63 classes respectively). The

content areas with the smallest number of students are distributive education, electronics, drafting, and food services (9, 12, 15, 16 classes respectively). Those content areas comprised of fewer classes also appear to have a considerably lower average student enrollment while those content areas with more classes being taught in them seem to have larger average student enrollments. Part of this discrepancy between the larger enrollment classes and those with fewer classes and lower enrollments may be the way the content areas are divided. Agriculture, Auto Trades, Building Trades, and Trade/Industrial classes are each broken into a number of sub-clusters and skill areas depending on the BOCES. Within an area like building trades are a variety of sub-content areas as plumbing, masonry, and residential wiring. The divisions of content areas and the emphasis on various skill areas varies from BOCES to BOCES and even from center to center within a BOCES itself. A breakdown of all the occupational courses taught within the 11 BOCES of Appalachia is presented in Appendix C.

Table 7

Descriptive Data on BOCES Centers

Item	Statistic	
Content Areas Taught	Number of Classes	Average Student Enrollment
Agriculture	31	30.87
Auto Trade	37	35.27
Building Trades	36	32.47
Business Education	28	28.82
Distributive Education	9	19.34
Drafting	15	24.12
Electricity	17	23.88
Electronics	12	19.83
Food Services	16	27.88
Health Services	24	25.20
Personal Services (Cosmetology)	20	27.45
Industrial	33	30.36
Other	63	29.81

Those specific sub-content areas that are a part of at least two thirds (10 of the 15 BOCES centers) are listed in Table 8.

Table 8

Course Offerings in at Least Two-Thirds of the BOCES Centers

Agriculture Mechanics
Auto Body
Auto Mechanics
Child Care
Cosmetology
Conservation
Construction
Data Processing
Drafting
Electrical Trades
Food Services
Health Service
Machine Trades
Office Practice

These fourteen course offerings make up only 23% of the 61 courses offered within BOCES centers. Of these fourteen courses, only auto mechanics is taught in all centers while cosmetology is taught in all but one of the centers. This divergence of programs between centers presented some problems in assessing the pertinence of Project 81 materials just as it must have in the decision making process of materials identification and selection. As will be noted later, every attempt was made to make distinctions between adoption and utilization of Project 81 materials based on centers and content areas.

C. Innovation Dimensions (antecedant state)

1. Videocassette Equipment

In order to assess the extent of diffusion of the Project 81 videocassette equipment and materials, data were collected to determine the existence of this equipment prior to the project. Table 9 provides a breakdown on video equipment availability prior to Project 81 funding. Video equipment is subdivided into categories of monitors, videocassette players, videocassette recorders, and special purpose videoplayers/recorders. As Table 9 outlines, there was some variance in each category depending on the BOCES.

Table 9

Video Equipment Availability to Occupational Education Centers

Prior to Project 81

BOCES	Color TV Monitors	Video-Cassette Players	Video-Cassette Recorders	Special Purpose Video Players or Recorders
Allegany	0	0	0	0
Broome	9	4	5	9
Cattaraugus	1	0	3	0
Chautauqua	5	3	0	2
Cortland	0	0	0	1
Delaware	2	0	5	0
Greene	11	1	0	0
Schuyler	1	1	0	1
Steuben	2	2	2	1
Tompkins	21	16	12	18
Schoharie	0	0	0	0

Three centers (Allegany, Cortland, and Schoharie) had no television monitors, videocassette players or recorders before Project 81. Tompkins BOCES stands out as the BOCES with the largest amount of equipment before Project 81.

Table 10 lists the availability of 16mm film projection equipment availability by center. Since the 16mm format has been the primary instructional

Table 10

16mm Film Projection Equipment Availability
Occupational Education Centers (BOCES)

BOCES	Number of Projectors
Allegany	4
Broome	6
Cattaraugus	6
Chautuaqua	15
Cortland	3
Delaware	8
Greene	4
Schuyler	6
Steuben	2
Tompkins	22
Schoharie	1
	77 Total

media format used by educators, the number of projectors in each BOCES puts on upper limits the potential media utilization. Table 11 presents a comparison between both 16mm film projection equipment and videocassette equipment prior to Project 81. Quantities of equipment are given both by teacher and by student to indicate the potential availability of both formats. It is clear from Table 11 that prior to Project 81 equipment in the 16mm film format was considerably more available than videocassette.

Table 11

Number of Teachers and Students Per Film Projector and Video Cassette Units (Before Project 81 Equipment Purchases)

	Teacher Per Film Unit	Student Per Film Unit	Teacher Per Video Unit*	Student Per Video Unit*
Allegany	5.25	184	0	0
Broome	6.5	230	4.3	153.2
Cattaraugus	8.3	208.6	16.6	417.3
Chautauqua	2.4	76.1	12	380
Cortland	7	193.3	0	0
Delaware	4.38	119.5	7	191.2
Greene	6.25	136	25	544
Schuyler	7.8	204.3	47	1226
Steuben	27	692.5	135	346.25
Tompkins	1.09	27.68	.86	21.75
Schoharie	10	250	0	0

*Note Video Units are videocassette players or recorders in combination with at least one video monitor.

2. Videocassette Materials

Table 12 indicates the total amount of film and video program materials available from each BOCES. In order to determine the availability of occupational education films and videotapes, the communications directors in each center were asked to examine their catalogs to determine the number of films and videotapes directly applicable to and generally used by occupational education teachers. Table 12 provides the results in terms of numbers as well as percent of total BOCES center media collection. The average percent of total

Table 12

BOCES Media Materials
Films and Videotapes Prior to Project 81

	Film			Video		
	Total # of Films in Catalog	Number Specifically Relevant to Occ. Ed.	Percent Relevant to Occ Ed	Total # of Videotapes in Catalog	Number Specifically Relevant to Occ. Ed.	Percent Relevant to Occ Ed
Allegany	1064	63	6%	1030	44	4%
Broome	800	20	2%	1000	100	10%
Cattaraugus	1800	212	12%	3600	41	1%
Chautauqua	2600	150	6%	2236	167	7%
Cortland	1245	52	4%	987	41	4%
Delaware	1318	28	2%	1062	37	3%
Greene	1350	27	2%	1350	27	2%
Schuyler	500	46	9%	1000	68	7%
Steuben	1721	146	8%	991	146	15%
Tompkins	1843	96	5%	1000	70	7%
Schoharie	1537*	49	3%	5	0	0%
Total	$\bar{x}$ = 1434.36	$\bar{x}$ = 80.82	$\bar{x}$ = 5.36%	$\bar{x}$ = 1296.45	$\bar{x}$ = 67.36	$\bar{x}$ = 5.45%

* These materials were available for use only by the Albany BOCES.

collection (either film or video) that was applicable to occupational education was only a little over 5%. The data substantiate one of the initial premises of the project funding, the lack of media materials relevant to occupational education.

D. Antecedant Interaction Dimensions

1. Amount of Innovation Utilization (prior)

Since the amount of film and videocassette equipment, as well as media materials, available to occupational education teachers was fairly limited, it was expected that the media utilization would be minimal. In order to verify this assumptions, utilization data were collected from the users themselves (teachers) as well as from the educational communications centers serving the occupational education programs. Both sources were queried because both deal with a different dimension of media utilization. Despite the educational communication center role as suppliers of instructional media resources, account had to be taken of the fact that occupational education teachers could utilize other film and tape sources. These outside sources included other film libraries (as Syracuse University), free film loan enterprises, and film leasing. Because of these outside sources, teacher utilization data was expected to be more accurate overall.

Table 13 provides a breakdown by year (1972-75) and by BOCES of both film and videotape utilization in occupational education. The data were collected from the BOCES Communications Directors. Data points are missing in the table because many BOCES educational communications programs did not keep records on occupational education. Utilization of filmed and videotape while increasing in some BOCES decreased in others. No clear pattern is discernable from the BOCES utilization records.

Table 14A presents data collected from the occupational teachers' pre-survey administered in December, 1975. The average number of hours of film videocassettes/tapes, and educational broadcast television reported used by teachers are listed in Table 14A by BOCES. All these figures are for the entire school year prior to Project 81. Film utilization far exceeded videotape utilization, which far exceeded broadcast television.

One-way Analyses of Variance (ANOVA) were run on film and video utilization of teachers to determine whether the means utilizations between BOCES

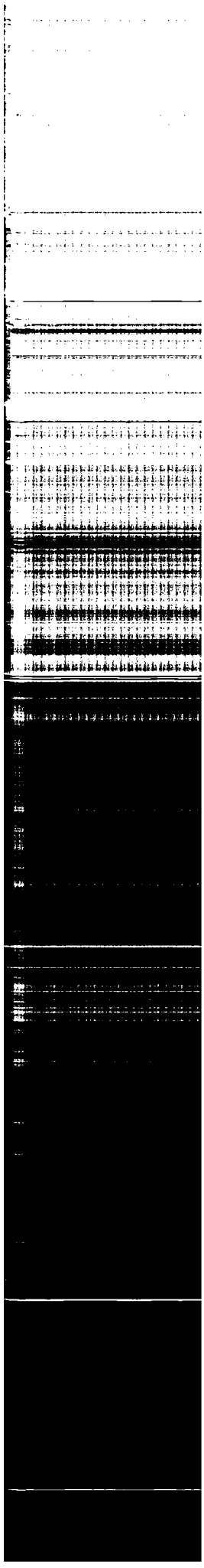


Table 13

BOCES Media Utilization* by Occuaptional Education Teachers—Prior to Project 81

	Film				Video (Tapes & Cassettes)			
	1972	1973	1974	1975**	1972	1973	1974	1975**
Allegany	123	169	150	283	0	0	0	87
Broome	***	***	60	20	***	15	29	60
Cattaraugus****	192	250	325	404	0	0	0	134
Chautauqua****	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Cortland	95	151	235	250	0	0	0	0
Delaware	NA//NA	NA//NA	44//N/A	N/A//N/A	0//N/A	0//N/A	0//N/A	35//N/A
Greene	NA//150	NA//180	N/A//200	N/A//210	N/A//0	N/A//0	N/A//0	N/A//60
Schuyler	***	***	***	228	***	***	***	51
Steuben	N/A	120/120	160/162	125//130	N/A	176//64	251//63	197//37
Tompkins	194	152	197	74	0	0	0	32
Schoharie	N/A	N/A	57	83	N/A	N/A	N/A	N/A

* Note that these figures represent only that portion of media materials booked through the BOCES Education Communication Centers. Teachers did utilize outside sources of media.

** From September 1975 to December 1976.

*** Communications center was not in operation.

**** Total combined from both BOCES centers.

N/A No records available on utilization.

Note that Cortland and Tompkins BOCES are members of the Central New York BOCES Educational Communications Consortium and as such have access to the vocational and technical film collections of the three other BOCES in the Consortium (Cayuga, Oswego, and Onondaga).

Table 14A

Average Teacher Utilization of Three Media Formats in the School Year

Prior to Project 81 (Sept. '74–June '75)	Film $\bar{x}$ Hours	Video $\bar{x}$ Hours	Ed Broadcast TV $\bar{x}$ Hours
Allegany	24.78	2.06	0.0
Broome	8.63	7.24	1.24
Cattaraugus	7.32	3.75	.464
Chautauqua	7.31	4.49	.114
Cortland	12.10	1.35	0.0
Delaware	16.85	3.85	0.0
Greene	8.88	6.88	1.42
Schuyler	9.02	4.70	.94
Steuben	7.74	2.94	0.0
Tompkins	8.92	1.50	0.0
Schoharie	1.83	5.17	0.0
Total	9.68	4.24	.473
	SD = 15.56	SD = 12.28	SD = 2.47

Table 14B

Film Utilization Hrs.

Source	df	SS	MS	F
Between (BOCES)	10	8094.19	809.42	4.16*
Within	161	31329.80	194.49	
Total	171	39423.99		

*p < .01

Video Utilization Hrs.

Source	df	SS	MS	F
Between (BOCES)	10	1142.12	114.21	.709
Within	161	25903.93	160.89	
Total	171	27046.05		

NS

differed significantly. The results of the ANOVAS for hours of film and video used are presented in the Table 14B. (No analysis of educational broadcast television utilization was done because of negligible use of this format by occupational teachers.) There is a significant F for hours of film utilization, indicating that at least one of the mean film utilization figures for a BOCES differs significantly (statistically from the others). Post hoc analyses determined that Allegany, Cortland, and Delaware BOCES had mean utilization figures which differed statistically from the other BOCES ($p<.01$). Four additional ANOVAS were run on the number of films and videotapes used in 1974 and the number of films used in the first-half of the school year. Results of the four analyses indicated no significant differences between BOCES' and are not reported here. The conclusion is, therefore, that average video utilization within each BOCES does not differ significantly between BOCES, and that a homogeneous pattern of video utilization existed prior to Project 81. One-way analyses of variance were also run on film and television utilization to determine whether the mean utilization for content areas differed. These results indicated no differences in utilization between content areas.

The figures in Table 15 compare the film and videotape utilization by teachers during the last entire school year prior to Project 81 (September 1974 to June 1975) and the school year the teachers were in when the survey was administered (September 1975 to January 1976). Because the length of time between the two periods was unequal---9 months versus 4 months---the average number of films and videotapes were divided by .9 or 4 respectively to obtain a monthly average for each BOCES. The average utilization appears to have increased to some extent in film and universally in video. This difference was tested statistically and the results are presented later in the text.

2. Pattern of Media Utilization

In order to make comparisons not only on the basis of number of films and videotapes used (utilization), but also on the basis of adoption of media as an integral part of instruction, data were collected on both the pre and post teacher surveys relative to the patterns of media utilization. These data were arrayed along two primary dimensions: first, the overall percentage of total instruction time in a school year that a teacher uses media, and second, the percentage of total media time that a teacher uses media for total class instruction, small group instruction, and individualized instruction.

Table 15

Average Number of films and Video Materials
Used Monthly by Occupational Education Teachers
(Pre-Survey)

	Film		Video	
	Last School Year 9/74 - 6/75	This School Year 9/75 - 1/76	Last School Year 9/74 - 6/75	This School Year 9/75 - 1/76
Allegany	1.50	2.18*	.104	.805*
Broome	.786	.612	.41	.58*
Cattaraugus	1.004	1.125*	.44	.53*
Chautauqua	1.114	.94	.43	.28*
Cortland	1.52	1.412	.26	1.23*
Delaware	1.49	2.14*	.49	1.81*
Greene	1.46	1.06	.72	.66*
Schuyler	1.03	.98	.24	.46*
Steuben	.81	.88*	.12	N/A
Tompkins	1.03	1.10*	.27	.79*
Schoharie	.21	.14	.30	
Total	1.08	1.06	.33	.65*

*Monthly average of this school year exceeds that of prior school year.

The proportion of instructional time with small group mediated instruction and individualized mediated instructed was of particular concern in the study because these two modes were thought to reflect a more committed and involved media user. Use of media for total group instruction, while effective in many instructional situations, does not fully utilize the inherent capability of media to instruct students. It seems logical to assume that the more committed a teacher is to the capabilities and applications of media, the more he or she will use media, and the more they will use media resources as integral aspect of instruction with assigned instructional responsibilities. Generally, small group and individualized applications of media are more efficient and cost-effective allocations of teaching resources within a classroom, while total class media applications frequently involve redundant resource allocations (both teacher and media).

Table 16 provides a breakdown of total instructional time and media utilization for entire class, small group, and individualized instruction.

As was expected, media was used primarily for entire class instruction, with considerably less use in small group and individualized modes.

Table 16

Pattern of Media Utilization
Pre-Survey

Instructional Mode	Percent of Total Instructional Time That Mode is Used	Percent of Time That Media is Used in Instructional Mode
Entire Class Instruction	$\bar{x}$ = 33.591 SD = 41.216	$\bar{x}$ = 9.882 SD = 22.337
Small Group Instruction	$\bar{x}$ = 13.118 SD = 34.878	$\bar{x}$ = 2.025 SD = 10.608
Individualized Instruction	$\bar{x}$ = 17.437 SD = 25.851	$\bar{x}$ = 1.656 SD = 8.425

Average Weighted Proportion of Media use by Instructional Mode*

$\bar{x}$	Entire Class Media	4.32%	SD = 11.914
$\bar{x}$	Small Group Media	.579%	SD = 6.011
$\bar{x}$	Individualized Media	.361%	SD = 2.459

$\bar{x}$ Total Percent Media Use 5.26% SD = 13.727

*Computed for each category by multiply proportion of total time by portion of media use in category. Total computed for each individual teacher by totaling the three categories and then computing the average.

3. Problems of Media Utilization.

The pre-survey had 12 items which attempted to assess the kinds of problems that teachers had with the use of media for instruction. As is discussed in the Methodology Appendix E, all the use problems were factor analyzed. All the items loaded on one factor. This was contrary to the anticipated results, since the items were designed to investigate two dimensions: the mechanics of equipment and scheduling procedures of media use, and the other, the instructional materials programming aspects of media use.

Table 17 examines the survey results along these two dimensions. It is obvious that the mechanics of equipment use and scheduling are not major problems for teachers. The mechanics of operating equipment is one area that teachers feel particularly competent. In the instructional program dimensions of media utilization problems, the lack of relevant up to date media program materials posed the greatest problem for occupational teachers. The unavailability of media materials perceived by teachers coincides with the underlying need that Project 81 sought to deal with. Teachers saw little problem integrating media and did not feel that the use of media was incompatible with course objectives. Nor did teachers voice any lack of confidence in the effectiveness of instructional media. Their primary concern was that appropriate materials were not available and it is this unavailability that is a greater problem than any

Table 17

Use Problems Expressed by Teachers

Scale 1 to 3: 1 = A major problem
2 = A minor problem
3 = Poses no problem

		S.D.
Mechanics of Equipment Use and Scheduling	Inadequate supply of equipment.	$\bar{x}$ = 2.32
	Difficulty in scheduling equipment.	$\bar{x}$ = 2.46
	Reliability of equipment.	$\bar{x}$ = 2.72
	Difficulty of operating equipment.	$\bar{x}$ = 2.78
	Difficulty of scheduling programming.	$\bar{x}$ = 2.40
Instructional Programming	Availability of relevant programming.	$\bar{x}$ = 1.68
	Outdated media materials.	$\bar{x}$ = 1.96
	Poor production quality of programming.	$\bar{x}$ = 2.42
	Difficulty of integrating media into instruction.	$\bar{x}$ = 2.52
	Incompatibility of media with course objectives.	$\bar{x}$ = 2.24
	Lack of special training in the use of media.	$\bar{x}$ = 2.64
	Lack of confidence in the instructional effectiveness of media.	$\bar{x}$ = 2.64

other factors in their use of media. Although teachers placed less stress on media equipment availability as a problem in utilization, it might be suggested that they did this only because programs were not available to use and the presence or absence of equipment was purely academic. The mechanical-equipment dimension because it is only an intervening aspect of media use would not reflect the major problem area for users. It would seem that as equipment and materials do become available, mechanical problems of scheduling will become a more realistic consideration for teachers.

Another aspect of media utilization tied to the availability of media equipment and materials as well as the system for obtaining those media materials is the ability to anticipate utilization. When asked how far in advance they can predict the use of a film or television program, the mean response on the Likert scale was between two to five days and two to four weeks ($\bar{x}$ = 3.36, SD = .858 with two to five days = 3 and two to four weeks = 4).

In terms of the physical system, teachers were fairly positive toward their respective BOCES materials and services on the pre-test. The mean rating for BOCES materials and services was between good and adequate on a five point Likert scale from Excellent to very poor (with Good = 2 and adequate = 3, the mean response was 2.59).

4. Attitudes Toward Media (Film and Television).

Affective data were collected from occupational teachers relative to their perceptions of film and television. The mean responses for all the individual items are presented in Appendix B (Teacher Pre-Survey). The attitude items were Likert type using a five point scale with 1 equal to strongly agree, 3 equal to uncertain, and 5 equal to strongly disagree. The mean response on most items was between 2 and 3, indicating moderate agreement. Those items that had mean responses more agreeable or more disagreeable are presented in Table 18.

The overall responses, as Table 18 indicates, are fairly positive toward television and film. Teachers appear to agree that media have a number of characteristics which make them worthwhile instructionally, and that media film and television are more than entertainment. Teachers do not feel that media improve reading skills or can provide adequate instruction without a teacher. They feel that media have value primarily as instructional supplement.

Table 18

Teacher Attitude Responses on Selected Items*

Pre-Survey

Do film and television:	$\bar{x}$
Increase the cognitive learning of students	2.32
Increase the affective learning of students	2.130
Increase the learning of skills	2.220
Summarize or provide overview very effectively	1.870
Increase retention of information	2.129
Provide a wider range of approaches to problems than is possible in regular classroom instruction	1.864
Emphasize entertainment at the expense of learning	3.261
Make students impatient in regular classroom instruction	3.475
Provide a varied instructional pace	1.911
Provide effective student reinforcement	1.957
Increase student reading skills	3.504
Decrease classroom order and control	3.64
Have value mainly as an instructional supplement or enrichment	2.019
Increase teacher workloads	3.380
Provide adequate instruction without a teacher	3.954

*Note that items were scaled on a 5 point Likert Scale.

1 = Strongly agree
2 = Moderately agree
3 = Uncertain
4 = Moderately disagree
5 = Strongly disagree

Interestingly enough, they also do not agree with the commonly expressed belief that media decrease classroom order, that media makes students impatient in their regular classroom instruction or that media increases teacher workloads.

In summary, the occupational education teacher's attitudes toward media on the pre-survey provide a picture of positive support for the value and capability of media while at the same time reservations about its value without

teacher intervention and direction during its use. Teachers expressed little anticipated change in their role if film and television were a regular part of instruction. When asked to what extent their present role as teacher would change if television and film were a required part of their regular classroom instruction on a 4 point Likert Scale (with No change = 1, Minor change = 2, Major change = 3, and Total change = 4) their mean response was 1.78 (SD = .721). When asked to describe the reactions of their students toward the film and television programs they used for instruction, teachers presented a fairly positive picture. On a five point Likert Scale (Very Favorable = 1, Favorable = 2, Uncertain = 3, Unfavorable = 4, Very Unfavorable = 5) the mean teacher response was 2.02 (SD = .786) indicating that students had reacted favorably to the media materials used.

II. INTERIM INTERACTIVE STATE--IMPLEMENTATION OF PROJECT 81

A. Amount of Equipment.

One intervention strategy used in Project 81 was the introduction of sufficient quantities of videocassette equipment to virtually eliminate availability problems. Table 19 enumerates the amount of videocassette players, and recorders as well as television receivers purchased under Project 81 and compares these quantities with the amount of equipment prior to the Project. As Table 20 also shows the number of teachers and students per video units was substantially reduced under Project 81 funding. The average number of teachers per videocassette unit was 1.3 after Project 81 and the overall average number of students per unit was 49. These figures provide evidence of the extensive diffusion of videocassette equipment, and the tremendous increase in equipment availability in the Appalachian area when compared with its prior state.

B. Amount of Materials.

The original project proposal specified that 500 films would be obtained and duplicated onto videocassettes. The number of films duplicated, cataloged, and available for use during the evaluation period extending from January 1, 1976 to June 25, 1976 was 470.

