A study of a comparative analysis of the suitability of the audio modular and audio-visual modular instructional approaches for the continuing education of school administrators.

Robert S. Levine

University of Massachusetts Amherst

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A STUDY OF A COMPARATIVE ANALYSIS
OF THE SUITABILITY OF THE AUDIO MODULAR
AND AUDIO-VISUAL MODULAR INSTRUCTIONAL
APPROACHES FOR THE CONTINUING EDUCATION
OF SCHOOL ADMINISTRATORS

By

ROBERT S. LEVINE

A Dissertation Submitted to the Graduate School of
the University of Massachusetts in partial
fulfillment of the requirements for the degree of

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School of Education
Amherst, Massachusetts

April, 1972
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OF SCHOOL ADMINISTRATORS

A Dissertation

By

ROBERT S. LEVINE

Approved as to style and content by:

Dr. Arthur W. Eve, Chairman of Committee

Dr. Roger Peck, Committee Member

Dr. Robert Jones, Committee Member

Dr. Mark Rossman, Representative of Dean

Dr. Richard Ulin, Director of Graduate Studies
School of Education
University of Massachusetts
Amherst, Massachusetts

April, 1972

Dr. Dwight W. Allen, Dean
Dedicated to
my wife Beverly
for tolerating an
often absent husband and
for her constant encouragement
and support
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CHAPTER I

INTRODUCTION

American society has important social problems so serious in nature that chaos on a national scale might erupt if solutions are not found. Some of the outstanding problems are that of relationships between the races and the alienation and discontentment of youth. Who can offer feasible solutions to these pressing problems? According to Pharis:

Following the senseless destruction and rioting which continue to tear apart many of America's cities, we will have to put the pieces together. Thoughtful citizens are beginning to recognize that the school is the agency which can bring order out of the chaos.¹

If the school is the agency that can bring our society together, why isn't this being done? It does not appear that the schools are enlightening American society with positive leadership. Are educators adequately prepared to meet the challenges of the present and future society? Olson answers this question as follows:

"Will administrators in secondary education be ready to contend with the immense demands of the 1970's? On the basis of past practice they will have too little preparation in meeting new conditions and enlarged problems."²

It is questionable as to whether or not contemporary school


administrators are properly trained to lead in the initiation of change.

This is reinforced by the following statement:

Yet, many administrators admit they lack skill and confidence in their ability to deal effectively with people. They indicated that their training did not prepare them adequately in this area. Something needs to be done in order to provide them assistance and fill in the gaps which so obviously exist.

If school administrators are not adequately prepared to meet the needs of today and the future, what can be done to overcome this? It would be almost impossible to convince most of them to attend classes at colleges. Are there other means available for training? One way of educating schools administrators is through in-service education programs. According to Williams: "Even though he may be unable to attend regular class sessions at a college or university, he should be able to participate in such in-service training programs as one-week institutes or one-day conferences."4

In-service education for school administrators is not a new phenomenon. Universities and organizations have been involved in the preparation of in-service programs for a number of years.

Within the past ten years many developments have improved the in-service training of school administrators. Conferences, institutions, clinics, working cooperatively with administrators in field studies and disseminating new knowledge through publications, films, and filmstrips are some of the new methods being utilized.5

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5 Ibid., 51.
Unfortunately much more effort and foresight are necessary to meet the needs of school administrators if they are to become effective leaders. According to Goldhammer: "College and university respondents expressed disappointment with the in-service activities they sponsor."^6

Youth and some adults seriously question the relevancy of contemporary education; taxpayers are demanding evaluation and accountability from educators; and both students and teachers are demanding more of a role in the administrative process. School administrators need to be more sensitive to the current and future needs of society and advance solutions for important social problems.

In-Service Training

The training of leaders is taking place in fields other than education. Business has been developing in-service education programs to train its leaders. Dauten reports the following information:

So it is that firms increasingly are organizing executive schools of their own or are asking the universities to organize executive programs just for their own people. General Electric Company, for example, deemed it necessary to set up a school and campus on what had been the Harry Hopf estate. American Telephone and Telegraph Company maintains management programs at Asbury Park for its top and near top executives.\^7

Serbein describes what IBM is doing in regard to in-service training: "The management development programs provided by IBM may be classified

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under the headings of executive development, management study and administrative study."

Business is training leaders to meet the needs and demands upon them in the present and future. According to Bellows:

Executive training and development will back even further away from the old lecture style and move toward case study, in-basket and simulation games, and role-playing, which give the manager the feel of countless kinds of situations. The goal here will not be to teach specific techniques but to help him develop skill at decision-making, problem-solving and situational leadership.