These 470 films were listed in an interim catalog distributed along with the videocassette masters to each BOCES center. Sufficient copies of the interim catalog were printed to distribute to all occupational education teachers.

Video Equipment Availability to Occupational Education Centers

	Prior to Project 81				After Project 81 Purchases			
	Color TV Monitors	Video-Cassette Players	Video-Cassette Recorders	Special Purpose Video Players or Recorders	Color TV Monitors	Video-Cassette Players	Video-Cassette Recorders	Special Purpose Video Players or Recorders
Allegany	0	0	0	0	(+21) 21	(+16) 16	(+ 4) 4	(+ 2) 2
Broome	9	4	5	9	(+ 9) 18	(+12) 16	(+ 4) 9	(9
Cattaraugus	1	0	3	0	(+36) 37	(+ 8) 8	(+ 5) 8	(+ 2) 2
Chautauqua	5	3	0	2	(+23) 28	(+11) 14	(+ 6) 6	2
Cortland	0	0	0	1	(+21) 21	(+ 5) 5	(+ 6) 6	1
Delaware	2	0	5	0	(+25) 27	(+13) 13	(+ 5) 10	(+ 2) 2
Greene	11	1	0	0	(+22) 33	(+ 0) 1	(+20) 20	0
Schuyler	1	1	0	1	(+21) 22	(+15) 16	(+ 7) 7	1
Steuben	2	2	2	1	(+15) 17	(+10) 12	(+ 0) 2	(+ 2) 3
Tompkins	21	16	12	18	(+31) 52	(+20) 36	(+ 0) 12	18
Schoharie	0	0	0	0	(+ 8) 8	(+ 5) 5	(+ 3) 3	(+ 1) 1

Note that number in parentheses indicates quantity purchased under Project 81.

Table 20

Number of Teachers and Student Per Film Projector and Video Cassette Units (Before and After Project 81 Equipment Purchases)

	Film Unit		Video Unit*			
			Before Project 81		After Project 81	
	Per Teachers	Per Student	Per Teachers	Per Student	Per Teachers	Per Student
Allegany	5.25	184	0	0	1.05	36.8
Broome	6.5	230	4.3	153.2	1.56	55.2
Cattaraugus	8.3	208.6	16.6	417.3	3.12	78.25
Chautauqua	2.4	76.1	12	380	1.8	57.05
Cortland	7	193.3	0	0	1.9	52.7
Delaware	4.38	119.5	7	191.2	1.52	41.6
Greene	6.25	136	25	544	1.19	25.9
Schuyler	7.8	204.3	47	1226	2.04	53.3
Steuben	27	692.5	135	346.25	3.86	98.9
Tompkins	1.09	27.68	.86	21.75	.66	16.9
Schoharie	10	250	0	0	1.25	31.25

*Note Video Units are videocassette players or recorders in combination with at least one video monitor.

(A copy of the interim catalog is listed in Appendix D.) · Table 21 sets forth the number of titles within each content area, listed in the interim catalog.

Comparing the titles listed in the interim catalog with the content areas most common to all BOCES (Table 8 and Appendix C) one can observe that all the content areas are represented in the title catalog. A few content areas—Auto Trades, Food Services, and Electricity appear to be less well represented in the catalog than some of the less important content areas.

Table 21

Project 81 Videocassette Titles
By Content Area

Content	Number of Titles
Agriculture	17
Auto Trades	16
Building Trades	43
Business Education	21
Career Education	64
Child Care	19
Conservation	22
Cosmetology	41
Drafting	17
Electricity	15
Food Services	13
Guidance	29
Health Services	47
Horticulture/Landscaping	6
Machine Trades	10
Plumbing, Heating, Refrigeration	12
Safety	32
Welding	10
Woodworking	59
Total:	493*

Note that 23 titles had applications which overlapped content areas.

When queried about the distribution of titles within content areas, individuals in both the State Education Department and the BOCES Communications Centers mentioned problems in obtaining duplication rights for particular films. It seems that some excellent materials within particular content areas (particularly Auto and Food Services) were not obtained for the project because appropriate video duplication rights could not be negotiated.

The majority of the titles in the interim catalog were from commercial sources. Fifty two of the 470 titles (11%) were so called free loan or "sponsored" films. These sponsored films are made available for educational use by governmental agencies and industries. The original funding proposal anticipated the use of sponsored films in the project because occupational teachers were already aware of sponsoring agencies and were already using the free loan films provided by these agencies. The negotiation of duplication rights for sponsored films assured that film materials were available to teachers (in videocassette form) when needed rather than subject to the vagaries of ordering, shipping and receiving films from around the country.

It appears that because of the wealth of sponsored film materials uncovered in Project 81, the printing of the final catalog was postponed. The final catalog to be printed at the end of August will include an additional 110 sponsored film titles. Members of the Appalachian BOCES Consortium and the State Education Department have indicated that this search for sponsored film materials will continue beyond the printing of the final catalog. The State Education Department has already formulated plans to extend the model of acquisition and duplication of sponsored materials to the entire state via a centralized state mechanism.

C. Strategies for Diffusion.

The original funding proposal included a re-education strategy to encourage adoption of instructional media as an integral aspect of instruction. This re-educative strategy or approach was formulated in workshops for teachers. Guidelines were developed by the State Education Department for these in-service workshops. The most important dimensions of the workshops for teachers were:

1. Overview of technology
2. Familiarization with equipment
   a. how to operate it
   b. what to do if it doesn't work

3. How to obtain materials
    a. Project 81 catalog
    b. existing BOCES materials
    c. ordering procedures
    d. additional sources
4. How to use media for instruction
    a. instructional patterns (entire class, small group, individualized)
    b. objectives media can serve
    c. how to integrate it into regular instruction
    d. what to do besides just showing a videotape

Because of the differences in BOCES operations and procedures, the specifics and format of the in-service workshops varied. At least one was conducted in each BOCES by the educational communications director in conjunction with the occupational education director. Some centers anticipated the Project 81 materials and held preliminary workshops with the occupational teachers after the equipment was in place in the BOCES, but before the videocassette materials were available (September-December 1975). Other centers waited until the materials were available in January, and then began the in-service workshops. As for format, some centers worked with large groups while others divided teachers into content clusters and worked with them on a more individual basis. The usual pattern consisted of at least two workshops--one for equipment use and the other for materials use and application.

The variations in implementation strategy used by the individual BOCES would be a worthwhile research dimension to pursue. The exact procedures used to get target consumer cooperation and acceptance are variables crucial to the process. Unfortunately, the difficulty of measuring and separating organizational influences from implementation strategies forced the evaluation to ignore these issues. It was assumed that, since the in-service workshops covered the same information, their effects were the same regardless of their exact form.

III. CONSEQUENT STATE

A. Diffusion Effects

1. Changes in Utilization

The key variable operationalized in the diffusion of innovation model of Project 81 was the change in utilization of videocassette media materials between the antecedant state and the consequent state. It was hypothesized that increased media equipment and materials (videocassette) would result in increased utilization. Data collected on utilization on the Post Survey is listed in

Table 22. In order to determine if the various BOCES were homogeneous in utilization One Way Analyses of Variance were performed on both the pre and posttest results. Table 23 presents these results. The only variables which differ significantly between the BOCES are hours of film used in 1974 (pretest) and number of films used in 1974 (posttest). Once the homogeneity of pre and post utilization of video materials was established, comparisons of the project effects on utilization were made.

Table 22

Teacher Media Utilization
Post Survey N = 159

	$\bar{x}$	SD
Number of Films in 1974 (year)	9.216	10.364
Number of Videotapes in 1974 (year)	5.109	8.728
Number of Films in 1975 (year)	9.804	12.010
Number of Videotapes in 1975 (year)	10.033	12.867
Number of Films in 1976 (five months)	5.107	7.595
Number of Videotapes in 1976 (five months)	6.836	9.356
Number of Project 81 Videotapes	8.505	10.295

Table 24A and 24B present the t-tests for significant differences between mean utilization of film and video, on the pre-test and posttest. Non-significant differences have not been tabled for brevity.

It can be concluded from these statistics that increased availability of video equipment and materials produced a significant increase in video utilization. There was no significant change in film utilization from Fall 1974 to the end of the project period in June 1976. Furthermore, film utilization was significantly higher than video use until the beginning of the project period (January through June). With the introduction of project equipment and materials there was sudden shift upward in video utilization resulting in a statistically significant difference between video and film use.

Table 23

Analysis of Variance Comparing
BOCES on Media Utilization

DEPENDENT VARIABLES (BOCES is the Independent Variable)

Pre-Survey Results (11 BOCES, 279 Teachers)

Media Utilization Variables	F-Value
Hours of Film Used in 1974	2.721*
Hours of Video Used in 1974	0.588
Number of Films Used in 1974	2.268
Number of Video Tapes Used in 1974	1.533
Number of Films Used from September 1975 to December 1975	2.261
Number of Video Tapes Used from September 1975 to December 1975	1.197

Post Survey Results (10 BOCES, 159 Teachers)

Media Utilization Variables	F-Value
Number of Films Used in 1974	2.547*
Number of Video Tapes Used in 1974	1.359
Number of Films Used in 1975	1.600
Number of Video Tapes Used in 1975	2.194
Number of Films Used in 1976 (January to June)	.342
Number of Project 81 Videocassettes Used	1.667
Increase in Film Use from 1974 to 1975	1.590
Increase in Video Use from 1974 to 1975	1.190

*p < .01

Table 24A

Analysis of Significant Differences
in Media Utilization

Pre-test Survey Results

Dependent Variable	$\bar{x}$	S.D.	t
1. Monthly Average of Films in 1974	1.08	1.34	.25
from September 1975 to December 1975	1.06	1.66	
2. Monthly Average of Video Tapes in 1974	.328	.68	-3.17*
from September 1975 to December 1975	.649	1.79	
3. Monthly Average Hours of Film in 1974	9.68	15.56	5.07*
of Video in 1974	4.24	12.28	
4. Number of Films in 1974	9.75	12.06	8.61*
Video Tapes in 1974	2.95	6.14	
5. Number of Films from September to December 1975	4.25	.40	2.92*
Video Tapes from September to December 1975	2.60	.43	

N = 279, * p .01

Table 24B

Post Test Survey Results

Dependent Variable			
1. Change in Film Use 1974 to 1975	.587	8.35	-3.68*
Video Use 1974 to 1975	4.92	10.77	
2. Monthly Average of Film in 1974	1.02	1.11	- .89
in 1975	1.09	1.30	
3. Monthly Average Film from September 1975 to December 1975	2.184		.75
January 1976 to June 1976	1.47		
4. Monthly Average of Films in 1974	1.02	1.11	- .97
From September 1975 to December 1975	1.17	2.18	

(Continued)

Table 24B (Continued)

Dependent Variable	$\bar{x}$	S.D.	t
5. Monthly Average of Films in 1974	1.02	1.11	0.0
from January 1976 to June 1976	1.02	1.47	
6. Monthly Average of Video Tapes in 1974	.57	.90	-5.77*
in 1975	1.12	1.40	
7. Monthly Average of Video Tapes in 1974	.57	.90	-1.45
from September to December 1975	.799	2.04	
8. Monthly Average of Video in 1974	.57	.90	-6.56*
from January to June 1976	1.37	1.79	
9. Monthly Average of Video in 1974	.57	.90	-9.32*
Project 81 Video	1.70	1.64	
10. Monthly Average of Video from September to December 1975	.799	2.04	-5.15*
Project 81 Video	1.70	1.64	
11. Monthly Average of Video January to June 1976	1.37	1.79	-3.27*
Project 81 Video	1.70	1.64	
12. Monthly Average of Film in 1974	1.02	1.11	4.90*
Video in 1974	.57	.90	
13. Monthly Average of Film January to June 1976	1.02	1.47	-2.03**
Video January to June 1976	1.37	1.79	
14. Monthly Average of Film January to June 1976	1.02	1.47	-4.33*
Project 81 Video	1.70	1.64	

N = 159, *p < .01
**p < .05

Note that negative t values indicate the second of the two means to be larger.

Since a number of estimates of media usage at different time points were available, it was possible to estimate the comparability of the pretest and post-test respondents on utilization. The estimates of their film usage in 1974 by teachers in the pre and post test groups was found to be essentially the same. However, the post test group estimated its 1974 video usage higher than did the pretest group. This seems to indicate that the post test respondents were higher video users.

The data are not sufficient to offer an irrefutable explanation for this difference in the two samples. The pretest questionnaires do have a higher rate of failure to respond to the usage questions which may be respondent error. It is also possible that the respondents on the post survey were simply higher users of video. To account for this difference in tests of change in utilization between 1974 and 1976, the difference between the pre and post estimates for 1974 was subtracted from the change between 1974 and 1976. Although this procedure produces an extremely conservative test, it still yielded the same significant t distributions, indicating that the change in video utilization is not spurious.

2. Changes in Patterns of Use

Patterns of media utilization were measured on both pre and post surveys to determine what changes took place in the way teachers adopted and relied upon media. The measurement assumed that if the quality of programming is equal across content areas, greater use of media for small group and individualized applications indicated a greater confidence in and positive attitude toward media.

Table 25 like Table 16 in the antecedant section of this report, provides data on the utilization patterns of teachers only this time on the post survey. Comparison of the post survey results in Table 25 with those of the pre-survey (Table 16) shows differences in all categories. The total $\bar{x}$ percent of media used for instruction had doubled from 5.26% to 10.54%. Likewise the percent of time that media is used in entire class, small group, and individualized instruction have grown (4.32% to 8.82%; .579% to .791%; and .361% to .919% respectively).

Independent t-tests performed on each pair of means (pre and post) summarized in Table 26, indicate significant positive change in total use of media and in the entire class mode. Although there were no significant differences in the small group and individualized modes, analysis of the means indicate

Table 25

Pattern of Media Utilization
Post Survey

Instructional Mode	Percent of Total Instructional Time That Media Is Used	Percent of Time That Media is Used in that Instructional Mode
Entire Class Instruction	$\bar{x}$ = 41.20 SD = 33.00	$\bar{x}$ = 24.97 SD = 36.09
Small Group Instruction	$\bar{x}$ = 19.73 SD = 18.49	$\bar{x}$ = 6.94 SD = 15.99
Individualized Instruction	$\bar{x}$ = 27.71 SD = 25.4	$\bar{x}$ = 4.97 SD = 15.51

Average Weighted Proportion of Media Use
by Instructional Mode

Entire Class Media	8.83%	SD = 20.20
Small Group Media	.791%	SD = 3.22
Individualized Media	.919%	SD = 5.87

Total $\bar{x}$ Percent Media Use 10.54%
SD = 17.748

that there is a positive trend. It is possible that the interval for the evaluation was too short to allow significant changes in the latter instructional modes. After teachers have used media for some time in the more traditional total class mode, their experience may lead them to more sophisticated uses.

Another dimension of teacher media utilization patterns was the amount of planning teachers did in using media. It was hypothesized that as teachers began to use media more they would plan further ahead for its use. As Table 27 shows, the amount of time teachers need to anticipate media use decreased significantly from pre-survey to post survey. This result, while not expected, may be due to the large quantity of material available and teachers' relative unfamiliarity with them. It is possible that after longer experience with the materials, the teachers may be more able to predict use further ahead.

Table 26

Patterns of Use

Comparisons of Instructional Modes

	$\bar{x}$	SD	t
Total Percent of Media Used			
Pre-Survey with Post Survey	5.26	13.727	-3.47*
	10.54	17.748	
Percent of Media Used in Entire Class Mode			
Pre-Survey with Post Survey	4.32	11.914	-2.74*
	8.83	20.20	
Percent of Media Used in Small Group Mode			
Pre-Survey with Post Survey	.579	6.011	- .408
	.791	3.22	
Percent of Media Used in Individualized Mode			
Pre-Survey with Post Survey	.361	2.459	-1.385
	.919	5.87	

*p < .01

Table 27

Ability to Anticipate Media Use

Item:

How far in advance can you predict when you will need to use a television or film program?

Less than one day	(1)
One day only	(2)
Two to five days	(3)
Two to four weeks	(4)
More than four weeks	(5)

(Continued)

Table 27 (continued)

Comparison of Pre and Post Results

	$\bar{x}$	SD	t
Pre-Survey	3.353	.858	
with			+2.46
Post Survey	3.140	.867	

3. Changes in Attitude

Since attitudes were expected to play an important part in the adoption and utilization of the project equipment and materials, comparisons were made between the pre and post survey attitudes. It was expected that the more positive the teachers' attitudes towards media, the greater their utilization of media.

T-tests were run on the attitude items from the pre-test and posttest. Results indicated that there was only one significant change in attitude, for the item "Do you feel that film and television decrease classroom control and order?". The significant t of -3.067 indicates that teachers more strongly disagreed with the statement on the posttest. Although the other differences are not statistically significant, they are in the direction of a more negative attitude towards media. This may indicate a trend towards a more realistic attitude towards media capability. A long term study would probably be required to determine if this change would continue with continued high use of video materials or would become positive again after some time.

4. Changes in Assessed Problems of Utilization

It was hypothesized that problems with media use that teachers perceived e existing would influence their use of media. Therefore, the use problems indicated by teachers on both the pre and post surveys were compared. The results of the pre-survey were presented earlier. The results of the post survey are presented in Table 28 and the t-test comparisons are presented in Table 29. There is a statistically significant decrease in the problems teachers saw with the quality and relevance of media materials (relevance and outdated materials). As noted earlier in the report, teachers said

Table 28

Results of Use Problems of Teachers
Post Survey

	$\bar{x}$	SD
Inadequate supply of equipment	2.445	.705
Difficulty in scheduling equipment	2.416	.708
Availability of relevant programming	1.933	.816
Difficulty in scheduling programming	2.517	.696
Outdated media materials	2.281	.692
Poor production quality of programming	2.448	.689
Incompatibility of media with course objectives	2.209	.793
Lack of support materials	2.329	.748
Programming unsuitable for instructional objectives without modifications	2.425	.693
Increased instructional planning and preparation time	2.547	.642

Scale:

1 = A Major Problem
2 = A Minor Problem
3 = Poses No Problem

these two areas were their primary problems in using media prior to Project 81. It seems that the media materials provided through Project 81 have diminished the problems of media use.

Table 29

Comparison of Use Problem Items of Teachers
Pre to Post Survey*

Item	$\bar{x}$	SD	t
Inadequate Supply of equipment			
Pre-Survey	2.316	.882	
with			NS
Post Survey	2.445	.704	

(Continued)

Table 29 (Continued)

Item	$\bar{x}$	SD	t	
Difficulty in Scheduling Equipment				
Pre-Survey with Post Survey	2.465 2.416	.506 .243	NS	
Availability of Relevant Programming				
Pre-Survey with Post Survey	1.684 1.933	.829 .817	2.92**	
Difficulty in Scheduling Programming				
Pre-Survey with Post Survey	2.396 2.517	.746 .696	NS	
Outdated Media Materials				
Pre-Survey with Post Survey	1.963 2.281	.818 .692	-3.92*	*P<.01 **P<.05
Poor Production Quality				
Pre-Survey with Post Survey	2.425 2.448	.691 .689	NS	
Incompatibility of media work Course Objectives				
Pre-Survey with Post Survey	2.243 2.209	.804 .793	NS	

Note that some items were included in the pre-survey which were not in the post-survey--See Methodological Appendix E.

BOCES MATERIALS and SERVICES			
Pre-Survey with Post Survey	2.593 2.086	1.901 1.427	-3.65

5. Variables Affecting Media Utilization: Theoretical Model

A number hypotheses regarding variables affecting teacher utilization of media were outlined in an earlier section. Three major categories of variables were expected to influence usage—characteristics of the teachers, perceived problems of using media in the classroom, and attitudes of teachers towards media as an instructional tool. The expected relationships which were subjected to path analytic procedures are shown graphically in Figure 3.

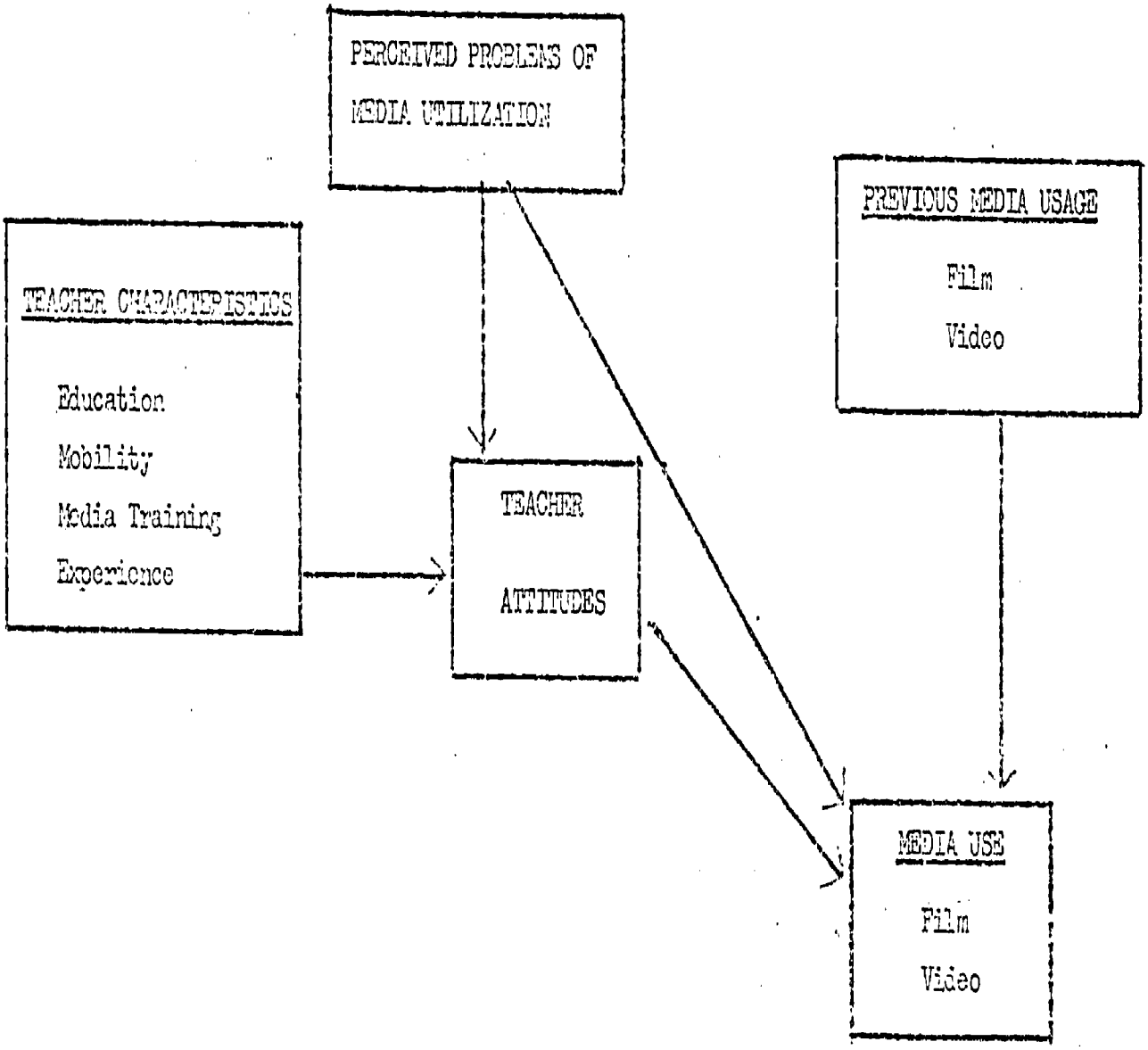


Figure 3

Theoretical Model of Relationships Among Variables Predicting Differences in Media Utilization

Teacher characteristics were expected to affect attitudes towards media. The higher the general education, media education and mobility of the teacher, the more favorable the attitude of the teacher towards media are likely to be. Perceived problems of media utilization were expected to affect attitudes towards media and media use. Teachers who perceive few problems in using media in their classes are likely to see media favorably as an instructional tool and are likely to actually use media more than the average. Finally, previous media usage should be related to current media usage. Teachers who have included media in their classes during one year are likely to take advantage of their work in including media in the past and to use media again.