Development of Instructional Modules

The Florida State Department of Education realized the need for the development of in-service programs for practicing school administrators and contracted for the development of a program with The Center of Leadership and Administration, at the School of Education, University of Massachusetts. A series of audio modular instructional packets were designed emphasizing a single concept through written material, simulation exercises, and audio tape recordings. This approach was designed to provide schools with an on-going program which would give practicing school administrators an opportunity to obtain leadership skills at their own rate of learning and within their own environment.

It was planned that five modules would be developed; one module on the decision-making process and four on communication skills. The first two modules, (1) Barriers to Effective Two-Way Communication and (2)

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Feedback and Group Evaluation were field tested at the 1970 Florida School Staffing Conference. Supportive feedback for the modular approach was received. In addition to this, the three modules (1) Basic Elements of the Communication Process, (2) The Use of Supportive Feedback, and (3) The Helper-Helpee Relationship were field tested with fifty school administrators, secretaries, and teachers in Massachusetts in 1971. This study by Herriman found that the feedback for the modular approach was supportive but also found that a felt need existed for more audio-visual material. 

However, the addition of more audio-visual material may weaken the "ease and convenience factor" of the modular approach.

There is little question that the school administrator needs additional training in order to meet the challenge of today and the future. Unfortunately not enough has been done in the development of in-service programs to meet these needs. The Florida State Department of Education and the Center of Leadership and Administration, at the School of Education, University of Massachusetts have developed one component of an in-service development program.

This study will be based on testing the suitability of using the audio modular instructional approach in comparison to the audio-visual instructional approach as possible approaches that would be part of a comprehensive in-service development program for school administrators.

Statement of the Problem

A major objective of this study was to compare the suitability

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of using the audio modular instructional approach with an audio-visual modular instructional approach for introducing staff development concepts and skills to school administrators. Also to determine the suitability of the audio modular and audio-visual modular approaches as alternative methods of in-service education for school administrators.

The purposes of the study were:

1. Through the utilization of a post test-only non-equivalent control group quasi-experimental design determine the cognitive changes that took place as a result of participating in the audio modular packet or audio-visual modular packet.

2. Through utilization of a written questionnaire with "open-ended" and "closed" questions, determine the attitudes of the participant toward his experience with the modular approach in which he participated.

3. Through utilization of a semantic differential scale and through questions designed to establish a rank-ordering system, determine the participant's attitude toward the audio modular approach and the audio-visual modular approach as each compared with other methods of in-service training for school administrators previously experienced by the participant.

4. Through interviewing a number of participants after their participation with the packets determine the attitudes of the participants toward the audio modular and audio-visual modular approaches.

5. Analysis of the data compiled from the measurement instruments
will be shown in narrative, tabular, and graphic form so that the findings are most appropriately elineated. The mathematical means, standard deviation, percentages, chi square analysis, and analysis of variances were utilized for the quantitative analysis of the study.

Definition of Terms

The following terms were defined operationally as used in this study.

School administrator--refers to a school professional who is superordinate of classroom teachers and is responsible for instructional programming, implementing innovations, assessing the abilities of others, planning, coordinating, decision-making, sharing of responsibility, and providing community leadership.

In-service programs--programs that foster professional growth by increasing understanding, developing new skills and techniques, improving present skills, initiating research, and bringing about desirable change.

Attitude--the degree of positive or negative affect associated with some psychological object.

Audio instructional module--a learning activity packet that includes an instructional audio cassette tape with narration, emphasizing a single specific concept through a series of logical and sequential experiences. The module is comprised of the following: (1) performance objectives, (2) an audio cassette tape, (3) a guidebook and selected references.
Audio-visual instructional module—a learning activity packet that includes an instructional audio cassette tape with narration and a film strip, emphasizing a single specific concept through a series of logical and sequential experiences. The module is comprised of the following: (1) performance objectives, (2) an audio cassette tape, (3) a film strip, (4) a guidebook and selected references.

Modular approach—an instructional training approach utilizing the audio instructional module or the audio-visual instructional module.

Suitability—the extent to which audio modular and audio modular instruction can be included as useful components of in-service programs for school administrators. The following criteria was used:

1. Future potential of the modules—The perception of the participants regarding the usefulness of the audio modular and audio-visual modular instructional methods;
2. Motivation and interest of the participants—Are the skills and concepts presented in a manner that will stimulate participants into electing to participate in other modules;
3. Changes of attitude—The extent that participants attitudes are changed from experiencing the modules;
4. Accomplishment of the stated objectives—The general extent that participants achieve the behavior of the performance objectives in the modules.
5. Cost of the modules—The cost of producing the audio module and the audio-visual module.

Assumptions in the Study

1. Participants would be honest and frank when answering questions concerning the strengths, weaknesses, and value of the audio and audio-visual modular instructional communication packets.

2. Participants would adhere to the directions in the packets.

3. Participants would reflect their own attitudes at the time when reacting to an attitudinal instrument.

Limitations of the Study

1. The posttest-only was used to find change effected by the modular experience. A major weakness of this design is the question of whether or not the control and experimental groups will be similar on the knowledge measured in the study, before the modular experience. Due to this fact, the findings on achievement and attitudinal changes must be viewed with discrimination.