Figure 4 shows the results of statistical analyses (Path Analyses) of the pre-test data on both film and video utilization. Only the statistically significant paths have been included in these figures. It is apparent that none of the teacher characteristic or attitude factors influenced either film or videotape usage. The only significant correlations are between film usage in 1974 and 1975 ($r = .71$, $p < .001$) and video usage in 1974 and 1975 ($r = .63$, $p < .001$). Whatever aspects of teachers account for use of media, other than consistent behavior, they fall outside those investigated in this model.

Figure 5 shows the corresponding results for the posttest data on both film and video. Again, only the statistically significant paths have been included in these figures. The only paths that are significant are the consistent ones between media usage figures for 1974 and 1976. Figure shows that the correlation has changed from .71 for the pretest to .61 for the posttest. Figure shows that the correlation dropped from .63 for the pretest to .52 for the posttest for video use in general, and dropped to .39 for the Project 81 materials only.

The results of the correlation between previous video use and Project 81 use seems to indicate that there may be new teachers using Project 81 materials who have never used videotape materials before. Other than this factor of Project 81's causing new teachers to use video materials, the reason why teachers use video materials, falls outside the variable included in these models.

B. Consequences and Outcomes

To assess the effects of Project 81 equipment and program materials, reaction data were collected form a number of sources.

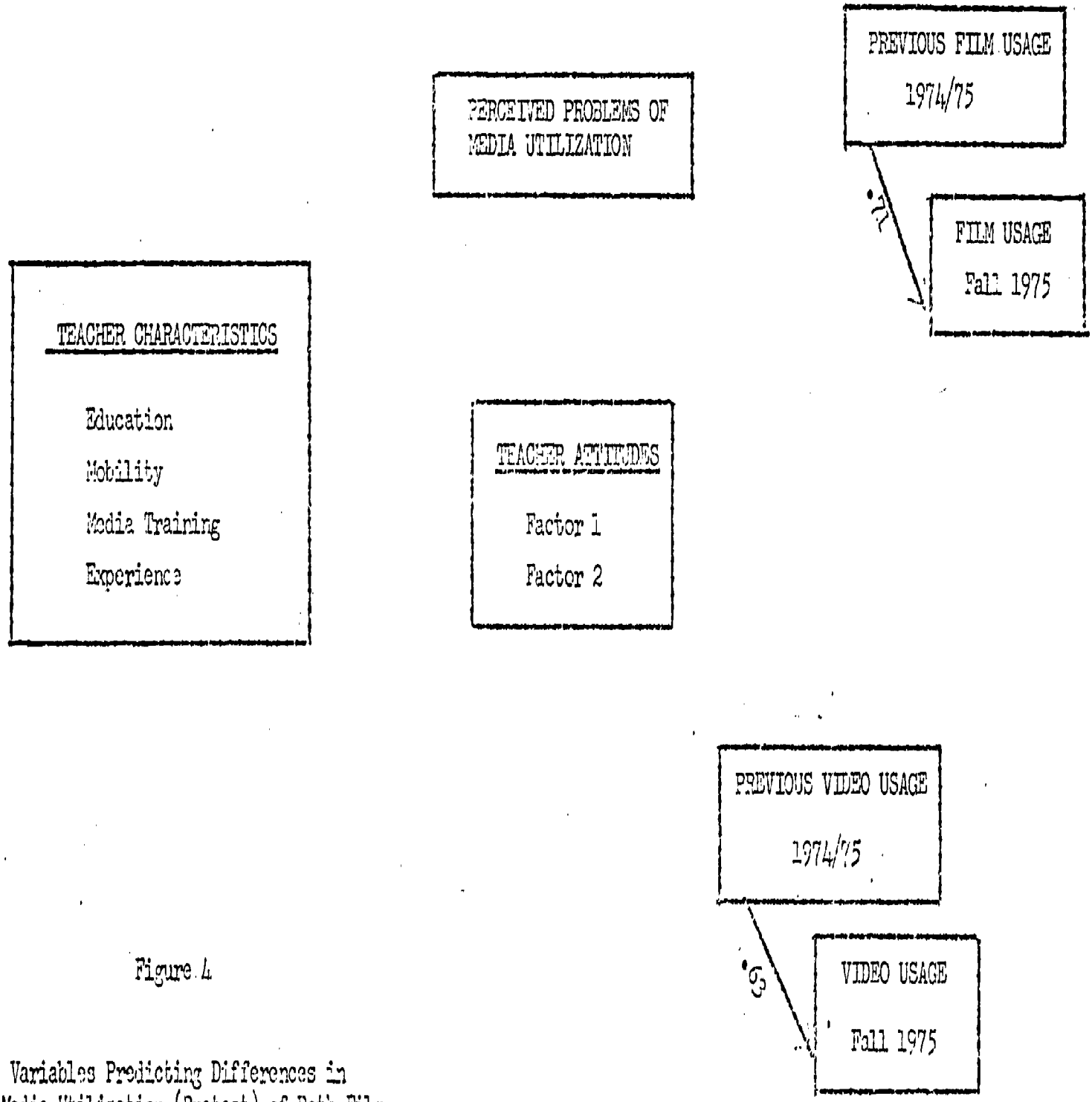


Figure 4

Variables Predicting Differences in Media Utilization (Pretest) of Both Film and Videotape

NOTE only significant paths are drawn.

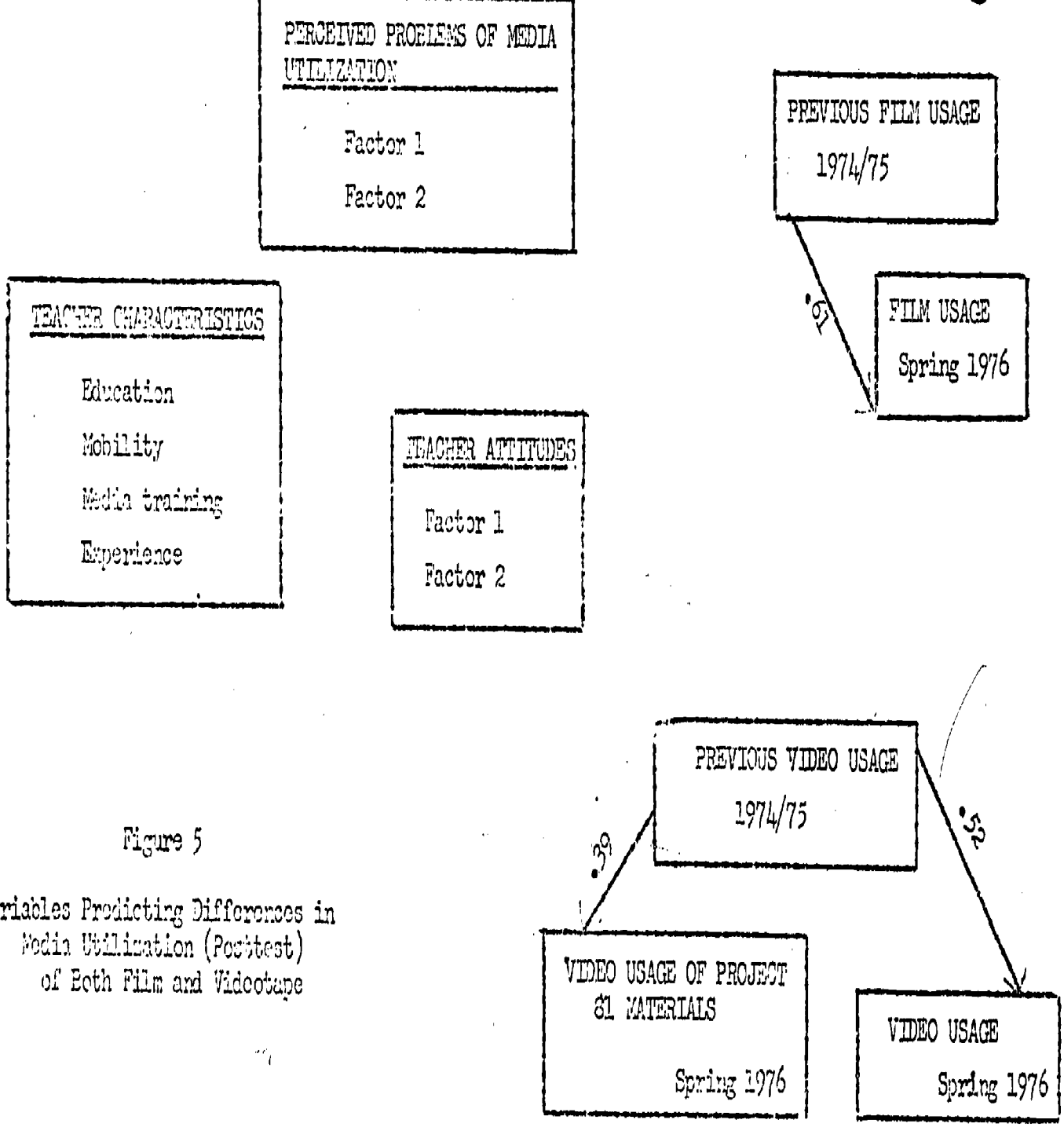


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Figure 5

Variables Predicting Differences in Media Utilization (Posttest) of Both Film and Videotape

NOTE: Only significant paths are drawn

B. Consequences and Outcomes

1. Teacher reactions.

Data from teachers were collected two ways—media evaluation sheets completed during the course of the project each time a teacher viewed a videocassette, and reactions collected on the post survey. Descriptive statistics from the media evaluation sheet filled out by teachers are summarized in Table 30, while results from the post survey are in Table 31.

Table 30

Descriptive Statistics of Teacher Media Evaluations
Completed During the Course of the Project
N = 668

	$\bar{X}$	SD
Number of viewing per each videocassette	1.78	.974
Average Viewing in each Instructional Mode:		
Entire Class	1.061	.327
Small Group	1.031	.172
Individualized	1.136	.554
Teacher Preview	1.007	.083
Instruction Objectives for viewing		
Introduction	1.068	.356
Summary	1.022	.149
Review	1.037	.211
Remediation	1.241	.689
Direct Instruction	1.050	.386

Reactions — Scale 0 to 10 with: 0 = lowest and 10 = highest

Item	$\bar{X}$	SD
How current and accurate was the material?	7.922	2.152
How appropriate was the material for your grade level?	8.066	2.284
How instructionally effective was the material?	7.804	2.283
How relevant was the material to your instructional program?	8.072	2.279
How favorable was the overall student reaction to the material?	7.721	2.354
How would you rate the material overall?	8.047	2.276

	Yes	No
Would you use the material again?	99.7%	.3%

The results of the occupational education teacher media evaluation sheets reflect a very positive assessment of the Project 81 materials in terms of quality, relevance, and effectiveness. The percentage of teachers that would use the materials again (99.7%) is indicative of this positive appraisal.

A one-way ANOVA was computed on the item requesting the overall reaction of teachers toward each videocassette they had used. BOCES was the independent variable in the ANOVA. The results of this analysis are displayed in Table 31 and indicate a significant difference in responses between BOCES in terms of the overall rating of the Project materials.

Table 31

ANOVA Dependent Variable: Overall Reaction to Project 81 Materials

Independent Variable: BOCES

Source	df	S.S.	MS	F
Between (BOCES)	6	90.32	15.05	2.97*
Within	532	2695.33	5.07	
Total:	538	2785.65		

*p < .01

Post Hoc analysis of differences indicated that the overall reaction to the Project 81 materials was significantly higher in the Chautauqua BOCES than in the other BOCES centers. This difference could be attributed to a number of factors, including the fact that Chautauqua had been heavily involved in videocassette duplication and utilization. Because Chautauqua was the location for the video duplication of the Project 81 films, teachers in Chautauqua may have had greater exposure to and contact with the project materials. Since the overall reaction on the media evaluation sheets was a response to an individual videocassette program, the more favorable overall reaction on the media sheets may reflect a more critical initial selection of materials for use. Prior exposure to the materials because they were in their BOCES for duplication may have helped the Chautauqua teachers to make a better decision on those materials they wished to see and those they did not.

While the teacher media evaluation sheets provided continuous measurement data on materials used over the evaluation period, the teacher reactions measured on the post survey were obtained at the end of the evaluation period and are in a sense summative responses. The descriptive statistics for the teachers' post survey are outlined in Table 32.

Table 32

Descriptive Statistics on Occupation Teachers'
Use of Project 81 Materials
Post Survey
N = 159

	Frequency	Percent
Number who previewed Project 81 Videocassettes	Yes 82	53.6%
	No 71	46.4%
Number of Project 81 videocassettes previewed	$\bar{x}$ = 8.821	
	SD = 10.203	
Number who used Project 81 videocassettes for instruction	Yes 94	62.7%
	No 56	37.3%
Number of Project 81 videocassettes used for instruction	$\bar{x}$ = 8.505	
	SD = 10.295	

Reactions to Project 81 Materials
Scale of 0 to 10 with 0 = Lowest and 10 = Highest

How accessible would you rate the Project 81 materials from your occupational education center?	$\bar{x}$ = 7.40 SD = 2.101
How relevant are the Project 81 videocassette materials pertaining to your instructional area?	$\bar{x}$ = 7.481 SD = 2.336
How instructionally correct were the content and methods used in the Project 81 videocassette materials?	$\bar{x}$ = 7.903 SD = 1.654
How available for use is the Project 81 videocassette catalog?	$\bar{x}$ = 8.90 SD = 2.138
How effective were the Project 81 videocassette materials you have used in teaching your course objectives?	$\bar{x}$ = 7.50 SD = 2.004
What degree of difference do you feel the Project 81 videocassette materials will make in increasing learning opportunities for your students?	$\bar{x}$ = 6.961 SD = 2.334
How would you rate the Project 81 videocassette materials overall?	$\bar{x}$ = 7.913 SD = 2.049

(Continued)

Table 32 (Continued)

To what degree do you anticipate integrating the Project 81 videocassette materials into your instructional program next school year?	$\bar{x}$ = 4.97 SD = 2.623
What percentage of your instructional goals do you feel the Project 81 videocassette materials will help you meet?	$\bar{x}$ = 26.16% SD = 26.36
Since Project 81 how many different videocassette titles in your BOCES catalog now pertain to your instructional content area?	$\bar{x}$ = 22.81 Titles SD = 21.158
Approximately how many Project 81 videocassettes would you anticipate using throughout the upcoming school year?	$\bar{x}$ = 20.443 SD = 21.223
For what percentage of the upcoming school year do you plan to utilize videocassette materials in your instructional program?	$\bar{x}$ = 24.786 SD = 31.852

The results of the teacher post survey substantiate the reactions obtained during the course of materials utilization. In general teachers appear to feel that the materials were highly accessible, instructionally effective and relevant to their instructional areas. Their overall rating of the materials was high.

An ANOVA performed on the overall reaction to materials in order to determine whether there were any statistically significant differences in teachers overall reactions between BOCES indicated no statistical difference (F .66, NS). The conclusion can be drawn, therefore, that teacher overall reactions across BOCES were uniformly positive. Teachers were positive, but less so on the degree of difference the project materials would make in increasing learning opportunities for their students. The lowest reaction score was to the item investigating the degree that teachers anticipate integrating the project materials into their instructional program. The response for this item was midway between high and low ($\bar{x}$ = 4.97). It is interesting to note that teachers felt that the Project 81 materials would help them meet 26% of their instructional goals, and that they planned to use media for nearly 25% of the upcoming year. If this utilization does take place, it will be an increase of over 50% over the present (1975) school year. These figures correlate with the average number of Project 81 videocassette that teachers stated they would use in the upcoming year ($\bar{x}$ = 20.443) since the average utilization in 1975 as noted earlier was 10.033.

2. Occupational Education Directors and Educational Communications Directors Reactions to 81

Table 33 gives the reactions of Occupational Education and the Educational Communications Directors to Project 81. The table makes obvious the favorability which the project was met by both occupational education and educational communication directors. There are a number of discrepancies between the two groups, however. The educational communications directors generally rated the project materials more favorably than did the occupational education directors in terms of relevance, effectiveness, and the difference the materials would make in student learning. The educational communications directors also felt that the materials would meet a higher percentage of occupational teaching goals than did the occupational directors. On the other hand, occupational education directors felt that a higher percentage of teachers used media after Project 81 than did the educational communications directors. Both groups of directors did see over a 100% increase in the number of teachers that used (from pre to posttest) and both projected an increase in the future use of media. The differences in perceptions are undoubtedly due in large measure to the particular roles and interests of the two groups of directors. Despite these differences the consensus of both groups toward the Project 81 materials was favorable.

Table 33

Occupational Education and Educational Communication Directors' Reactions to Project 81

Scale from 0 to 10 with 0 = Lowest
10 = Highest

Questionnaire Item	Mean Response: Occupational Education Director X	Mean Response: Education Communications Director X
Rate teachers' attitudes toward media prior to Project 81.	5.94	4.22
Rate teachers' attitudes to media after Project 81.	7.83	6.94
Media equipment availability before Project 81.	5.25	6.39
Media equipment availability after Project 81.	8.20	8.39
How extensively have teachers used Project 81 equipment.	7.35	7.9
How extensively have teachers used Project 81 videocassettes.	7.20	6.778
How relevant to occupational education programs is the content of Project 81 materials.	7.03	8.78
How effective are video materials for course objectives.	7.01	7.55

(Continued)

Table 33 (Continued)

How large a difference do materials make in student learning.	7.13	8.22
How large a difference will materials make in future learning.	7.76	8.22
To what degree will teachers adapt to integrate video next year.	7.10	7.17
How favorable has the reaction of students been.	7.29	7.35
How much will teacher utilization increase next year.	6.79	7.78
What percentage of teacher occupational education goals will Project 81 materials meet.	45.4%	59.4%
How many teachers used film and video before Project 81.	39.8%	19.6%
How many teachers used film and video after Project 81.	75.4%	47.4%
How many BOCES films were applicable before Project 81.	65.4 films	57.33 films
How many BOCES videocassettes were applicable before Project 81.	95.6 cassettes	31.1 cassettes

3. Student Reaction.

In order to gain some insight into the long range impact of the Project 81 materials on the intended target, students, a sample of students was administered a short questionnaire. Students were asked questions about their teachers' utilization of media as well as their own attitudes toward media. While the total survey with full descriptive statistics is provided in Appendix B, the more pertinent items are summarized in Table 34.

As Table 34 indicates, student perception of teacher utilization coincides fairly well with that of teachers. One inconsistency was the high mean score for hours of live television used by teachers. This score may have resulted from student confusion of the terms live television and videotapes. It is quite possible that a large portion of the live television broadcast utilization listed by students was really videotape use. Students also perceived an increase in both film and videotape during the Project 81 implementation phase which is inconsistent with teacher results. As has been shown video utilization increased, but film utilization did not. Since the Project 81 materials were originally films, there may also have been some

Table 34

Student Reactions to Project 81
Post Survey
N = 254

Percent of classes this school year that teachers used film.

$\bar{x}$ = 11.907%
SD = 11.325

Percent of classes this school year that teachers used videotape programs.

$\bar{x}$ = 9.139%
SD = 12.094

Percent of classes this school year that teachers used live television programs.

$\bar{x}$ = 15.5 %
SD = 13.122

Have your teachers in BOCES used more or less film in the time since Christmas (January 1 until the end of school) in comparison with the time before Christmas (September 1975 to Christmas)?

$\bar{x}$ = 2.908
SD = 1.104

A great deal more	(5)	Percent of Students Responding	7.6%
A little more	(4)		21.1%
About the same	(3)		38.6%
A little less	(2)		19.9%
A great deal less	(1)		12.7%

Have your teachers in BOCES used more or less videotaped materials in the time since Christmas (January 1 till the end of school) in comparison with the time before Christmas?

$\bar{x}$ = 2.879
SD = 1.121

A great deal more	(5)	Percent of Students Responding	6 %
A little more	(4)		24.2%
About the same	(3)		36.3%
A little less	(2)		18.5%
A great deal less	(1)		14.9%

How would you rate the quality of the videotape materials that were used in your BOCES courses this year?

$\bar{x}$ = 2.697
SD = 1.055

Excellent	(5)	Percent of Students Responding	4.5%
Good	(4)		20.3%
Adequate	(3)		25.6%
Barely Adequate	(2)		38.6%
Very Poor	(1)		11.0%

Additional Dimensions (note only those items which indicated a mean substantially different from 3 (uncertain) are included here. All items are listed in Appendix B) 1 = Strongly Agree, 2 = Moderately Agree, 3 = Uncertain, 4 = Moderately Disagree, 5 = Strongly Disagree.

(Continued)

Table 34 (Continued)

Do film and television (as used in your classes).....

Make it easier to understand how to perform skills being taught.	$\bar{x}$ = 1.783 SD = .804
Make it easier to remember things being taught in class.	$\bar{x}$ = 2.072 SD = .905
Are entertaining but don't teach you anything.	$\bar{x}$ = 4.008 SD = .976
Would be sufficient to teach you the course material without additional help from the teacher.	$\bar{x}$ = 3.732 SD = 1.157
Are a waste of time.	$\bar{x}$ = 4.008 SD = 1.049
Increase your participation and involvement.	$\bar{x}$ = 2.333 SD = .932
Helps you with improving your reading skills.	$\bar{x}$ = 3.60 SD = 1.026

conceptual confusion on the part of students which accounted for this discrepancy. The large number of mean responses near the uncertain category on the attitudes may indicate that much of the survey was too difficult for students. Possibly the survey presented concepts they hadn't thought about before or asked students to make attitudinal distinctions that they didn't have a great deal of experience and sophistication in doing. Despite these problems, the items which vary little from uncertain do indicate an almost uniformly positive view of media. Students do strongly agree about the ability of media to show them how to perform skills, to help them remember things being taught, and to increase their participation. Students disagree with the idea that television and film are only entertainment and do not teach. They disagree as well with the idea that media are a waste of time. Student disagreement with the capabilities of media to instruct without a live teacher being involved parallels their teacher's reactions. Students also concur with their teachers' observations that media do not help improve reading skills.

4. Instructional Effects

Except for the expressed teacher, administrator, and student satisfaction toward the Project 81 materials in terms of their effectiveness and anticipated efforts, there are little other data supporting the materials impact. In addition to increased media utilization and the impact teachers feel this utilization is having, it should be noted that teachers have become more involved in the total process of using media for instruction. Teachers

in some BOCES have begun to design supplemental materials to go with the videocassettes and some teachers have also begun to involve themselves in the production of additional video programs to go along with the project materials. This type of instructional development and media production is certainly an indication of a positive impact since it indicates teachers are more involved in the design and presentation of instruction. The long range impact of the project materials as well as teacher involvement cannot be accurately assessed in the short period of time that Project 81 materials have been available for use. It can be stated with clarity that teachers and students feel that the use of media does have an instructional benefit. Since perceptions are important precursors to results it is possible that the more positive outlook on media as well as their increased utilization will produce the positive outcomes that teachers and students expect of them. There can be little argument with the fact that the video equipment and materials provided through Project 81 have significantly increased the quantity and quality of instructional resources in New York Appalachia. It is anticipated that these new resources will affect the educational opportunities for students in the future by their greater availability.

5. Economic Benefits.

While evaluations of educationally innovations generally deal almost exclusively with the innovations' instructional dimension, the novelty of Project 81 seems to argue for some comments on its economic benefits. The cost of an innovation is an essential determination of its value.

Analysis indicate that the effects of cooperative purchasing of video equipment and the negotiation of duplication rights are the two economic aspects of the project which are not only novel, but also cost-effective. By pooling purchasing needs and resources, the Appalachian BOCES Consortium was able to obtain equipment and video tape stock at substantially reduced prices, thereby allowing substantially more to be purchased with the same amount. Obtaining duplication rights and then creating videocassettes in sufficient quantities to supply BOCES centers with a master copy increased purchasing power many-fold. Coupled with this first multiplication of copies was the provision to make additional copies upon demand. If a similar project were implemented without the regional dimension and if each of the 11 centers had purchased copies of the 450 commercial films for their own use, without any duplication rights, the total cost for all eleven projects to obtain 11

copies of 450 films would have been $990,000. The entire project budget for Project 81, including equipment, personnel, tape stock, and rights to make additional duplicates within each of the centers was only one half of that $990,000 figure. It would seem well worthwhile, therefore, to consider this model of cooperative purchasing and video rights negotiations for future projects in which the media materials are a component.

SUMMARY OF CONCLUSIONS

Based on the evaluation data gathered from various sources prior to, during, and after Project 81, as well as analyses performed on the data, the following conclusions were drawn in this report:

1. Substantial quantities of videocassette equipment and programs were made available to the occupational education programs in New York Appalachia through the regional materials acquisition procedure used in Project 81.

2. The implementation and procedures of regional materials acquisition appeared to have taken considerably longer for the programming to become available than was originally planned.

3. The rapid diffusion and increased availability of videocassette equipment and occupational education programs on videocassette produced a statistically significant increase in utilization of the materials by occupational teachers.

4. The diffusion and increased availability of videocassette media resources produced new instructional patterns relying more on media. Changes in instructional means based on different class size divisions and arrangement indicated new trends.

5. The diffusion and increased availability of videocassette media resources produced a trend toward new groups of media users who were not users prior to Project 81.

6. The diffusion and increased availability of videocassette media resources produced no significant decrease in the utilization of film.

7. The diffusion and increased availability of videocassette media resources have increased video utilization to a point where it has surpassed film utilization (at a statistically significant level). Prior to Project 81 film utilization was significantly greater than video utilization.

8. The reasons for media utilization expressed by teachers (target consumers) did not change over the course of the project except in terms of the problems they felt with program quality and relevance presented in their media use.

9. Teacher (target audiences) attitudes toward instructional media (the innovation diffused) did not change significantly over the course of the evaluation. A slight negative trend was noticed, however, in teacher attitude.

10. Teacher reactions to the videocassette media resources were uniformly positive in terms of the materials' relevance, effectiveness, and overall value for instruction.

11. The reactions of those administering the social structure in which the occupational education teachers worked (occupational directors and educational communications directors) were uniformly positive in terms of the project media materials. Both groups of administrators were favorable toward the materials' quality, effective, and overall future value.

12. Both the occupational education directors and the educational communications directors observed a marked change in teacher utilization of media during the project period.

13. Occupational education students also perceived an increase in their teachers' use of media for instruction.

14. The project model and implementation process appears to have been a cost-effective means to increase instructional resources (both equipment and programs).

15. The process of rights negotiations and video duplication was an effective means to increase instructional media materials.

RECOMMENDATIONS

1. A longitudinal follow-up study should be made of the long-term adoption and institutionalization of the innovation by the target consumers as well as changes in their attitudes toward the innovation.

2. A longitudinal follow-up study should be made of the the long-range effects of the diffusion on student learning and advancement.

3. A longitudinal follow-up study should be made of the diffusion of the project materials as it affects instructional patterns, and the relationship that newly evolving instructional patterns have with student learning, teacher satisfaction, and cost-benefits.

4. Future projects should examine variables related to the organizational and social structures of the target consumers.

5. Future projects should examine and manipulate diffusion strategies to better determine those which produce the greatest adoption and utilization of innovation.

6. Further examination should be given to the economic aspects of the project in terms of cost-benefits and cost efficiency.

7. Future projects should seriously consider the potential advantages of large scale negotiations and purchases of instructional resources to use via videocassette technology.

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APPENDIX A

Background and Rationale of the Project

Information Provided by the Bureau of Educational Communications, New York State Education Department.

APPENDIX A

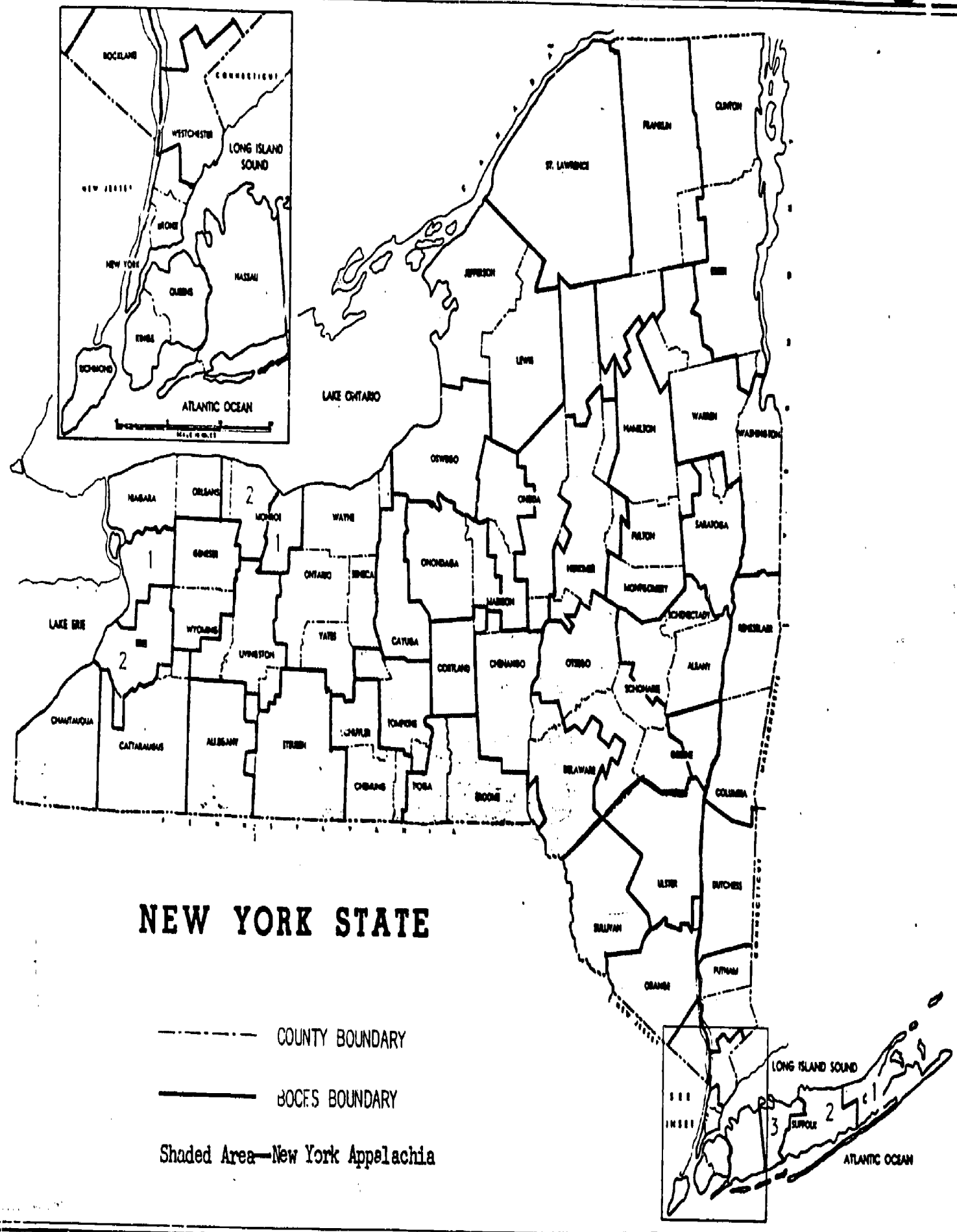
BACKGROUND AND RATIONALE OF THE PROJECT
PROJECT 81

Introduction to the Problem - Appalachia

The thirteen state area which has been Federally designated as Appalachia extends into approximately one-fifth of the total area of the State of New York. (See Map A) Despite the considerable proportion of the State which Appalachia covers, the population of New York Appalachia, which is slightly over one million, is only a small percentage of the total State population. A primary reason for the depressed population in the New York Appalachia region, as well as in the 12 other Appalachian states is the rugged geographical terrain created by the eastern Appalachian mountain chain. The Appalachian mountains have divided the area, creating unique social and economic problems for the entire region.

The geographical features of the Appalachian region have retarded economic and population growth for decades. For example, the physical geography of Appalachia has imposed severe restrictions on population concentration and movement, and thereby produced inadequate funding availability in most communities. The lack of centralized communities and appropriate funds have unquestionably made it difficult to maximize opportunities for learning and student advancement. Dispersed populations and the emmigration of younger individuals are facts of Appalachia that are further compounded by the shortage of skilled labor and the decline of rural industries requiring unskilled labor.

The educational institutions of New York Appalachia have seen problems of their communities shifted into their sphere of responsibility. Unfortunately the educational resources available in the Appalachian region have been considerably less than those available in other parts of the State. When contrasted with the rest of the State the Appalachian region, or Southern Tier as it is called has also displayed lower educational levels and achievement. Unquestionably the rural characteristics as well as the attendant industries and economy of the region have produced educational systems that have been incapable of meeting the evolving needs of Appalachian communities or individuals.



NEW YORK STATE

COUNTY BOUNDARY

BOCES BOUNDARY

Shaded Area—New York Appalachia

The limited economics and relatively inactive growth patterns affected the number of specialized programs and curricular innovations of the region. The areas of career education and occupational education while long felt to be providing crucial programs for students faced with changing social and economic demands were not particularly emphasized in Appalachian educational curriculum. This was due to the shortage of resources (both financial and educational).

Intuitive educational approaches have frequently operated on the assumption that the quantity of educational resources (input) is closely related to the quantity and quality of educational achievement (output). Recent research by Kiesling (1975) and Summers and Wolfe (1975) among others have substantiated this intuitive belief. It would appear, therefore, that the parameters of economic, social, and personal growth are curtailed or expanded depending on the amount of instructional resources that are available or can be brought to bear in the process of education. This premise served as the basis for the development of Appalachia resources.

New York State Appalachian Development

The New York State Office of Planning Services proposed numerous recommended solutions to the problems of New York Appalachia in its New York State Appalachian Development Plan of 1971. The recommendations of the report dealt with the development of both physical and human resources for the area.

Among the objectives that the report stated should be dealt with in the Appalachian Region were: "Assure high quality relevant education for everyone. Attain full education opportunities for every citizen!" The report reaffirms that:

> Education must be a vital part of any effort to raise the quality of life in the Appalachian area of New York.
>
> The educational system of New York State not only has the responsibility of providing each individual with the opportunity for scholastic achievement and occupational advancement, but also the responsibility of preparing each individual for full citizenship and all of the responsibilities that this implies.
>
> Cooperation among school districts will help to foster greater exploration of innovative ideas and increased utilization of new materials. The maximum use of resources will help implement the prime focus of education—attending to the varied developmental needs of the individual pupil. (p. 55)

Among the other recommendations made by the Office of Planning Service were: the encouragement of consolidation of small school districts, the encouragement of regional efforts to improve academic and vocational educational programs, the extension of educational television and the initiation and support of Boards of Cooperative Educational Services (BOCES) where they did not exist already.

The 10 BOCES in the Appalachian region* of New York as well as the other 32 BOCES throughout the State were created primarily to deal with these problems created by dispersed populations and limited funds. The sharing of specialist classes and services, particularly those for emotionally and physically handicapped as well as those for vocational and occupational education, provide significant resources for the programs throughout the State.

The BOCES in the State have always been particularly involved in and acknowledge the contribution of audiovisual resources to instructional programs. Through their concern and interest, educational communications centers have been established throughout the State Communications Centers. BOCES have demonstrated through a variety of programs that technology and non-print media offered an excellent chance for increasing learning opportunities due to media's capability to extend local teaching resources in schools too far from specialized instruction or too deficient in terms of community resources to maintain an adequate instructional program. Media resources can offer the most current curricular ideas and concepts, the most effective teachers or specialists, as well as multi-sensory learning experiences. Through media resources the individual knowledge and effectiveness of teachers can be expanded enormously. Over the past few years through State and Federal assistance, the fundamental promise of educational communications services has been realized in the Southern tier. Substantial regional film libraries, videotape libraries, duplication centers, equipment repair services, graphics services, and a host of other educational communications services have been developed and are now serving students and teachers. The inefficiencies of isolated school district instructional materials programs have been largely replaced by the shared service concept of BOCES. There is no doubt that the BOCES Educational

*The ten Appalachian BOCES are Allegany, Broome, Cattaraugus, Chautauqua, Cortland, Delaware, Greene, Schuyler, Steuben and Tompkins BOCES. Part of the Albany, Schoharie, Schenectady (Schoharie Center) BOCES was included in programs at a later date when its eligibility as part of Appalachia was determined.

Communications Center have made available for the schools they serve a magnitude of materials that could never have been available through individual community efforts.

However, despite the advances in individual BOCES efforts to assemble collections of materials, equipment, and services to support school instructional programs, the cost of materials and equipment, particularly in the more sophisticated technologies has made it impossible to provide a truly quality program for all curriculum areas for which service is necessary and applicable even when undertaken at the BOCES level. Experience has shown that a totally shared basis with all component districts contributing funding is frequently insufficient to do all that is necessary and educationally advantageous in providing instructional support through media and technology. For this reason, the Education Department has taken the position that the base of purchase and service for communications and instructional resources must be broadened beyond the BOCES district boundaries and must, in fact, incorporate the needs and purposes of several BOCES so that sufficient funding can be accumulated to provide the breadth of materials necessary for a significant impact on instructional programs.

Appalachian Communications Extension Program—The Foundation of BOCES Consortium

Until recently, the perception of inter-BOCES cooperation on instructional resource development was a concept worthy of pursuit, but whose development scheme was elusive. Although suggestions of regional cooperation among BOCES for communications development purposes made sense to local leadership, the spark required for initiation of action was missing. That spark was provided more than five years ago through a program approved and supported by the Appalachian Regional Commission. Briefly, most of the 14 counties in New York State which are covered under federal law by the legal designation "Appalachia" were far beyond the range of the State's public television network. Although good and substantial programs such as those provided by the Childrens Television Workshop were freely available to urban and suburban schools, rural schools were often at a disadvantage in attempting to use these resources. Urban-based public television stations simply did not reach far enough to be of practical use, and cable television was impractical because of the lack of population density and the severe terrain of the region. As a solution to this problem, a program was developed to establish television retransmission systems (translators) which would extend the television signal of public television stations from the major cities of the State beyond their original broadcasting range and into the hills and

valleys of the rural areas. As an adjunct to the translator program, matching funds were provided by federal and state appropriations to assist the rural schools in equipping buildings and classrooms to receive and use the newly available public television services.

Through these initial program efforts the attitudes of the educational community of the Appalachian counties has grown increasingly more positive with respect to the extension of the public television signal into their schools and homes because it provided a practical means to overcome the geographic and transportation problems prohibiting accessability to educational resources. The translator program is now in its sixth year and is moving rapidly toward completion which will see more than 90% of all communities and schools in the fourteen county area of Appalachia covered by television transmission of excellent quality from the State's public television network. In addition classrooms throughout the region will be fully equipped for use of the instructional broadcast service as well as other forms of instructional technology and materials use. Besides the capability for retransmission of educational broadcasting from the urban centers, each of the nine sub-regional retransmission networks that have been constructed or are now under construction have the capacity and license from the Federal Communications Commission to inject locally originated programming. This capacity allows for informational and educational programs of particular interest to one region to be broadcast from the central transmission point (BOCES), and be received by a vast majority of schools and homes in that political subdivision. Such local injection can be on video tape or on film acquired from outside sources or it may be locally produced.

Appalachian BOCES Consortium

Although the addition of the instructional resources of public television is proving to be a great advantage to the Appalachian region and, in fact, may be more appreciated in these rural areas of the State than they are in the urban and suburban areas, the instructional materials transmitted are but a fraction of the total potential available. Tens of thousands of excellent instructional media materials exist and would be a decided instructional advantage to the instructional programs in Appalachia if they could be made available in more adequate supplies and variety.

Using the Appalachian Cooperative Extension program as the vehicle, the Education Department encouraged the ten BOCES who were each individually involved in regional development as part of this program, to look beyond their own purview and to investigate the possibility of achieveing some mutual objectives through cooperative effort. Since all participating BOCES in the 14 counties had or were scheduled to acquire the retransmission networks previously described, and since all or most of their component districts would receive funding for equipping themselves for reception and display equipment such as television receivers and videocassette machines, a substantial common base existed or would exist in the entire 14 county area to develop an instruction resource program beyond the retransmission of public television service. In 1973, the New York State Education Department held a series of meetings with the ten district superintendents and educational communicational personnel involved in each of the BOCES in Appalachia. It was suggested to all participants that conditions conducive to a creation of a model for regional instructional materials purchase and sharing existed. The objectives of the proposed regional materials purchase and sharing combine were these:

1. To establish common needs and requirements for communications materials and equipment in order to improve the negotiation power for better equipment and media materials. United purchasing blocks seemed to offer the capability to exert greater purchasing leverage.
2. To create a regional network for sharing materials commonly purchased through the videocassette format.
3. To share the ability and efforts of communications personnel and facilities residing in each of the ten participating BOCES so that individual operations could be more cost effective.

As a result of the meetings, it was decided that an initial effort in cooperative purchase and resource sharing should focus on one of the weakest aspects of each of the participating BOCES of the region--specifically film libraries and film distribution. As the plan was developed, it focused on the potential offered by the existence of large numbers of videocassette players and television receivers that has been purchased in each of the BOCES component districts as a result of the Appalachian Communications Extension project. This equipment was capable of serving purposes in addition to that of enabling the reception and use of public television broadcasts. Considerable experimentation in the transfer of 16mm film to video-cassette had already preceded this project and was determined to be feasible and desirable from the standpoint of improved ease of operation by the teacher. Even more

importantly the capacity of tape to be duplicated as well as reused provided a means of overcoming the traditional limitation of 16mm prints. The following determinations were agreed on by all ten participating BOCES:

1. The ten BOCES would be organized into a single purchasing unit.
2. Decisions on film purchase would be thereafter accomplished through total needs assessment, rather than on an individual basis.
3. All films purchased would be purchased only if rights to transfer to tape could be attained so that each of the ten duplicate prints of every film purchased could be disseminated to the communications centers thereby preserving local and immediate access to all materials purchased.
4. Each film so purchased by the inter-BOCES agency would be purchased with rights to transmit via the regional television systems thus enabling the BOCES to distribute the materials directly to the schools as well as by videotape.

Project 80

It was at this point in time that the Appalachia BOCES Consortium was established for purposes of general improvement of educational communications and specifically to create a model of materials purchasing and sharing which has come to be known as Project 80. The Appalachian BOCES Consortium (ABC) was composed of the ten BOCES in Appalachia.

The title, Project 80, was established to identify the length of the contractual agreements negotiated with film producers for use of their materials. That is, materials and rights to transfer and duplicate into videocassette format in 1975 would have a period of five years of use terminating in 1980. Thereafter, the materials would be examined for their continuing usefulness and either erased or continued use renegotiated. The pattern of a typical film library acquisition schedule wherein each area of instructional program receives some attention with respect to the content of materials purchased was adopted. In short, an attempt was made to increase titles in practically every major area of the academic spectrum.

Project 80 Outcomes

The outcomes of Project 80 included:

1. A demonstration of the feasibility and cost effectiveness of large scale cooperative equipment and media materials purchasing.
2. A demonstration of the feasibility and negotiating leverage of obtaining video duplication and broadcast rights through a cooperative effort.

3. A demonstration of the feasibility and practicality of large scale duplication of films into videocassette format.

4. A demonstration of the flexibility, ease of operation, and increased assessibility to instructional media provided by the videocassette format when contrasted with film.

5. A demonstration of the feasibility and efficiency of consolidated media needs assessment, media previewing, and media ordering procedures.

6. The development and refinement of an overall model of media search, preview, rights negotiations, acquisition, video duplication, cataloging, and distribution of a large quantity of film materials over a large geographical and instructional area.

The specific tangible output of Project 80 included:

1. Ten videocassette masters of each of the 1000 film titles acquired.

2. Authorization from producing companies to make an unlimited number of videocassette duplicates of each program, as long as they were used within the confines of an Appalachian BOCES educational center or one of its districts.

3. Sufficient videocassette equipment (players and recorders) and television receivers to supply each participating BOCES so as to meet their increased instructional demand.

Project 81--Rationale and Objectives

Following the successful establishment of the Project 80 film purchasing and videoduplication model, the New York State Education Department began to investigate other areas where a similar model could be applied or extended. Upon examination it became apparent that the success of Project 80 in supplying substantial amounts of general purpose education films to teachers in the schools had only highlighted the wholely inadequate quantity of instructional resources for more specialized areas of the curriculum including occupational education programs. Since the usual pattern of most instructional materials acquisition program--purchasing materials that will have the widest possible use in the school--was followed in Project 80, all the subdivisions of occupational education were short changed because of their greater specialization and lower proportion of enrollments.

The State Education Department proposed, therefore, to the Appalachian Regional Commission in September 1974, that the model and processes of cooperative purchasing and media materials sharing used in Project 80 be applied to correct this deficiency of occupational and career education media resources.

The specific objectives listed in the proposal were:

I. Long Range Program Objectives

A. To increase the educational opportunities for the residents of the New York Appalachian region through the use of communications technology to expand or enhance curriculum offerings of the schools and the Boards of Cooperative Educational Services.

B. To develop and expand the availability of software suitable for various communications systems.

Assumptions

The proposal was based on the following theoretical assumptions concerning the nature and capabilities of technology and audiovisual media:

1. Communications technology is a significant instructional resource that should be available to all teachers as an integral part of their programs.

   a. Technology provides additional opportunities for learning.

   b. Technology provides the opportunity for greater individualization of instruction.

   c. Technology allows for better utilization of instructional time and resources.

   d. Technology provides for greater standardization of instruction as well as the use of more current and up to date approaches and content.

   e. Technology allows for increased specialization and diversity of instruction bringing particular exemplary teachers and materials to the classroom via electronics rather than in person.

   f. Technology provides for mass availability of instruction conveniently and economically through efficient distribution systems.

   g. Technological systems are most efficient and cost effective when implemented on a large scale.

2. Audiovisual media (particularly film and television) should play an important part in the learning process.

   a. Film and television are accepted media that students are at ease learning from. Television and film are relevant to their experience.

   b. Film and television can provide a great deal of information both visual and auditory without depending on the written and spoken word. They are multi-sensory.

   c. Film and television are high motivators and involvers particularly for slower students who are less oriented to traditional instruction. Occupational students in particular are frequently less disposed to traditional instruction and could profit a great deal from visually mediated instruction.

d. Films and television can facilitate learning of processes, skills, and procedures in a more effective and efficient manner than through other means. They use techniques of presentation that are not generally available in order to present perspectives and relationships that could not be shown otherwise, or shown only at great cost or danger to students.

e. The adoption and utilization of mediated instruction depends on the availability and accessibility of media resources.

All of these points, but most particularly the ability of television and film to facilitate learning of processes skills and procedures, provided a viable rationale for attempting to obtain an adequate supply of media materials for the occupational education programs in the BOCES throughout New York Appalachia. The rationale of a project's attempt to increase the quantity and accessibility of occupational education media for the Appalachia region would require an understanding of the unique problems and needs of the area reflected in the background section of this report. Among these specific problems were:

1. Shortage of educational resources.
2. Increasing need for highly specialized training to adequately prepare students for the present and future job situation.
3. Such a minimal student enrollment in any one content specialty in any physical location to make justification of needed resource expenditures difficult.
4. Lack of a sufficient number of specialized teachers available in all geographic locations to offer a diversified curriculum.
5. Geographical problems related to community size and distances between communities limiting communication and transportation.

To deal with these problems the Appalachian Communications Extension ITV Materials Duplication Distribution: Occupational Education Project was proposed and funded. This project, known as Project 81, set out to assess the specific media needs of the Appalachia region of New York in terms of Occupational Education, to acquire appropriate film media and the video duplication rights for all film materials identified; and to duplicate and disseminate these materials to all participating Appalachian BOCES of New York via videocassette.

There were a number of reasons for the selection of videocassette dissemination of media materials:

1. Videocassette conversion provides the opportunity for making a large number of copies of the original film, at considerably less cost than purchasing individual film prints.
2. The capability for videocassette duplication existed in all the BOCES, and allowed for the creation of additional copies as instructional needs demand them. Videocassettes increase the opportunity for utilization because videocassette materials can always be made available through duplication.
3. Videocassette display equipment is easier to handle than film projection, equipment is more reliable, is more flexible in use (doesn't require a darkened room for example) and is the media format preferred by teachers.
4. Videocassettes, while cheaper in terms of per unit costs, also are more economical in use, requiring little maintenance when compared with film and last 10 to 20 minutes longer then film.
5. Videocassettes also provide the opportunity to erase and record material, thus permitting centers to keep masters of less frequently circulated materials making copies of these only when needed, and erasing the copies upon return. Videocassette tape stock can be used for circulating a wide variety of material, thus extending the nature of life of its content.
6. Videocassette displays can be used in a variety of on-site situations related to occupational education where the ambient light or instructor involvement precludes the use of film display.

Project Objectives

The specific objectives outlined in the original proposal a[illegible]ose outcomes to be achieved by the project were:

II. Objectives to be Achieved During Budget Period

- A. To acquire and duplicate on videocassettes 16mm motion pictures currently not available to occupational education programs in the Appalachian area.
- B. To provide each Appalachian BOCES appropriate television display equipment to utilize the materials which will be made available to them.
- C. To provide to each Appalachian BOCES a complete set of duplicated films on videocassette.
- D. To develop and implement in-service training programs in techniques of utilization of video materials for occupational education teachers and to support career education programs in each of the BOCES.

Implementation of Project 81

The implementation of the project objectives involved the following tasks:

1. Search, preview, and selection of materials.
2. Equipping the occupational educational centers with videocassette display hardware.
3. Negotiate for video duplication (and broadcast rights) for selected material.
4. Contract with and issue purchase orders.

   - Acquisition of films.
5. Video duplication of films and production of multiple videocassette copies.
6. Catalog and distribute videocassette.
7. Present in-service workshops on the operations of equipment and use of materials.
8. Project evaluation.

Functions

To accomplish these tasks, a number of functions were performed. These included:

I. Establishment of the Overall Project Organization and Responsibilities.

State Education Department Responsibilities. The State Education Department served as the LEA for the project, and was responsible for the coordination of all the Project activities. Those portions of the projects' enabling objectives which could be accomplished more efficiently or advantageously at a centralized level were retained as the responsibility of the State Education Department, while those which could be done more efficiently at the regional level were delegated to the Appalachian BOCES Consortium and its individual members. The responsibilities of the State Education Department undertaken in conjunction with the regional personnel were:

1. Overall project coordination and administration.
2. Planning, scheduling and establishment of all time tables.
3. Negotiate and contact with commercial and sponsored film producers to obtain video duplication and broadcast rights for all materials recommended.
4. Establish film previewing and selection procedures to assure the best quality materials with the least expenditures of time and energy.

5. Coordination of the equipment purchasing.

6. Coordination of the film rights and materials purchasing.

7. Coordination of the video duplication and distribution of materials.

8. Coordination of all cataloguing.

9. Establishment and coordination of inservice education (workshop) sessions for all occupational education teachers involved in the project.

10. Establishment, implementation and completion of a project evaluation.

BOCES Responsibilities. The responsibilities delegated to the specific BOCES members were:

1. Previewing, evaluation and selection of films. Each BOCES was assigned one of the major content areas in occupational education. The content areas and respective BOCES responsible for them are listed below:

Content Area	BOCES
Home Economics/Food Services	Allegany
Building Trades	Broome-Tioga
Career Education	Cattaraugus
Personal Services/Electronics	Chautauqua
Electricity/Drafting	Cortland
Agriculture/Conservation	Delaware-Chenango
Health	Greene
Metal Trades	Schuyler-Chemung
Distributive Education/Business	Steuben
Auto Mechanics	Tompkins-Seneca

2. Equipment Purchase—Broome Tioga BOCES (other BOCES initiating cross-contracts).

3. Film materials and video duplication rights purchase—Cattaraugus BOCES.

4. Film receiving, inspection, and sequencing—Cattaraugus BOCES.

5. Film to master tape transferring, duplication of videocassette masters—Chautauqua BOCES.

6. Catalog creation and printing—Delaware Chenango BOCES.

7. Implementation of inservice workshops for training occupational education teachers. (Each of the 10 BOCES was responsible for carrying out State Education guidelines for their own staffs.

8. Modification of materials into new instructional packages—Chautauqua, Delaware, Chenango and Broome BOCES'.

II. Selection and hiring of necessary personnel for previewing.

Media previewing and recommendation personnel were selected within each BOCES based on the following general criteria:

1. Professional certification.
2. Knowledge of occupational education.
3. Familiarity and experience with media, preview, and evaluation.

Because of the variation in BOCES operations, the lag in receipt of funding, and the shortage of qualified occupational educational specialists with media experience, some BOCES opted to use existing staff members to fulfill the previewing functions, and to pay for them out of their own budgets. This fact while far from ideal, did expedite the accomplishment of project objectives.

III. Establishment and implementation of previewing process and evaluation criteria.

The Occupational Education Research and Development Center at Cornell University in New York has been involved in the production of evaluative instruments relative to occupational educational materials and were contacted for information. The output from Cornell's program for developing occupational education materials evaluation procedures (based on the UCLA models developed under USOE grants) served as the basis for Project 81's media evaluation, as well as an initial organizational scheme for collecting, evaluating, and disseminating information in the occupational education area.

Workshops to clarify media evaluation criteria, procedures within each BOCES content area responsibility were organized for all the Project 81 previewers. They involved the following steps:

1. Assessment of teacher needs and desires within all content area in each BOCES.
2. Initial assessment of film sources and content derived from:
   a. NICEM Index to Vocational Education Media
   b. NICEM Index to 16mm Education Film
   c. Educator's Guide to Free Films
   d. Trade Magazine and Bulletins
   e. Other Film Catalogs and media sources
3. Sharing of information with the appropriate BOCES responsible for the particular content area.
4. Preliminary contact of and preview order established with companies having materials with some potential value for each respective content area.

5. Communications aides previewed each film in terms of the following criteria adopted from the Cornell Plan.

   - technical content
   - appropriateness for needs—content useful, versatile
   - appropriateness for grade level
   - level of readability/intellegibility of materials organization appropriate
   - accuracy of content
   - lack of biases or misconceptions.

   Previewing information was recorded on preview cards which included a synopsis of the material, an overall evaluation, and a recommendation or non-recommendation to purchase.

6. Previewing of films by one to three occupational teachers.

7. Previewing of films by various craft committees formed from area business people and trades people within each BOCES.

IV. Contact with all film companies whose materials were recommended for inclusion in the Project. The procedure followed was:

- First a letter was sent to the presidents of any film companies identified as a potential source. The letter explained the project, its rationale and objectives, stated the parameters of use of media within the project and the type of video rights sought. Along with the descriptive information was a request for a proposal from the company specifying their changes for the materials and rights requested for the project.
- Second, once the proposals were received, a telephone contact was made with the company presidents or representatives to negotiate the exact price for materials.
- In many instances, the proposal request stage was bypassed, and telephone contact was made directly.
- Once negotiations were completed, a final agreement document was submitted to the company for their approval. This document provided legal protection and assurances for both parties relative to the materials and rights involved. (Copy Enclosed)

As previewing and negotiations proceeded, the number of recommended materials for which the appropriate duplication and distribution rights could be obtained at a fair and reasonable price began to increase. Since materials were considered for inclusion in the project only if they were recommended as being worthwhile and if they could be obtained with duplication rights, some good materials for which rights could not be obtained had to be dropped from consideration. Fortunately, it seems that agreements could be negotiated for the

majority of materials sought. The negotiations for video duplication rights were based on a number of factors:

1. Purchases were to be for single prints of each film recommended for purchase.
2. An additional amount or overage was to be paid for duplication rights.
3. The parameters of use of materials included:
    a. use solely when the geopolitical confines of the fourteen county area of New York Appalachia.
    b. Authorization to make videocassette masters for each BOCES center plus additional short term copies when needed.

In addition, negotiations were also based on:

1. The existing share of market that a particular film company had in the Southern Tier.
2. The importance of a company's materials in terms of their application, pertinence to the curriculum, and uniqueness.
3. Total number of films involved.
4. The potential for additional sales to the producers due to an expected "endorsement effect" occurring after a company's materials were purchased and utilized in the project.

The novelty of the project's methodology (purchasing single copies and obtaining duplication rights) as well as the total lack of experience and understanding on the part of so many small film producers and distributors (in terms of video copyright procedures) created a very unique and at times difficult negotiation situation.

The success in negotiations appears to be due in large measure to the expertise of the State Education Department, resulting from its prior film negotiations as well as its prestigous position as an educational institution. The cooperative purchasing concept of media produced a great deal of questioning on the part of various film companies. It seems that while they were uncertain as to the overall effect on their markets, the companies felt that large scale purchases of film materials and rights would be worthwhile because they would only have to supply one film print rather than many. Furthermore, the previewing of films which is usually a very expensive process because many schools normally want to preview before buying, was done by one BOCES acting for all the others in Project 81. The cost advantages obtained through centralized previewing and single print purchasing were increased further because ordering, purchasing, and shipping was done through one BOCES, thus eliminating processing and paper work.

Equipment Purchase

In the spirit of cooperative action encouraged by the Office of Planning Service in their New York State Appalachian Development Plan, and with the successful experience of cooperative purchasing realized in the preceding project (Project 80), the Appalachian BOCES Consortium combined their negotiating and purchasing power to obtain the best equipment purchasing contracts available. Purchasing arrangements were made for color TV receivers, videocassette players, videocassette recorders, a few color video cameras, and portable video recording units as well as television stands.

The cost advantages of centralized cooperative purchase result from volume purchase, and its accompanying leverage lower manufacturer's distribution and delivery charges, reduced manufacturer's paper work and processing charges. Feedback from manufacturers and distributors indicate they prefer working with large orders for these reasons, and therefore provide cost benefits to their larger customers.

The equipment purchasing process involved the following steps:

- Assessment of equipment needs within each BOCES.
- Compilation of purchasing list.
- Purchasing list put out to bid.
- Bids opened selected and contracts initiated by Broome-Tioga BOCES.
- Equipment received, inspected and delivered by Broome-Tioga BOCES.

Acquisition and Duplication of Films

The process of film ordering and receiving was centralized in one BOCES, Cattaraugus. In addition to its responsibility for issuing purchase orders and receiving films, Cattaraugus was also responsible for inspecting, cleaning, and sequencing films. The sequencing process involved organizing the films of similar content and instructional intent together so that they could be duplicated onto the same hour cassette master. Since the average length of each film was about 18-20 minutes, each hour master contained an average of three films.

Duplication of films was done at Chautauqua BOCES, one of the few BOCES in the state with a color film chain for transferring film to videotape as well as large scale videocassette duplication capability. As was mentioned previously, films were sequenced together into hour units and then duplicated. One videocassette master was made for each of the 10 BOCES plus one for Schoharie Center. Spot checking and labelling of tapes was also completed at Chautauqua.

Cataloging

Catalog organization and printing was done at Delaware-Chenango BOCES. The cataloging process involved the following steps:

1. Collection of all annotations from film producers.
2. Collection of all previewers' notes on films.
3. Rewriting of annotations combining the previewers observations with the film company's description. The objective of the rewriting was to produce a short (5-6 sentences) clear, interest stimulating summary of the salient instructional features of the film. Descriptions included the length of the film in minutes.
4. Where existing information on the film from producers or previewers was unclear or insufficient, films were viewed again by the cataloger before the description was written.
5. A preliminary catalog was printed with the films listed in order by acquisition number with their descriptions. A content area breakdown including title and acquisition number provided the means to access materials.
6. A final catalog was printed which encompassed the preliminary catalog, continuing from the final film and acquisition number in the preliminary catalog. An entirely new content area breakdown was printed to replace the preliminary one. An alphabetical listing by title was also printed.
7. Some short flyers on particular content areas were also printed to familiarize teachers with particular materials. (See Appendix D for a copy of the catalog.

In-Service Education on Equipment and Materials Utilization

In addition to providing media materials and equipment for occupational education teachers, Project 81 proposal also included provisions for properly preparing teachers to utilize the new equipment and materials. Although a standardized in-service workshop given by State Education personnel in conjunction with BOCES personnel was originally envisioned, differences between BOCES in terms of media and equipment ordering and utilization, forced a more individualized approach. It was decided, therefore, that each BOCES would conduct its own workshops, adapting an outline of basic objectives from State Education to their particular needs and problems. Among the specific areas dealt with in all BOCES in-service workshops were:

1. Review of Project 81.
2. How to select materials for instructional objectives.
3. Review of the resources
   - how to use the catalog
   - how to order tapes.

4. How to use the equipment (videocassette player and TV monitor)
   - logistics of reserving equipment
   - classroom set-up
   - basic problems and troubleshooting.
5. Utilization of media materials
   - large group
   - small group
   - individualized.
6. Instructional Purposes
   - introduction
   - review
   - summary
   - remediation
   - direct instruction
   - follow-up activities.
7. Evaluation of materials
8. Creation of additional programming.

All BOCES conducted in-service workshops just prior to the introduction of the Project 81 materials. These workshops were either part of the regular on-going teacher training or a specialized session. Almost all BOCES conducted small workshops with teachers from each content area cluster. Actual Project materials and catalogs were also used to familiarize teachers with the material. The average length of workshops was 1½ to 2 hours. Since all BOCES do yearly in-service training, new teachers will be familiarized with the materials and procedures each year.

In addition an instructional television workshop was being developed as part of additional Appalachian Regional Commission funding. This workshop was designed in five segments, each on videocassette. Workshop materials and activities accompanying the tapes. This workshop will be available for use by the BOCES in Appalachia, as well as throughout the State beginning in September 1976. It is anticipated that educational communications directors will utilize the series a great deal to provide in-service training to all occupational education teachers as well as primary and secondary teaching staffs.

Document of Agreement on the Purchase
and Use of 16mm Film for Project 81

ckground

Project 81 is a cooperative film purchasing program combining the needs
i financial resources of ten Boards of Cooperative Educational Services
OCES) serving the schools of the 14 counties of New York State's Appalachian
gion. For purposes of developing a total program of cooperative efforts
r improving educational communications in this largely rural area, the
n districts have amalgamated under the title, Appalachia BOCES Consortium,
reafter referred to in this document as ABC.

jectives

The objective of the ABC Project 81 Film Purchasing Program is to increase
e total educational resources available in occupational education and career
ucation and to improve accessibility and ease of classroom display through
nversion of film to videocassette.

nancial Resources

Financial resources and authorization for expenditures referred to in
is agreement have been provided by the New York State Education Department,
reau of Educational Communications.

Agreement Terms

rchasing Responsibility

The Cattaraugus County Board of Cooperative Educational Services shall be
e authorized purchasing unit on behalf of ABC. The Cattaraugus County
ard of Cooperative Educational Services agrees to purchase the film titles
sted in this agreement with _____,
its successors, at the current catalog price plus an additional amount for
rtain rights of use as follows:

1. Rights to Duplicate All Film Materials Purchased by This Agreement.

It is agreed that the company named above, or its successors, has
e legal right to provide duplication rights for all titles desired and
rchased under this agreement. Duplication rights for the listed titles
all be limited by ABC to a total of ten permanent copies on videotape,
e of which shall be held in each of the ten ABC centers. In order to
sure ready access to all materials by teachers and students, ABC member
nters may also duplicate additional temporary copies of the materials
en the schedule of use requires. These temporary copies shall be erased
ter completion of use.

Agreement between _____ and ABC Consortium (cont'd)

Duplication rights are to be limited to the ABC member districts (BOCES) and videotaped materials are to be distributed only among the ten ABC members and their component schools, and within the educational, political, and geographical area they normally serve. ABC agrees to prohibit the use of any duplicated materials outside their educational, political or geographical boundaries. Duplicated materials shall be used only for educational purposes.

2. Limited Open-Air Dissemination Rights. It is agreed that rights are provided to ABC to disseminate film material via rural television systems owned and operated by ABC at times when the numbers and locations of schools requesting the materials makes duplication of materials too costly and/or time consuming. Such transmission systems are low power, UHF systems (translators) operated primarily to serve remote schools only within the geopolitical boundaries of each district. Transmission power limitations, topography, engineering design and the separation of population centers in the region assures virtual isolation of dissemination within ABC boundaries.

3. Closed-Circuit Dissemination. It is agreed that materials purchased under this agreement may be freely used on closed-circuit television systems within BOCES or their component districts in order to permit multiple classroom access where desirable and possible.

4. Delivery of Films. It is agreed that delivery of all films purchased under this agreement be guaranteed before _____. In the event of non-delivery, the supplier agrees to remit to ABC the normal daily rental cost for each film title not delivered for each day of delinquency.

5. Replacement of Defective Materials. It is agreed that all shipping and handling charges, in addition to replacement costs of defective film prints, shall be the responsibility of the supplier. The definition of "defective prints" shall be limited to obvious mechanical or technical flaws and shall not cover content or treatment.

6. Time Period of Agreement. The period of time covered by this agreement shall be five years of use, beginning 90 days after the receipt of the last film title (in order to allow for processing, duplication, and cataloguing). Duplication rights will, therefore, be held for five years from this date after which the ABC agrees to either erase all copies made, or re-negotiate additional duplication rights.

7. Additional Purchases Under Agreement. It is agreed that purchases of additional film titles to complement titles purchased in this agreement can be negotiated under the terms of this agreement within six months after the date appearing on this agreement.

8. Additional Rights. It is agreed that renegotiation of this contract for purposes of extending usage, geographic area, or time can be undertaken within the period of the twelfth and thirty-sixth months of the signed agreement.

9. Substitution of Materials. In light of the total volume of materials purchased, selection processes have been limited. Therefore, it is likely that certain titles may be found to be inappropriate to meet the specific needs of the teacher and students for whom they were selected. It is, therefore, agreed that up to 20% of the total number of titles purchased under this agreement may be returned for substitution at dollar for dollar value within nine school months after the beginning of period of use. In the event of such substitutions, ABC agrees to erase all master and duplicate copies of the material.

10. Minor Modifications of Materials. In the course of time and use, certain references or points of fact in the visual and aural content of materials supplied may require deletion or modification in the interests of maintaining the educational value and timeliness of the material. It is agreed, therefore, that ABC has the right to make any such deletions or minor modifications with a written notification and description to the supplier. ABC agrees to clearly identify any changes before and after the point by voice and/or visual insert.

Agreement between _____ and ABC Consortium (cont'd)

In acceptance of the terms of this agreement _____ agrees to supply the following titles:

_____

_____

_____

_____

_____

_____

The Cattaraugus County BOCES agrees to pay a total of _____ for delivery of the above listed film prints plus _____ for the provision of duplication and use rights for said materials.

Purchase Order # _____ accompanies this agreement. Signed copies of the agreement and the purchase order shall be returned to _____

_____.

Approval of the Agreement

_____ Title _____

For

_____

For Cattaraugus Board of Cooperative Educational Services and the Appalachia BOCES Consortium

Appendix B

Copies of all Instruments Used
in the Study

THE UNIVERSITY OF THE STATE OF NEW YORK
THE STATE EDUCATION DEPARTMENT
ALBANY, NEW YORK 12234

ASSISTANT COMMISSIONER
MENTARY, SECONDARY AND CONTINUING
EDUCATION PROGRAM PLANNING
AND COMMUNICATIONS
518: 474-2380

BUREAU OF
EDUCATIONAL COMMUNICATIONS
518: 474-5823
518: 474-5825

December 8, 1975

Dear Occupational Education Teacher:

Enclosed with this cover letter is a survey form requesting information about your use of instructional television and film. The survey is being used to collect preliminary data for the evaluation of the Appalachia BOCES Consortium and Project 81.

Since Project 81 is concerned with occupational education media, your feedback is an essential part of the Project's evaluation. Hopefully, the feedback from teachers such as yourself will provide the information necessary to access Project 81 as well as to modify future program development.

I realize how busy your day is, and I appreciate your time and effort in completing this survey. Your responses are essential to the complete evaluation, so please provide your cooperation.

In order to assure uniformity of results, fill the survey out and mail it in within the next week. All the questions are short, and require nothing more than a check next to the answers you select so the entire survey can be completed very quickly. Please try to be as precise and candid as possible. Your individual responses will not be identified, and all evaluation reports will keep the information you provided anonymous.

To return the questionnaire, once it is completed, use the enclosed self-addressed envelope.

Thank you again for taking time out of your hectic schedule to provide the information requested. I hope that Project 81 will provide significant benefits both to you and your students.

Sincerely,

Michael S. Radlick

Michael S. Radlick
Evaluation Coordinator

MSR:jar
Enclosure

THE UNIVERSITY OF THE STATE OF NEW YORK
THE STATE EDUCATION DEPARTMENT
ALBANY, NEW YORK 12234

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Sincerely,

Michael S. Radlick

Michael S. Radlick
Evaluation Coordinator

MSR:jar
Enclosure

TOTALS N = 279

The University of the State of New York
THE STATE EDUCATION DEPARTMENT
Bureau of Educational Communications
Albany, New York 12234

SURVEY OF UTILIZATION OF MEDIA TECHNOLOGY BY OCCUPATIONAL EDUCATION TEACHERS FALL 1975

BOCES CODE

1. Name of BOCES _____ | | | | | | |

2. Place of Birth: _____ City _____ State

3. Educational Background Information

Figures in Percentage (%)

a. Your highest level of academic training is: (check one)

Less than a high school diploma	1	(1)
High school diploma or equivalent	3	(2)
Some college but no earned degree	27	(3)
Two-year associate degree	11	(4)
Bachelor's degree	35	(5)
Master's degree	23	(6)
Doctorate	1	(7)

4.47

b. If you have had any post-secondary education, were you enrolled for any major part of it in New York State? Yes 87 (1) No 13 (2)

If yes, were you enrolled for any part of this post-secondary education in one or more of the counties listed below. (Check all that apply)

Figures in Percentage (%)

Allegany	9	Delaware	3
Broome	12	Otsego	10
Cattaraugus	21	Schoharie	3
Chautauqua	16	Schuyler	1
Chemung	16	Seneca	0
Chenango	0	Steuben	15
Cortland	3	Tompkins	15

None of these counties . . 30

4. If you were enrolled in a post-secondary program, was either your major or minor area of college study related to communications or communications technology . . . . . | Yes 20% (1) | No 80 (2)

5. Have you had in-service training related to the production of instructional media and technology? . . . . . | Yes 58% (1) | No 42 (2)

   If yes, how many hours of training. . . . $\bar{x}$ = | 5.98 | 50 | 11.44

6. Have you had in-service training related to the utilization of instructional media and technology? . . . . . | Yes 67 (1) | No 33 (2)

   If yes, how many hours of training. . . . $\bar{x}$ = | 5.48 | 50 | 10.38

7. Teaching Experience

   a. Total number of years teaching . . . . . $\bar{x}$ = | 7.99 | SD = 5

   b. Number of years teaching in this BOCES . . . . . $\bar{x}$ = | 5.93 | SD = 3

   c. Did you teach in this BOCES last year. . . . . | Yes 90% (1) | No 10% (2)

8. Indicate the content area(s) in which you presently teach: (Check all that apply). Indicate the total in each of your classes for each content area.

		Classes	Average Enrollment in Your Classes $\bar{x}$
Agriculture		31	30.87
Auto Trades		37	35.27
Building Trades		36	32.47
Business Education		28	28.82
Distributive Education		9	19.34
Drafting		15	24.12
Electricity		17	23.88
Electronics		12	19.83
Food Services		16	27.88
Health Services		24	25.20
Personal Services (Cosmetology)		20	27.45
Trade/Industrial		33	30.36
Other (specify) _____		63	29.81

$\bar{x}$

9. Estimate how many hours of 16 mm films you used in your instruction last school year (Sept. 1974 - June 1975) . . . . . Hours | 9.68 |

10. Estimate how many hours of videocassettes and videotapes you used in your instruction last school year (Sept. 1974 - June 1975) . . . Hours | 4.24 |

11. Estimate how many hours of live television broadcasts you used in your instruction last school year (Sept. 1974 - June 1975). . . . . Hours | .47 |

12. How many different 16 mm films did you use in your instruction during the 1974-75 school year? . . . . . | 9.75 |

What percentage of these films would you use again?. . . | 57 | % .48

13. How many different video cassettes and video tapes did you use in your instruction during the 1974-75 school year?. . . . . | 2.95 |

What percentage of these video cassettes and video tapes would you use again? . . . . . | 28 | %

14. How many different 16 mm films have you used in your instruction this school year (since Sept. 1975) ? . . . . . | ____ |

15. How many different videocassettes and video tapes have you used in your instruction this school year (since Sept. 1975)? . . . . . | ____ |

16. To what extent have the following factors been problems in your utilization of film and television? (Please respond to all items below)

Figures in Percentages (%)	A Major Problem	A Minor Problem	Poses No Problem
a. Inadequate supply of equipment	25 (1)	20 (2)	54 (3)
b. Difficulty in scheduling equipment	13 (1)	28 (2)	59 (3)
c. Reliability of equipment	3 (1)	21 (2)	75 (3)
d. Difficulty of operating equipment.	3 (1)	16 (2)	81 (3)
e. Availability of relevant programming	55 (1)	21 (2)	23 (3)
f. Difficulty in scheduling programming	16 (1)	29 (2)	55 (3)
g. Outdated media materials	35 (1)	33 (2)	32 (3)
h. Poor production quality of programming . . .	12 (1)	34 (2)	54 (3)
i. Difficulty of integrating media into instruction.	13 (1)	22 (2)	65 (3)
j. Incompatibility of media with course objectives	23 (1)	30 (2)	47 (3)
k. Lack of special training in the use of media	7 (1)	22 (2)	71 (3)
l. Lack of confidence in the instructional effectiveness of media	8 (1)	21 (2)	72 (3)

17. Indicate for the last school year (Sept. 1975 - June 1975) the percentage of the total instructional time each of the three instructional modes listed below was utilized, and then indicate the percentage of time that film and television were utilized within each mode.

Instructional Mode	Percent of Total Instructional Time		Percent of Time Film and Television Were Used	$\bar{x}$
Entire Class Instruction	____ %	times	____ %	= 8.3%
Small Group Instruction	____ %	times	____ %	= 4.5%
Individualized Instruction	____ %	times	____ %	= 3.25%

Media Use

18. Indicate the extent to which the following characteristics and effects are inherent in television and film. In other words: Do television and film . .

$\bar{x}$		Figures in Percentage (%)	Strongly Agree	Moderately Agree	Not Certain	Moderately Disagree	Strongly Disagree
2.14	III	a. Provide unique information .	23 (1)	49 (2)	19 (3)	8 (4)	1 (5)
2.32	I	b. Increase student participation and involvement . . .	15 (1)	49 (2)	26 (3)	9 (4)	1 (5)
2.96	I	c. Improve student study habits	6 (1)	22 (2)	47 (3)	21 (4)	4 (5)
2.35	I	d. Increase opportunities to individualize instruction. .	24 (1)	36 (2)	25 (3)	12 (4)	3 (5)
2.13	III	e. Increase the cognitive learning of students . . .	22 (1)	47 (2)	26 (3)	4 (4)	0 (5)
2.13	III	f. Increase affective learning of students.	22 (1)	47 (2)	26 (3)	4 (4)	0 (5)
2.22	I	g. Increase the learning of skills	23 (1)	46 (2)	21 (3)	6 (4)	4 (5)
1.87	III	h. Summarize or provide overview very effectively. . .	36 (1)	46 (2)	14 (3)	4 (4)	1 (5)
2.13	I	i. Increase retention of information.	26 (1)	41 (2)	27 (3)	5 (4)	1 (5)
1.86	III	j. Provide a wider range of approaches to problems than is possible in regular classroom instruction. . .	40 (1)	41 (2)	14 (3)	5 (4)	1 (5)
2.53	I	k. Produce simplistic thinking.	11 (1)	36 (2)	44 (3)	9 (4)	1 (5)

Highest Factor Loadings

I
II
III

			Strongly Agree	Moderately Agree	Not Certain	Moderately Disagree	Strongly Disagree
3.26	II	l. Emphasize entertainment at the expense of learning.	6 (1)	23 (2)	24 (3)	34 (4)	14 (5)
3.48	II	m. Make students impatient in regular classroom instruction.	3 (1)	15 (2)	28 (3)	41 (4)	13 (5)
1.91	III	n. Provide a varied instructional pace.	33 (1)	49 (2)	13 (3)	5 (4)	0 (5)
1.96	III	o. Provide effective student reinforcement.	29 (1)	53 (2)	12 (3)	5 (4)	1 (5)
3.50	I	p. Increase student reading skills	5 (1)	6 (2)	39 (3)	33 (4)	16 (5)
2.42	III	q. Provide nonthreatening instruction.	15 (1)	37 (2)	38 (3)	7 (4)	2 (5)
2.92	II	r. Favor the fast learner . .	9 (1)	25 (2)	35 (3)	25 (4)	5 (5)
3.64	II	s. Decrease classroom control and order.	3 (1)	10 (2)	20 (3)	45 (4)	20 (5)
2.53	III	t. Effectively organize the sequencing of instructional tasks	11 (1)	40 (2)	34 (3)	11 (4)	4 (5)
2.56	III	u. Have extensive transfer value.	9 (1)	39 (2)	42 (3)	9 (4)	2 (5)
2.02	II	v. Have value mainly as an instructional supplement or enrichment.	30 (1)	49 (2)	14 (3)	7 (4)	2 (5)
3.20	II	w. Reduce the opportunity for on-going evaluation of student progress	5 (1)	20 (2)	35 (3)	30 (4)	10 (5)
2.73	I	x. Increase student-teacher interaction.	10 (1)	36 (2)	28 (3)	20 (4)	5 (5)
3.38	II	y. Increase teacher work loads.	6 (1)	21 (2)	18 (3)	41 (4)	14 (5)
3.12	II	z. Make learning less personal.	7 (1)	25 (2)	25 (3)	37 (4)	7 (5)
3.95	II	aa. Provide adequate instruction without a teacher .	3 (1)	8 (2)	16 (3)	35 (4)	38 (5)
4.31	II	bb. Have no instructional value.	1 (1)	3 (2)	12 (3)	30 (4)	53 (5)

19. If television and film were a required part of your regular classroom instruction, to what extent would your present role as a teacher change?

$\bar{x}$ = 1.78

No Change	38	(1)
Minor Change	47	(2)
Major Change	14	(3)
Total Change	1	(4)

20. How far in advance can you predict when you will need to use a television or film program?

$\bar{x}$ = 3.36

Less than one day	3	(1)
One day only	6	(2)
Two to five days	54	(3)
Two to four weeks	27	(4)
More than four weeks	10	(5)

21. What term would most adequately describe the instructional materials and services provided by your BOCES Educational Communications Center?

$\bar{x}$ = 2.59

Excellent	28	(1)
Good	28	(2)
Adequate	13	(3)
Barely Adequate	19	(4)
Very Poor	12	(5)

Additional Comments: _____

_____

_____

_____

22. How would you describe the reaction of your students toward the film and television programs you have used in your instruction?

$\bar{x}$ = 2.02

Very favorable	24	(1)
Favorable	56	(2)
Uncertain	16	(3)
Unfavorable	4	(4)
Very Unfavorable	1	(5)

				$\bar{x}$
23.	Do you presently have a videocassette player and color television set in your classroom ?	Yes |30| (1)	No |70| (2)	1.7
24.	Are you aware of the purpose and nature of Project 81?	Yes |61| (1)	No |39| (2)	1.39

If yes, complete the remaining items.

a.	Were you involved in the recommendation and selection of films for Project 81?	Yes |32| (1)	No |68| (2)	1.68
b.	Were you involved in the preview of films for Project 81?	Yes |22| (1)	No |78| (2)	1.78
c.	Do you presently have a videocassette player and color television set in your classroom that is a result of Project 81?	Yes |28| (1)	No |12| (2)	1.72

Additional Comments:

THE UNIVERSITY OF THE STATE OF NEW YORK
THE STATE EDUCATION DEPARTMENT
ALBANY, NEW YORK 12234

'ANT COMMISSIONER
SECONDARY AND CONTINUING
)N PROGRAM PLANNING
COMMUNICATIONS
518. 474-2380

BUREAU OF
EDUCATIONAL COMMUNICATIONS
518: 474-5023
518: 474-5023

June 7, 1976

Participant in Project 81:

Enclosed with this cover letter is a survey form requesting information
; instructional television and film. The survey form is part of the
ıation of the Appalachian BOCES Consortium and Project 81. This evalu-
ı is required by the Appalachian Regional Commission in Washington as
ıdition of project funding, and must be completed at the end of this
)l year.

Since Project 81 materials should have been available in your occu-
)nal centers for some time we would like you to evaluate their importance
:ffectiveness. We hope that feedback from all those involved with the
:ct materials will provide the information necessary to assess the Project's
:t and modify it for future development.

I realize how busy the end of the school year is for you and how hectic
schedules must be. However, your responses are essential to the evalu-
ı of the Project so we would appreciate a few minutes of your time to
.ete the survey.

Please fill out the survey form before summer vacation, and return it to
:ducational communications director in your BOCES. Envelopes are enclosed
the survey so your individual survey response will remain anonymous.
:e try to be as precise and candid as possible in answering the survey.

Thank you for taking time out of your hectic schedule to provide the
mation requested. I hope that the Project 81 materials will provide
ıant instructional benefits to you throughout the coming years.

Sincerely,

Michael S. Radlick

Michael S. Radlick
Evaluation Coordinator

ar

TEACHER SURVEY

Responses Post Survey by BOCES

BOCES	Frequency	Percentage
Allegany	6	3.8
Broome	13	8.2
Cattaraugus	26	16.4
Chautauqua	33	20.8
Cortland	19	11.9
Delaware	11	6.9
Greene	17	10.7
Schuyler	24	15.1
Steuben	5	3.1
Tompkins	5	3.1
	159	100 %

Responses by Content Area

Content	Frequency	Percentage
Agriculture	13	8.2
Auto	20	12.6
Building	23	14.4
Business	10	6.3
Distributive Ed.	6	3.8
Drafting	6	3.8
Electricity	5	3.1
Electronics	4	2.5
Food Services	6	3.8
Health	19	11.9
Personal Services	10	6.3
Trade/Industrial	21	13.2
Other	15	9.4

Overall Totals N = 159

The University of the State of New York
THE STATE EDUCATION DEPARTMENT
Bureau of Educational Communications
Albany, New York 12234

SURVEY OF UTILIZATION OF MEDIA TECHNOLOGY BY OCCUPATIONAL EDUCATION TEACHERS
JUNE 1976

BOCES CODE

DO NOT MARK HERE

1. Name of BOCES _____

2. Name of Occupational Education Center _____

_____

3. Experience

   a. Total years of formal education (for example, Associate Degree = 14)..... $\bar{x}$ = 15.56 SD = 2.97

   b. Total number of years you have been teaching... $\bar{x}$ = 7.52 SD = 4.71

   c. Number of years (if any) of employment in a trade or a profession outside of teaching ..... 14.10 SD = 8.29

   d. What is your primary instructional content area responsibility? (main subject taught)..... _____

4. Have you had in-service training related to the production of instructional media and technology?

   Yes 69.5% No 30.5

   If Yes, how many hours of training? ... $\bar{x}$ = 11.58 ..... SD = 15.90

5. Have you had in-service training related to the utilization of instructional media and technology?

   Yes 71% No 29%

   If Yes, how many hours of training? ... $\bar{x}$ = 8.38 ..... SD = 12.89

6. Media Use during the last school year

   a. Estimate how many 16mm films you used in your instruction last school year (September 1974-June 1975) ..... $\bar{x}$ = 9.22 SD = 10.36

   b. Estimate how many videocassettes or videotapes you used in your instruction last school year (September 1974-June 1975) ..... $\bar{x}$ = 5.11 SD = 8.73

7. Media Use during this school year

   a. Estimate how many different 16mm films you used in your instruction during this entire school year (September 1975-June 1976) ..... $\bar{x}$ = 9.80 SD = 12.01

   What percentage of these films would you use again? ..... $\bar{x}$ = 67.38% SD = 37.95

   How many films did you actually use more than once?.. $\bar{x}$ = 5.02 SD = 12.85

b. Estimate how many different videocassettes and videotapes you have used in your instruction during this entire school year (September 1975-June 1976).....$\bar{x}$ = 10.03 SD = 12.87

What percentage of these videocassettes and tapes would you use again?.....$\bar{x}$ = 71.36% SD = 38.56

How many videocassettes did you use more than once?.....$\bar{x}$ = 7.61 SD = 15.06

8. Since January 1, 1976:

a. Have you previewed any Project 81 Occupational Education videocassettes?.....53.6% Yes 46.4% No

If yes, how many?.....$\bar{x}$ = 8.82 SD = 10.20

b. Have you used any Project 81 Occupational Education video-cassettes in your instructional program?.....62.7% Yes 37.3% No

If yes, how many?.....$\bar{x}$ = 8.50 SD = 10.30

c. Since January 1, 1976 how many different 16mm films have you used with your classes?.....$\bar{x}$ = 5.11 SD = 7.60

How many of these films had you ever seen before or used with your classes prior to January 1?.....$\bar{x}$ = 3.39 SD = 6.03

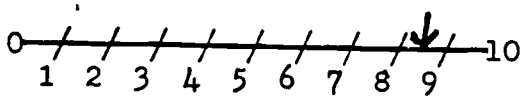
d. Since January 1, 1976 how many videocassettes have you used in your instruction?.....$\bar{x}$ = 6.84 SD = 9.36

How many of these videocassettes had you ever seen before or used with your classes prior to January 1?.....$\bar{x}$ = 2.25 SD = 5.80

9. If you have seen or used any Project 81 videocassettes, please answer the following questions. If you haven't used any Project 81 materials, please go to Question 15.

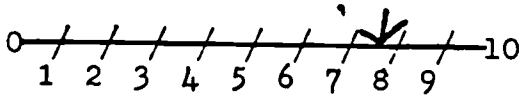
On a scale of 0 to 10, with 0 being lowest or least and 10 being highest or or most, please rate the following (circle the number):

How accessible would you rate the Project 81 videocassette materials from your occupational center?



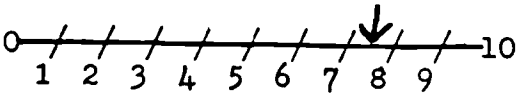
$\bar{x}$ = 8.29 SD = 2.28

How instructionally effective are the Project 81 videocassette materials which pertain to your instructional area?



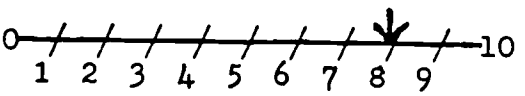
$\bar{x}$ = 7.4 SD = 2.10

How relevant are the Project 81 video-cassette materials pertaining to your instructional area?



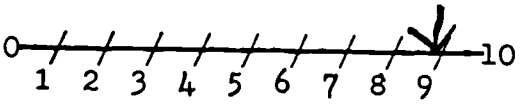
$\bar{x}$ = 7.48 SD = 2.34

How instructionally correct were the content and methods used in the Project 81 videocassette materials?



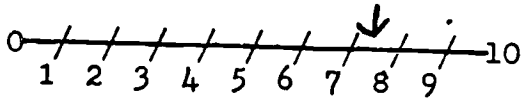
$\bar{x}$ = 7.90 SD = 1.65

How available for your use is the Project 81 videocassette catalog?



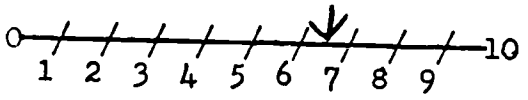
$\bar{x}$ = 8.99 SD = 2.14

How effective were the Project 81 videocassette materials you have used in teaching your course objective?



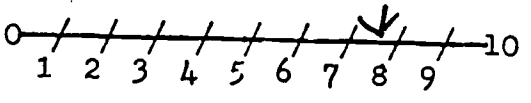
$\bar{x}$ = 7.50 SD = 2.0

What degree of difference do you feel the Project 81 videocassette materials will make in increasing learning opportunities for your students?



$\bar{x}$ = 6.96 SD = 2.3

How would you rate the Project 81 videocassette materials overall?



$\bar{x}$ = 7.91 SD = 2.0

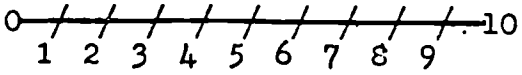
10. What percentage of your instructional goals do you feel the Project 81 videocassette materials will help you meet? ... $\bar{x}$ = 26.16 % SD = 26.3

11. Since Project 81 how many different videocassette titles in your BOCES catalog pertain to your instructional content area? ..... $\bar{x}$ = 22.81 SD = 21.16

12. Approximately how many videocassettes (Project 81) would you anticipate using throughout the upcoming school year (Sept. 1976–June 1977)? (If you are not planning to teach next year, leave blank) ..... $\bar{x}$ = 20.44 SD = 21.22

13. For what percentage of the entire upcoming school year do you plan to utilize videocassette materials in your instructional program? (If you are not planning to teach, leave blank) ..... $\bar{x}$ = 24.79 % SD = 31.85

14. To what degree do you anticipate integrating the Project 81 videocassette materials into your instructional program next school year as an integral aspect of the instruction rather than as a supplement?



15. In what percentage of your total instructional program do you presently use film and videocassette? ..... $\bar{x}$ = 11.42 % SD = 17.7

16. Indicate for the period from January 1, 1976 to now the percentage of the total instructional time each of the three instructional modes listed below was utilized, and then indicate the percentage of time that film and television were utilized within each mode.

INSTRUCTIONAL MODE	Percent of Total Instructional Time		Percent of Time Film and Television Were Used	
Entire Class Instruction	$\bar{x}$ = 41.20%	SD = 33.00	$\bar{x}$ = 24.97%	with entire class SD = 36.09
Small Group Instruction	$\bar{x}$ = 19.73%	SD = 18.48	$\bar{x}$ = 6.94%	with small group SD = 15.99
Individualized Instruction	$\bar{x}$ = 27.71%	SD = 25.40	$\bar{x}$ = 4.97%	with individualized SD = 15.51
	100%			

17. Do you presently have a videocassette player and color television set in your classroom?

Yes 38.6% No 61.4%

18. To what extent are the following factors problems in your utilization of film and television? (Please respond to all items below).

$\bar{x}$			A Major Problem (1)	A Minor Problem (2)	Poses No Problems (3)	SD
2.44	a.	Inadequate supply of equipment	____	____	____	.705
2.42	b.	Difficulty in scheduling equipment	____	____	____	.71
1.93	c.	Availability of relevant programming	____	____	____	.82
2.52	d.	Difficulty in scheduling programming	____	____	____	.70
2.28	e.	Outdated media materials	____	____	____	.692
2.45	f.	Poor production quality of programming	____	____	____	.689
2.21	g.	Incompatibility of media with course objectives	____	____	____	.79
2.33	h.	Lack of support materials	____	____	____	.75
2.42	i.	Programming unsuitable for instructional objectives without modifications	____	____	____	.693
2.55	j.	Increased instructional planning and preparation time	____	____	____	.64

. Indicate the extent to which the following characteristics and effects are inherent in television and film. In other words: Do television and film .....

$\bar{x}$			Strongly Agree (1)	Moderately Agree (2)	Not Certain (3)	Moderately Disagree (4)	Strongly Disagree (5)	
2.28	a.	Increase student participation and involvement	____	I ____	____	____	____	1.09
2.97	b.	Improve student study habits	____	I ____	____	____	____	.99
2.36	c.	Increase opportunities to individualize instruction	____	I ____	____	____	____	1.10
2.33	d.	Increase the learning of skills	____	I ____	____	____	____	1.02
2.24	e.	Increase retention of information	____	I ____	____	____	____	.99
2.66	f.	Produce simplistic thinking	____	I ____	____	____	____	.92
2.46	g.	Emphasize entertainment at the expense of learning.....	____	II ____	____	____	____	1.09

FACTOR 1 I

FACTOR 2 II

		Strongly Agree (1)		Moderately Agree (2)		Not Certain (3)	Moderately Disagree (4)	Strongly Disagree (5)	SD
	h. Make students impatient in regular classroom instruction	____	II	____		____	____	____	1.06
2.56	i. Increase student reading skills	____	I	____		____	____	____	.96
3.04	j. Favor the fast learner .	____	II	____		____	____	____	1.10
	k. Decrease classroom control and order	____	II	____		____	____	____	1.15
2.12	l. Have value mainly as an instructional supplement or enrichment	____	I	____		____	____	____	1.12
3.34	m. Reduce the opportunity for on-going evaluation of student progress	____	II	____		____	____	____	1.04
2.61	n. Increase student-teacher interaction	____	I	____		____	____	____	1.09
	o. Increase teacher workloads	____	II	____		____	____	____	1.11
3.29	p. Make learning less personal	____	II	____		____	____	____	1.13
4.12	q. Provide adequate instruction without a teacher	____	II	____		____	____	____	1.06

20. How far in advance can you predict when you will need to use a television or film program?

$\bar{x}$ = 3.14
SD = .87

Less than one day..... ____ (1)
One day only..... ____ (2)
Two to five days..... ____ (3)
Two to four weeks..... ____ (4)
More than four weeks..... ____ (5)

21. What term would most adequately describe the instructional materials and services provided by your BOCES Educational Communications Center?

$\bar{x}$ = 2.09
SD = 1.20

Excellent ..... ____ (1)
Good ..... ____ (2)
Adequate ..... ____ (3)
Barely Adequate ..... ____ (4)
Very Poor ..... ____ (5)

FEEDBACK

We would appreciate any reactions, suggestions, or comments you might have that pertain to Project 81. We need your feedback to modify and improve the program.

Thank you for your cooperation!

Media Evaluation

BOCES	Frequency	Percent
Allegany	75	11.2
Cattaraugus	25	3.7
Chautauqua	295	44.2
Delaware	157	23.5
Greene	39	5.8
Schuyler	30	4.5
Steuben	47	7.0
	668	

N = 666 Returned

Occupational Education Teachers' Media Evaluation
Project 81

1. What media format are you using this material in? (Check one)

____ Film x Videocassette

2. What is the title of the material? _____

3. What content area is the material being used in?

Percentage			
15.1	Agriculture	____	Food Services
10.8	Auto Trades	8.8	Health Services
16.8	Building Trades	2.5	Personal Services
3.9	Business Ed	5.7	(Cosmetology)
0.2	Distributive Ed	9.7	Trade/Industrial
3.5	Drafting	10.8	Other
0.9	Electricity	7.6	Career Ed
____	Electronics		

4. How many times was the material shown to students? (Count each separate showing whether in whole or part)

$\bar{x}$ = 1.78 SD = .974

5. How was the material used? (Make one check in each category for each showing)

CATEGORY I	$\bar{x}$	SD	CATEGORY II	$\bar{x}$	SD
Total Class Showing	1.06	.327	Introduction	1.07	.356
Small Group Showing	1.03	.172	Summary	1.02	.149
Individualized Showing	1.14	.554	Review	1.04	.211
Teacher Preview	1.01	.084	Remediation	1.24	.689
			Direct Instruction	1.05	.386

$\bar{x}$				SD
7.92	6.	How current and accurate was the material?	(Low) 0 1 2 3 4 5 6 7 8 9 10 (High)	2.15
8.07	7.	How appropriate was the material for your grade level?	(Low) 0 1 2 3 4 5 6 7 8 9 10 (High)	2.28
7.80	8.	How instructionally effective was the material?	(Low) 0 1 2 3 4 5 6 7 8 9 10 (High)	2.28
8.07	9.	How relevant was the material to your instructional program?	(Low) 0 1 2 3 4 5 6 7 8 9 10 (High)	2.28
7.72	10.	How favorable was the overall student reaction to the material?	(Low) 0 1 2 3 4 5 6 7 8 9 10 (High)	2.35
8.05	11.	How would you rate the material overall?	(Low) 0 1 2 3 4 5 6 7 8 9 10 (High)	2.28

12. Would you use the material again? 99.7% Yes 0.3% No

The University of the State of New York
THE STATE EDUCATION DEPARTMENT
Bureau of Educational Communications
Albany, New York 12234

SURVEY OF BOCES EDUCATIONAL COMMUNICATIONS DIRECTORS
FALL 1975

Section I

OFFICE USE ONLY
BOCES CODE

1. Name of BOCES _____

2. Number of component districts associated with your BOCES. . . . . |_____|

3. Number of students enrolled in the component districts. . . . . |_____|

4. Number of BOCES centers associated with your BOCES. . . . . |_____|

MEDIA MATERIALS INFORMATION

1. Indicate below the media materials that are currently available or listed in your catalogue. Include all project 80 materials in your Centers. Do not include Project 81 materials.

   a. Number of 16 mm film titles listed in your catalogue . . . . . |_____|

   b. Number of different video cassette programs listed in your catalogue. . . . . |_____|

   c. Number of different video tape programs listed in your catalogue. . . . . |_____|

   d. Number of film strips listed in your catalogue . . . . . |_____|

   e. Number of audiotapes listed in your catalogue. . . . . |_____|

   f. Number of different maps/prints listed in your catalogue . . . . |_____|

   g. Number of books available through BOCES Educational Communications Center . . . . . |_____|

   h. Number of other materials (Specify: _____) . |_____|

2. Number of 16 mm films in the BOCES catalogue (Include project 80 materials but not 81) that are relevant to the occupational education program. . . . . |_____|

3. Number of video tapes and cassettes in the BOCES catalogue (Include project 80 materials but not 81) that are relevant to the occupational education program. . . . . |_____|

(For questions 2 and 3 please consider only those media materials directly relevant to occ ed.)

MEDIA EQUIPMENT INFORMATION

4. Number of video cassette players available for use in the component districts of your BOCES. . . . . |_____|

5. Number of color monitors available for use in the component districts of your BOCES . . . . . |_____|

6. Number of video recorders (B & W or Color) available for use in the component districts of your BOCES . . . . . |_____|

7. Number of video cassette players purchased through the Project 81 Grant . . . . . |_____|

8. Number of video cassette recorders purchased through the Project 81 Grant . . . . . |_____|

9. Number of color receivers purchased through the Project 81 Grant. . |_____|

10. Number of special video recorders (i.e. SONY 2850) purchased through the Project 81 Grant. . . . . |_____|

11. Number of color cameras purchased through the Project 81 Grant. . . |_____|

12. Number of portable video recording units purchased through the Project 81 Grant. . . . . |_____|

INSERVICE TRAINING INFORMATION

13. Does this BOCES offer a regular inservice training program for media utilization?. . . . . Yes |__| (1) No |__| (2)

a. If yes, how many training cycles per year? . . . . . |_____|

b. Are all teachers required to take the program? . . . . . Yes |__| (1) No |__| (2)

c. How many of the present occupational education teaching staff have taken the inservice training program? . . . . . |_____|

d. Briefly describe the training given in each of the following areas:

Equipment utilization _____

_____

_____

_____

_____

INSERVICE TRAINING INFORMATION (13d con't.)

Software utilization _____

_____

_____

_____

_____

Instructional practices and procedures _____

_____

_____

_____

_____

Production of media _____

_____

_____

_____

_____

Section II

Complete this section for each separate Educational Communications center or occ ed center attached to your BOCES.

1. Name of BOCES center _____

2. Number of Occupational Education students enrolled in this center (include special education students who are receiving occupational education training). . . . . [ ]

3. Total BOCES staff in this center . . . . . [ ]

4. Number of Occupational Education teachers in this center . . . . . [ ]

5. Number of administrative staff directly involved in the occupational education program in this center. . . . . [ ]

6. Number of technical staff directly involved with the occupational education program in this center . . . . . [ ]

7. Number of clerical staff directly involved with the occupational education program in this center . . . . . [ ]

8. Number of aides/assistants directly involved in the occupational education program in this center . . . . . [ ]

MEDIA MATERIALS INFORMATION

If materials in any of the following categories are supplied by another center and are not available in your center, indicate their number as "0".

1. Number of 16mm film prints available in your center. . . . . [ ]

2. Number of video cassette copies available in your center . . . . . [ ]

3. Number of video tapes available in your center . . . . . [ ]

4. Number of filmstrips available in your center. . . . . [ ]

5. Number of audio tapes available in your center . . . . . [ ]

6. Number of maps/prints available in your center . . . . . [ ]

7. Number of books available in your center . . . . . [ ]

MEDIA EQUIPMENT INFORMATION

nber f 16mm projectors available in this center. . . . . [ ]

nber of video cassette players available in this center before e Project 81 Grant. . . . . [ ]

nber of video monitors available in this center before the oject 81 Grant. . . . . [ ]

nber of video cassette players available in this center after e Project 81 Grant. . . . . [ ]

nber of video monitors available in this center after the oject 81 Grant. . . . . [ ]

nber of color video recorders available now in this center. . . [ ]

nber of teachers that have a permanent or semi-permanent video e set-up (player and monitor) in their classrooms within s center . . . . . [ ]

nber of color video cameras now available for use in this ter. . . . . [ ]

efly describe the quantity of black and white video recorders, nitors or cameras available for use in this center_____

_____

_____

FACILITIES INFORMATION

1. Is there a production center with production capability within this center? . . . . . Yes ☐ (1) No ☐ (2)

2. Does this center have a permanent studio? . . . . . Yes ☐ (1) No ☐ (2)

3. Indicate the number of hours of in-house production (in any format) at this center during the following years:

	Hours
1972.	☐
1973.	☐
1974.	☐
1975.	☐

4. Does this center have video duplication capability? . . . . . Yes ☐ (1) No ☐ (2)

   a. If yes, for what formats?_____

   _____

   _____

5. What type of formats are used for production and creation of masters_____

   _____

   _____

6. What format is most widely utilized in this center for instructional purposes

   _____

7. What audio/visual format is most widely utilized in the component districts served in this center?_____

8. Indicate the number of program hours that were duplicated in this center during the following years:

	Hours
1972.	☐
1973.	☐
1974.	☐
1975.	☐

9. Does this center provide media services for any other occupational education center?. . . . . Yes ☐ (1) No ☐ (2)

If yes, describe the services_____

MEDIA UTILIZATION INFORMATION

1. Number of 16 mm films booked by this BOCES center for use by teachers in the component districts during:

   1972. . . . . |____|
   1973. . . . . |____|
   1974. . . . . |____|
   1975. . . . . |____|

2. Number of video cassettes and video tapes booked by this BOCES center for use by teachers in the component districts during:

   1972. . . . . |____|
   1973. . . . . |____|
   1974. . . . . |____|
   1975. . . . . |____|

3. Amount of all other audiovisual media (excluding books, 16mm films, and videocassettes) scheduled by this BOCES center for use by teachers in the component dustricts during:

   1972. . . . . |____|
   1973. . . . . |____|
   1974. . . . . |____|
   1975. . . . . |____|

4. Number of 16 mm films scheduled by this BOCES Center for viewing by Occupational Education teachers during:

   1972. . . . . |____|
   1973. . . . . |____|
   1974. . . . . |____|
   1975. . . . . |____|

5. Number of video tapes and video cassettes scheduled by this BOCES Center for viewing by Occupational Education teachers during:

1972. . . . . |____|

1973. . . . . |____|

1974. . . . . |____|

1975. . . . . |____|

6. How far in advance do occupational education teachers typically schedule films and video tapes?. . . . . days |____|

7. How long does it take for the communications center to fill the typical requests?. . . . . days |____|

The University of the State of New York
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Bureau of Educational Communications
Albany, New York 12234

EDUCATIONAL COMMUNICATIONS DIRECTOR SURVEY

BOCES _____

Center _____

---

1. Estimate the number of 16mm films the occupational education teachers in your center used from September 1975 to December 31, 1975.

$\bar{x}$ = 127.64 Films

2. Estimate the number of 16mm films the occupational education teachers in your center used since Project 81 materials were introduced (after January 1, 1976).

153.21 Films

3. Estimate the number of videocassettes and videotapes the occupational education teachers in your center used from September 1975 to December 31, 1975.

51.14 Video-cassettes

4. Estimate the number of videocassettes and videotapes the occupational education teachers in your center used since Project 81 materials were introduced (after January 1, 1976).

243.0 Video-cassettes

With 0 being lowest and 10 being highest, circle the number which represents your rating or feeling toward the following statements.

5. How would you rate your occupational teacher's attitudes toward the use of media for instruction prior to the introduction of the Project 81 materials?

Most Unfavorable 0 1 2 3 4 5 6 7 8 9 10 Most Favorable $\bar{x}$ = 4.22

6. How would you rate occupational teacher's attitudes toward the use of media for instruction after the introduction of Project 81 materials in January 1976?

Most Unfavorable 0 1 2 3 4 5 6 7 8 9 10 Most Favorable $\bar{x}$ = 6.94

7. How available was media equipment in your center before Project 81?

Highly Unavailable 0 1 2 3 4 5 6 7 8 9 10 Highly Available $\bar{x}$ = 6.39

8. How available is media equipment in your center since Project 81?

Highly Unavailable 0 1 2 3 4 5 6 7 8 9 10 Highly Available $\bar{x}$ = 8.39

9. How extensively have the occupational education teachers in your center been using the Project 81 equipment?

Not at All 0 1 2 3 4 5 6 7 8 9 10 A Great Deal $\bar{x}$ = 7.0

10. How extensively have the occupational education teachers in your center been using the Project 81 videocassette materials?

Not at All 0 1 2 3 4 5 6 7 8 9 10 A Great Deal $\bar{x}$ = 6.778

11. Estimate how many BOCES films were applicable to occupational education before Project 81.

57.33

12. Estimate how many BOCES videocassettes were applicable to occupational education before Project 81.

31.1

13. From your experience how relevant to occupational education programs is the content of the Project 81 materials?

Not Relevant 0 1 2 3 4 5 6 7 8 9 10 Highly Relevant $\bar{x}$ = 8.78

14. From your experience how instructionally effective are the Project 81 videocassette materials in teaching occupational education course objectives?

No Effectiveness 0 1 2 3 4 5 6 7 8 9 10 Greatest Effectiveness $\bar{x}$ = 7.55

15. a. From your experience how great a difference do you feel the Project 81 materials make in increasing learning opportunities for your students?

No Difference 0 1 2 3 4 5 6 7 8 9 10 A Great Difference $\bar{x}$ = 8.22

b. How great a difference do you feel the Project 81 materials will make in increasing learning opportunities for your students over the next few years?

No Difference 0 1 2 3 4 5 6 7 8 9 10 A Great Difference $\bar{x}$ = 8.22

16. What percentage of your occupational educational goals do you feel that the Project 81 videocassette materials will help your teachers meet?

$\bar{x}$ = 59.38 %

17. Before Project 81, what percentage of your occupational education teachers used film and videocassettes consistently as a regular part of their instructional program?

$\bar{x}$ = 19.56 %

18. Since the introduction of Project 81 materials in January 1976, what percentage of your occupational education teachers have been using film and videocassettes (or videotapes) consistently as a regular part of their instructional program?

$\bar{x}$ = 47.44 %

19. To what degree do you anticipate your occupational education teachers will adapt their instructional programs for next year to integrate videocassette programming?

Not at All 0 1 2 3 4 5 6 7 8 9 10 A Great Deal $\bar{x}$ = 7.17

20. What has been the reaction of occupational education students to the Project 81 videocassette materials?

Highly Unfavorable 0 1 2 3 4 5 6 7 8 9 10 Highly Favorable $\bar{x}$ = 7.357

21. How much would you expect your teacher's utilization of media to increase in the next year?

None at all 0 1 2 3 4 5 6 7 8 9 10 A Great Deal $\bar{x}$ = 7.78

22. To what extent have the following factors been problems in your teachers utilization of film and television? (Please respond to all items below)

	A Major Problem	A Minor Problem	Poses No Problems	$\bar{x}$
a. Inadequate supply of equipment	___ (1)	___ (2)	___ (3)	1.89
b. Difficulty in scheduling equipment	___ (1)	___ (2)	___ (3)	2.389
c. Reliability of equipment	___ (1)	___ (2)	___ (3)	2.89
d. Difficulty of operating equipment	___ (1)	___ (2)	___ (3)	2.55
e. Availability of relevant programming	___ (1)	___ (2)	___ (3)	1.67
f. Difficulty in scheduling programming	___ (1)	___ (2)	___ (3)	2.5
g. Outdated media materials	___ (1)	___ (2)	___ (3)	1.66

		A Major Problem	A Minor Problem	Poses No Problems	$\bar{x}$
h.	Poor production quality of programming	____ (1)	____ (2)	____ (3)	2.0
i.	Difficulty of integrating media into instruction	____ (1)	____ (2)	____ (3)	1.833
j.	Incompatibility of media with course objectives	____ (1)	____ (2)	____ (3)	1.875
k.	Lack of special training in the use of media	____ (1)	____ (2)	____ (3)	1.778
l.	Lack of confidence in the instructional effectiveness of media	____ (1)	____ (2)	____ (3)	1.5
m.	Lack of support materials	____ (1)	____ (2)	____ (3)	1.33
n.	Increased instructional planning and preparation time	____ (1)	____ (2)	____ (3)	1.749

23. Relative to those teachers who use film and video media, what average percentage of their total media use is in each of the following arrangements?

$\bar{x}$ === $\bar{x}$ =

Entire class viewing 75.43% of media use

Small group viewing 15.64% of media use

Individualized viewing 8.786% of media use

_____ Total media use

24. Which two occupational education content areas have been most satisfied with Project 81 materials?

Consensus: Health, Cosmetology, Building Trades.

25. Which two occupational education content areas have been least satisfied with Project 81 materials?

Consensus: Food, Auto

26. What have been the major problems or concerns (if any) of your teachers relative to Project 81?

27. What would you estimate the teachers overall reaction to the Project 81 videocassette materials has been?

Highly Unfavorable — 0 1 2 3 4 5 6 7 8 9 10 — Highly Favorable $\bar{x}$ = 7.11

28. Do you have any comments on Project 81 that you would like to provide? We would appreciate your feedback!

The University of the State of New York
THE STATE EDUCATION DEPARTMENT
Bureau of Educational Communications
Albany, New York 12234

OCCUPATIONAL EDUCATION DIRECTOR'S SURVEY
June 1976

BOCES _____

Center _____

Number of occupational education teachers you are responsible for in this center _____

---

1. Estimate the number of 16mm films the occupational education teachers in your center used from September 1975 to December 31, 1975.

183.75 Films

2. Estimate the number of 16mm films the occupational education teachers in your center used since Project 81 materials were introduced (after January 1, 1976).

135.6 Films

3. Estimate the number of videocassettes and videotapes the occupational education teachers in your center used from September 1975 to December 31, 1975.

24.25 Video-cassettes

4. Estimate the number of videocassettes and videotapes the occupational education teachers in your center used since Project 81 materials were introduced (after January 1, 1976).

170.38 Video-cassettes

With 0 being lowest and 10 being highest, circle the number which represents your rating or feeling toward the following statements.

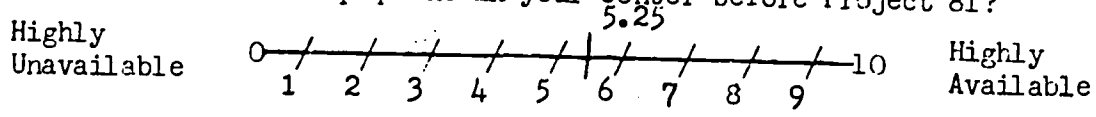
5. How would you rate your occupational teacher's attitudes toward the use of media for instruction prior to the introduction of the Project 81 materials?

Most Unfavorable — 0 1 2 3 4 5 6 7 8 9 10 — Most Favorable (5.94)

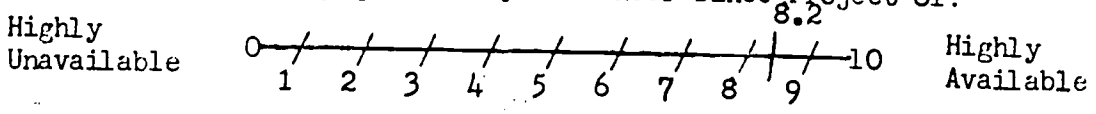
6. How would you rate occupational teacher's attitudes toward the use of media for instruction after the introduction of Project 81 materials in January 1976?

Most Unfavorable — 0 1 2 3 4 5 6 7 8 9 10 — Most Favorable (7.825)

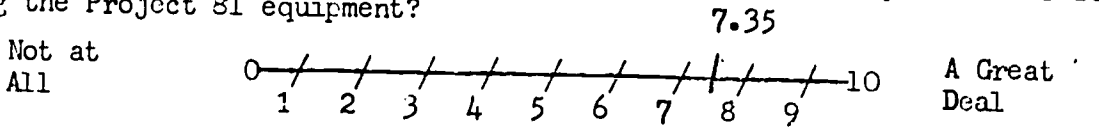
7. How available was media equipment in your center before Project 81?



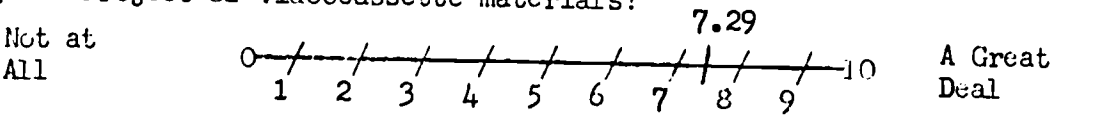
8. How available is media equipment in your center since Project 81?



9. How extensively have the occupational education teachers in your center been using the Project 81 equipment?



10. How extensively have the occupational education teachers in your center been using the Project 81 videocassette materials?



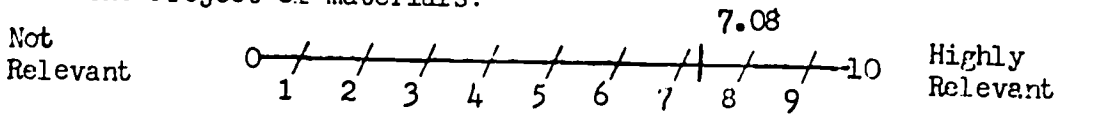
11. Estimate how many BOCES films were applicable to occupational education before Project 81.

65.38

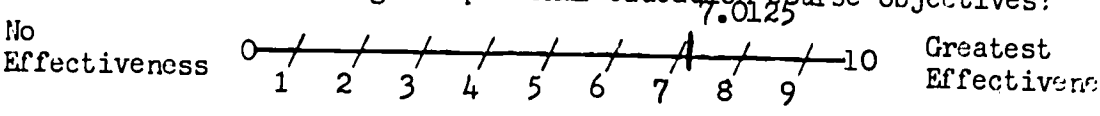
12. Estimate how many BOCES videocassettes were applicable to occupational education before Project 81.

95.625

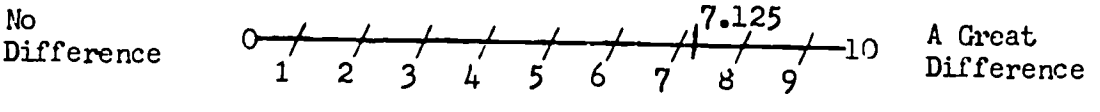
13. From your experience how relevant to occupational education programs is the content of the Project 81 materials?



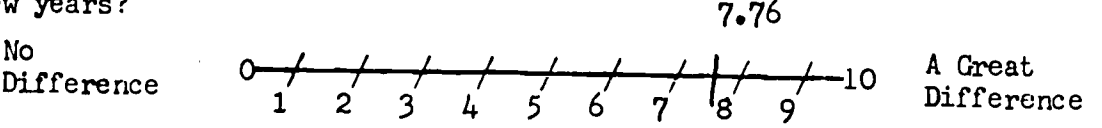
14. From your experience how instructionally effective are the Project 81 videocassette materials in teaching occupational education course objectives?



15. a. From your experience how great a difference do you feel the Project 81 materials make in increasing learning opportunities for your students?



b. How great a difference do you feel the Project 81 materials will make in increasing learning opportunities for your students over the next few years?



16. What percentage of your occupational educational goals do you feel that the Project 81 videocassette materials will help your teachers meet?

45.4125 %

17. Before Project 81, what percentage of your occupational education teachers used film and videocassettes consistently as a regular part of their instructional program?

39.75 %

18. Since the introduction of Project 81 materials in January 1976, what percentage of your occupational education teachers have been using film and videocassettes (or videotapes) consistently as a regular part of their instructional program?

75.4125 %

19. To what degree do you anticipate your occupational education teachers will adapt their instructional programs for next year to integrate videocassette programming?

7.1

Not at All — 0 1 2 3 4 5 6 7 8 9 10 — A Great Deal

20. What has been the reaction of occupational education students to the Project 81 videocassette materials?

7.2875

Highly Unfavorable — 0 1 2 3 4 5 6 7 8 9 10 — Highly Favorable

21. How much would you expect your teacher's utilization of media to increase in the next year?

6.79

None at all — 0 1 2 3 4 5 6 7 8 9 10 — A Great Deal

22. To what extent have the following factors been problems in your teachers utilization of film and television? (Please respond to all items below)

	A Major Problem		A Minor Problem		Poses No Problems
a. Inadequate supply of equipment	___ (1)		___ (2)	2.325	___ (3)
b. Difficulty in scheduling equipment	___ (1)		___ (2)	2.5	___ (3)
c. Reliability of equipment	___ (1)		___ (2)	2.89	___ (3)
d. Difficulty of operating equipment	___ (1)		___ (2)	2.81	___ (3)
e. Availability of relevant programming	___ (1)	1.69	___ (2)		___ (3)
f. Difficulty in scheduling programming	___ (1)		___ (2)	2.45	___ (3)
g. Outdated media materials	___ (1)	1.95	___ (2)		___ (3)

	A Major Problem	A Minor Problem	Poses No Problems
h. Poor production quality of programming	___ (1)	___ (2) 2.25	___ (3)
i. Difficulty of integrating media into instruction	___ (1)	___ (2) 2.325	___ (3)
j. Incompatibility of media with course objectives	___ (1) 1.89	___ (2)	___ (3)
k. Lack of special training in the use of media	___ (1)	___ (2) 2.16	___ (3)
l. Lack of confidence in the instructional effectiveness of media	___ (1) 1.89	___ (2)	___ (3)
m. Lack of support materials	___ (1)	2.0 (2)	___ (3)
n. Increased instructional planning and preparation time	___ (1)	___ (2) 2.1	___ (3)

23. Relative to those teachers who use film and video media, what average percentage of their total media use is in each of the following arrangements?

Entire class viewing 67 % of media use

Small group viewing 15 % of media use

Individualized viewing 18 % of media use

_____ Total media use

24. Which two occupational education content areas have been most satisfied with Project 81 materials?

_____

_____

25. Which two occupational education content areas have been least satisfied with Project 81 materials?

_____

_____

26. What have been the major problems or concerns (if any) of your teachers relative to Project 81?

_____

_____

_____

27. What would you estimate the teachers overall reaction to the Project 81 videocassette materials has been?

Highly Unfavorable — 0 1 2 3 4 5 6 6.9 7 8 9 10 — Highly Favorable

1 have any comments on Project 81 that you would like to provide? We appreciate your feedback!

The University of the State of New York
THE STATE EDUCATION DEPARTMENT
Bureau of Educational Communications
Albany, New York 12234

BOCES	Frequencies	%
Allegany	51	20.1
Broome	87	34.3
Delaware	94	37.0
Cortland	22	8.7

SURVEY OF MEDIA UTILIZATION
OCCUPATIONAL EDUCATION STUDENTS
June 1976

1. What is the name of your BOCES Center? _____

2. What is the school grade you will have completed at the end of this school year?
6—10th Grade, 107—11th Grade, 126—12th Grade, 15 NR

3. How many years have you been taking courses at this BOCES center?
$\bar{x}$ = 1.568 SD = .709

4. In which areas do you take courses? Please check all the areas in which you are enrolled.

Agriculture	29 — 11.4%	Electronics	6 — 2.4%
Auto Trades	0 — 0	Food Services	1 — .4
Building Trades	62 — 24.4	Health Services	48 — 18.9
Business Education	21 — 83	Personal Services (Cosmetology)	82 — 32.3
Drafting	1 — .4	Trade/Industrial	0 — 0
Electricity	0 — 0		
Other (Specify)	36 — 14.2%		

5. In what percentage of your classes during this school year did the instructor use films?
SD = 11.33 $\bar{x}$ = 11.907 %

6. In what percentage of your classes during this school year did the instructors use videotape programs?
SD = 12.09 $\bar{x}$ = 9.14 %

7. In what percentage of your classes during this school year did the instructors use live television programs?
SD = 13.12 $\bar{x}$ = 15.50 %

8. The following are statements about how people may feel about film and television in their classes. For each of the statements indicate how you personally feel about film and television.

$\bar{x}$	In other words, do film and television:	Strongly Agree	Moderately Agree	Not Certain	Moderately Disagree	Strongly Disagree	SD
2.33	a. Increase your participation and involvement...	___(1)	___(2)	___(3)	___(4)	___(5)	.932
2.58	b. Help you organize your studying.....	___(1)	___(2)	___(3)	___(4)	___(5)	.973

$\bar{x}$		Strongly Agree	Moderately Agree	Not Certain	Moderately Disagree	Strongly Disagree	SD
.78	c. Make it easier to understand how to perform skills being taught.....	___(1)	___(2)	___(3)	___(4)	___(5)	.80
2.07	d. Make it easier to remember things being taught in class.....	___(1)	___(2)	___(3)	___(4)	___(5)	.90
2.44	e. Make subject areas appear more simple than they really are....	___(1)	___(2)	___(3)	___(4)	___(5)	1.10
4.01	f. Are entertaining, but they don't teach you anything.....	___(1)	___(2)	___(3)	___(4)	___(5)	.97
3.58	g. Makes the rest of the classes seem dull by comparison.....	___(1)	___(2)	___(3)	___(4)	___(5)	1.10
3.60	h. Helps you with improving your reading skills.....	___(1)	___(2)	___(3)	___(4)	___(5)	1.02
.27	i. Go over material too quickly for you to understand it.....	___(1)	___(2)	___(3)	___(4)	___(5)	1.08
3.65	j. Make it easy for you to ignore what is being taught.....	___(1)	___(2)	___(3)	___(4)	___(5)	1.11
3.23	k. Make the area more interesting although they don't teach you a great deal.....	___(1)	___(2)	___(3)	___(4)	___(5)	1.05
3.31	l. Make it difficult for the the teacher to see how much you are improving..	___(1)	___(2)	___(3)	___(4)	___(5)	1.10
3.33	m. Increase the amount of contact you have with your teacher.....	___(1)	___(2)	___(3)	___(4)	___(5)	1.01
3.00	n. Make learning less personal.....	___(1)	___(2)	___(3)	___(4)	___(5)	1.08
3.73	o. Would be sufficient to teach you the course material without additional help from the teacher.....	___(1)	___(2)	___(3)	___(4)	___(5)	1.15
4.01	p. Are a waste of time in general.....	___(1)	___(2)	___(3)	___(4)	___(5)	1.04

9. Have your teachers in BOCES used more or less films in the time since Christmas (January 1 til now) in comparison with the time before Christmas (September til Christmas)?

$\bar{x}$ 2.91

SD = 1.104

Would you say they used:

7.6% A Great Deal More (5) 21.1% A Little More (4) 38.6% About the Same (3)

19.9% A Little Less (2) 12.7% A Great Deal less (1)

10. Have your teachers in BOCES used more or less videotaped materials in the time since Christmas (January 1 til now) in comparison with the time before Christmas (September til Christmas)?

$\bar{x}$ = 2.88

SD = 1.12

Would you say they used:

6.0% A Great Deal More (5) 24.2% A Little More (4) 36.3% About the Same (3)

18.5% A Little Less (2) 14.9% A Great Deal Less (1)

11. How would you rate the quality of the videotape materials that were used in your BOCES courses this year?

$\bar{x}$ = 2.687

SD = 1.055

4.5% Excellent (5) 20.3% Good (4) 25.6% Adequate (3)

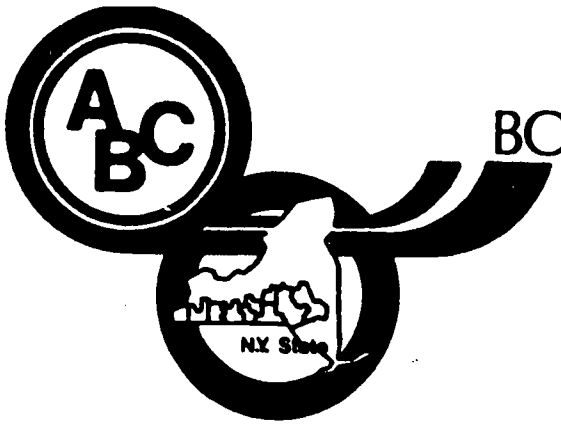
38.6% Barely Adequate (2) 11.0% Very Poor (1)

12. Comments about film and television instruction.

Appendix C

Summary of Occupational Education Course Offerings
Within the Eleven BOCES of

New York Appalachia



Appalachian BOCES Consortium

Allegany County BOCES
6 South Street
Belmont, N. Y. 14813

Broome-Delaware-Tioga BOCES
P.O. Box 1450
Binghamton, N. Y. 13902

Cattaraugus-Erie-Wyoming BOCES
Windfall Road
Olean, N. Y. 14760

Chautauqua County BOCES
P. O. Box 250
Fredonia, N. Y. 14063

Cortland-Madison BOCES
Clinton Avenue Extension
Cortland, N. Y. 13045

Delaware-Chenango-Madison-Otsego BOCES
R.D. 3, East River Rd.
Norwich, N. Y. 13815

Greene No. 2-Delaware-Schoharie-Otsego BOCES
Raxmere Park
Stamford, N. Y. 12167

Schuyler-Chemung-Tioga BOCES
431 Philo Road
Elmira, N. Y. 14903

Steuben-Allegany BOCES
R.D. 2, Meads Creek Road
Painted Post, N. Y. 14870

Tompkins-Seneca-Tioga BOCES
555 Warren Road
Ithaca, N. Y. 14850

SUMMARY OF
OCCUPATIONAL EDUCATION COURSE OFFERINGS
WITHIN THE APPLACHIAN BOCES CONSORTIUM
AS OF JUNE 1975

KEY

1 - Allegany
2 - Broome-Tioga
3a - Cattaraugus - South Center
3b - Cattaraugus - North Center
4a - Chautauqua - LoGuidice Center
4b - Chautauqua - Hewes Center
5 - Cortland
6a - Delaware-Chenango - Chenango Center
6b - Delaware-Chenango - Delaware Center
7a - Greene #2 - Northern Catskills Center
7b - Greene #2 - Otsego Area Center
8 - Schuyler-Chemung-Tioga - Pauline G. Bush Center+
9a - Steuben - Coopers Plains Center
9b - Steuben - Wildwood Center
10 - Tompkins-Seneca-Tioga
11 - Schoharie
\+ - several courses are offered through BOCES at area high schools

* - as of Fall '75

	AL 1	BT 2	CA 3a	CA 3b	CH 4a	CH 4b	CT 5	DC 6a	DC 6b	GR 7a	GR 7b	SC 8	ST 9a	ST 9b	TO 10	SCH 11
Agriculture/Horticulture																
Agriculture					X							X	X			
Agriculture-Conservation												X				
Agriculture-Mechanics	X			X	X	X	X	X		X	X	X	X		X	X
Animal Care		X														
Conservation	X	X	X	X		X		X	X	X	X		X	X		
Conservation & Equip. Operation	X															
Dairy Agriculture											X					
Farm Production Management	X															
Farm Production-Mechanics												X	X			
Horticulture		X						X	X							
Landscaping						X	X					X			X	
Landscaping/Greenhouse Management						X	X					X				
Auto Trades																
Auto Body	X	X	X	X	X	X	X	X				X	X	X	X	
Auto Mechanics	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
Auto Repair (Metal Trades)												X				
Auto Service	X											X				
Building Trades																
Building Maintenance		X	X												X	
Building Maintenance & Repair												X				
Building Trades (Construction)	X		X	X	X	X	X	X	X	X	X		X	X		X
Carpentry		X			X	X*						X			X	
Electrical Trades	X	X	X	X	X	X*	X		X	X		X	X	X	X	X
Masonry		X	X*	X	X	X*						X				
Plumbing												X				
Plumbing & Heating		X			X	X			X							
Trowel Trades															X	
Business Education																
Accounting										X	X					
Advanced Office Machines	X				X	X		X								X
Bookkeeping										X	X	X				
Business Subjects						X										
Computer Programming		X														

	AL 1	BT 2	CA 3a	CA 3b	CH 4a	CH 4b	CT 5	DC 6a	DC 6b	GR 7a	GR 7b	SC 8	ST 9a	ST 9b	TO 10	SCH 11
Business Education - continued																
Data Processing	X		X		X	X	X	X	X			X			X	X
Distributive Education			X				X					X	X	X		
Key Punch Operator	X	X														
Office Machines							X					X	X	X		X
Office Practice	X		X	X			X			X	X	X	X	X		
Sales & Marketing		X														
Secretarial Education	X				X		X		X			X				
Shorthand					X				X	X	X					
Transcription					X				X							
Food Services	X	X	X	X	X	X	X	X	X	X	X	X			X	X
Health Services																
Dental Assistant		X														
Health Services			X	X	X	X	X	X	X	X	X	X				
Medical Office Assistant															X	X
Nurses Aid	X	X										X			X	X
Practical Nursing		X	X	X						X	X		X	X		
Personal Services																
Child Care	X	X	X	X				X	X			X	X	X	X	
Cosmetology	X	X	X	X	X	X	X	X	X	X		X	X	X	X	
Home Services							X									
Trade & Industrial																
Appliance Repair												X	X	X		
Drafting	X	X	X	X	X		X	X	X		X	X	X	X	X	
Electro-Mechanical Machine Repair		X														
Electronics			X		X		X					X	X	X		
Engines & Mechanics		X														
Equip. Repair & Main. Industrial									X							
General Trades															X	X
Heating, Air Conditioning & Refrig.			X		X	X			X				X	X		
Heavy Equipment Mechanics	X															
Industrial Electronics	X															
Light Industrial Equip. Repair		X														
Machine Operator												X				
Machine Trades	X	X	X	X	X	X	X				X	X	X	X	X	

	AL 1	BT 2	CA 3a	CA 3b	[illegible] 4a	CH 4b	CT 5	[illegible] 5a	DC 6b	GR 7a	GR 7b	SC 8	ST 9a	ST 9b	TO 10
Trade & Industrial - continued															
Mechanical Design												X			
Metal Fabrication									X						X
Metal Machining								X	X						
Sheet Metal												X			
Small Engine Repair							X		X						
Small Gasoline Engine Repair		X													
Tool & Die Making												X			
Welding	X	X	X	X		X	X		X			X		X	X
Vocational Orientation															
Boys	X						X	X					X	X	
Girls	X						X	X					X	X	
Others (Miscellaneous)												X			
Other Areas															
Commercial Art	X	X					X								
Fashion Design & Sewing		X				X									
Offset Printing		X													X
Reprography			X	X											

6/5/75
B.C.H.

Appendix D

Interim Catalog of

Project 31 Videocassettes

Appendix D was removed because of poor reproducibility.

Appendix E

Methodology—Questionnaire
Development and Scaling

Appendix E

Methodological Appendix
Questionnaire Development and Scaling

The following section outlines the methodological considerations in development of the evaluation instruments for Project 81. Variables covered include teacher characteristics, media utilization, perceived problems of media usage, and attitudes towards use of media in the classroom. Rationale for the inclusion of these variables in a diffusion of innovations framework is developed first, followed by hypotheses for relationships among the variables. Results of analyses are given in a section under that heading.

Teacher Characteristics

Two dimensions of teacher characteristics were examined: academic credentials and media training, and some personal characteristics. Both sets of characteristics were expected to affect attitudes of teachers towards media and actual media utilization rates.

General Educational Credentials. It was expected that teachers with higher levels of education might use media more highly and might be more likely than others to take advantage of the materials provided through Project 81.

Teachers were asked to indicate the highest level of formal schooling they had received. Education levels were categorized and ranked according to the scheme in Table 5 of the report.

Media Utilization and Production Training. It was expected that teachers with media training would be more likely to use media and to adopt the Project 81 materials more quickly. Teachers were asked how many hours of training they had received in utilization and production of film, and how many hours they had received in utilization and production of video materials.

Teacher Experience and Mobility. It was expected that teachers with a greater number of years of teaching experience might be more able to adopt Project 81 materials without upsetting their schedules. Teachers in some subject areas might also find Project 81 materials more useful than teachers in other subject areas. Teachers were asked to indicate the number of years they had been teaching and the subject areas in which they taught.

Teachers were also asked how many years they had been teaching in the BOCES in which they were currently employed. This question was combined with ones asking teachers the place of their birth and the location of their post-secondary education to assess the teacher's mobility. It was expected that those teachers exposed to several different ways of doing things through their education and occupations would be more likely to adopt Project 81 materials.

These items were combined to produce indices of mobility. The actual questions and weighting scheme for the items in the mobility scale are given in Appendix B.

Usage Profiles

Several aspects of media utilization seemed important. It was expected there would be differences between teacher attitudes and characteristics with respect to the kinds of media used and the instructional setting in which they were used.

In the pretest teachers were asked to estimate how many hours of film, videotape, and live broadcast they had used during the 74-75 school year, and how much they had used during the Fall of 1975. In the post test, teachers were asked to estimate their usage of media during the 74-75 school years and during the Spring of 1976. Usage rates were made comparable by converting them to hours per month.

Teachers were also asked to estimate the percentage of instruction time they spent in large and small classrooms and in individualized instruction, and to estimate the percentages of media usage within each of these instructional settings. These percentages were combined to yield an index of overall media use as well as a weighted index of media use for each instructional setting.

Perceived Problems of Using Media

It was expected that several variables in teachers' training and experience would affect their perceived difficulty of using film and television. These perceived usage problems might in turn affect the attitudes of teachers towards media and the frequency with which media actually are used.

Questions were written around two media usage problem areas—problems with equipment scheduling and equipment mechanics, and problems with program materials. Items were written in three-point scales running from "poses no

problem" to "a major problem." Descriptive statistics on individual items and t-tests between pre and post test responses are given in the results section.

Since a factor analysis of the pre-test data produced only one factor, the results are not tabled. Several items showed almost no variability on the pre-test and were dropped from the post test scale. These items were: reliability of equipment, difficulty of operating equipment, lack of special training in the use of media, and lack of confidence in the instructional effectiveness of media. None of these items were seen to be a problem by teachers.

Two items were added for the post test: "lack of support materials," and "increased instructional planning and preparation time." Factor analysis of the post test data produced two factors as shown in Table E 1. Factor 2 appears to deal with scheduling of both equipment and materials. Factor 1 seems to deal with the quality of program materials and their relevance for instruction. Although the items in the pre and post tests were not exactly comparable, the two factor solution on the post test may be a reflection of increased sophistication of BOCES teachers because of greater media utilization due to Project 81.

Attitudes Towards Film and Television as Instructional Tools. The attitudes of teachers towards media were expected to play a large role in the success of Project 81. Teachers with more favorable attitudes would be expected to use media more frequently once materials became available through the project and their attitudes in turn would become more positive.

Questions on these attitudes were written along a number of dimensions including: expected effects of media utilization on teachers' preparation and mode of teaching, effects of media on student-teacher interaction, and advantages and disadvantages of media as tools of learning. The 28 items included in the pre-test were scaled on five points from "strongly agree" to "strongly disagree". Factor analysis produced three factors which accounted for consequential variance as shown in Table E 2. Two of the factors seemed interpretable and their items were included in the post test. The third factor contained a confusing set of items. Items from the third factor, and those from the first two factors showing almost no variance, were dropped from the post test questionnaire.

Factor analysis of the post test data produced two factors as shown in Table E 3. The items indicating positive attitudes towards film and television loaded on Factor 1; the items indicating negative attitudes towards media loaded on Factor 2.

Items in both the pre and post test factor analyses were combined into by summing items which loaded on a particular factor rather than using score coefficients. Dependencies between the summed scales were handled h multiple regression.

Table E 1

Factor Analysis of Teachers' Perceptions of Problems in Using Film and Television (Post Test)

Item	Factor 1	Factor 2
dequate supply of equipment	.003	.585
fficulty in scheduling equipment	.036	.999
ilability of relevant programming	.720	.131
fficulty in scheduling programming	.115	.559
dated media materials	.481	.104
r production quality of programming	.503	.066
ompatibility of media with course objectives	.696	-.062
k of support materials	.729	.055
gramming unsuitable for instructional objec-ives without modification	.641	-.022
reased instructional planning and preparation time	.284	.194
Percentage of common factor variance accounted for	62.0	38.0

Table E 3

Factor Analysis of Teachers' Attitudes
Towards Film and Television
(Post Test)

Item	Factor 1	Factor 2
Increase student participation and involvement	.669	-.144
Improve student study habits	.597	.101
Increase opportunities to individualize instruction	.628	-.127
Increase the learning of skills	.622	-.125
Increase retention of information	.645	-.180
Produce simplistic thinking	.467	.110
Emphasize entertainment at the expense of learning	-.106	.513
Make students impatient in regular classroom instruction	.037	.560
Increase student reading skills	.414	.113
Favor the fast learner	.066	.420
Decrease classroom control and order	.034	.483
Student value an instructional supplement	-.061	-.049
Reduce opportunity for on-going evaluation of student progress	-.133	.499
Increases teacher interaction	.594	-.095
Increases teacher workloads	.070	.359
Makes learning less personal	-.344	.438
Provides adequate instruction without a teacher	.070	.406
Percentage of common factor variance accounted for	64.9	35.1