Design of the Study

The study endeavored to determine the suitability of the audio modular instructional approach as compared to an audio-visual modular instructional approach that are designed as in-service approaches for introducing staff development concepts and skills to school administrators. A field study technique using four assessment procedures was embodied into the study. In the following sections the assessment
design that was utilized in the study is summarized.

The participants' attitudes toward either the audio module or the audio-visual packet: Each of the participants was asked to answer a number of "closed" questions on a written questionnaire after completing one of the packets. The questions pertained to the attitudes of the participants towards their experience with a packet. The questions focused on aspects such as attitudes, interest, and usefulness of his own learning toward the technical arrangement of the packets.

The participants' attitude toward the audio modular and audio-visual modular approaches compared to other in-service approaches and compared to each other: The participants were asked to rank in order six types of in-service approaches. Included in this group were the audio modular and the audio-visual modular approaches and included also were blank spaces for the participants to write in any approaches not listed if desired. There were two different methods in which the data was analyzed. The first method was to find out the number of times each approach was given a definite rank value. The second method was to weight the responses and determine the weighted mean for every in-service type in the group.

The participants were asked to utilize a semantic differential scale to react to three concepts: (1) audio modular instructional unit as an alternative type of in-service training, (2) audio-visual modular instructional unit as an alternative type of in-service training, (3) in-service programs for school administrators in which you have participated (not including the audio modular or audio-visual
modular approach). Mean polarity scores were found for components of potency, evaluation, receptivity, activity, and miscellaneous. The mean scores for the three concepts were statistically analyzed for variance to determine if the mean score differences were statistically significant.

The cognitive changes: The posttest-only non-equivalent control group experimental design was used to determine the cognitive changes that took place as a result of experiencing an instructional module. An achievement test designed to incorporate the objectives of the modules was administered to the participants of both experimental groups and the control group. The differences in the mean scores between the three groups of participants were analyzed separately.

Treatment of the Data: A Summary

The data compiled from the measurement instruments was analyzed and shown in narrative, tabular, and graphic form according to the data compiled so that the findings were most appropriately delineated. The data in the study was analyzed so that the responses to the questions in the study were impersonal, objective, and anonymous.

Study Population

The study population was composed of three groups: the two experimental groups and the control group. One experimental group of the study was comprised of forty individuals who experienced the audio-visual modular instructional communication packet. The other group of the study was comprised of forty individuals who experienced the audio
modular instructional communication packet. The control group was comprised of twenty-eight individuals who did not experience a module. The individuals in the experimental groups and control group included practicing school administrators, teachers, school secretaries, and wives of school administrators.

The field testing of the packets and the evaluation instruments were given to the individuals for them to experience and complete on their own.

**Significance of the Study**

School administrators hold an important position in society and increasingly are being confronted with its unsolved problems. A need for more meaningful in-service programs has surfaced. Professional organizations and universities are involved in the research and development of in-service training programs for school administrators. However, a search of the literature indicated that most of the existing in-service programs for school administrators are not designed to train school administrators to adequately solve future problems of the schools and society.

In-service programs that are more meaningful, accessible, stimulating, and practical are needed to train school administrators. The audio modular and audio-visual modular packets were designed as components of a comprehensive in-service program with these factors in mind.

Business is also involved in the development of more meaningful in-service training programs for its leaders. One such program that has been developed is described as follows:
Executive Action Simulation is a highly competitive business game played by management teams. As a member of your team you will make decisions affecting the success of your company. The decisions will be made in a realistic atmosphere following a set of rules which resemble the economics of business.\(^{11}\)

An important aspect of this study is the evaluation of the audio modular and audio-visual modular packets as instructional techniques. The information collected and analyzed determines the development of future modules. A significant factor in this study is the involvement of the school administrator in projecting future in-service programs to meet his perceived needs.

**Organization of the Dissertation**

Chapter I of the dissertation consists of the problem, its significance, the general design of the study, and the assumptions and limitations. In Chapter II a review of the research and literature related to in-service and pre-service training of school administrators and the assessment problems and approaches of training. Chapter III describes a description of the background, development, composition, and field testing of the units. Chapter IV presents a detailed description of the methodology used in the study. Chapter V is a comparative analysis of the data collected during the field study. Chapter VI summarizes the dissertation, makes conclusions, and recommendations.

CHAPTER II

REVIEW OF RELATED RESEARCH
AND RELATED LITERATURE

This study was primarily concerned with determining the suitability of using an audio modular instructional communication packet as compared to an audio-visual modular instructional communication packet designed as in-service approaches for school administrators. Included in this chapter is literature pertaining to in-service approaches for the training of school administrators and descriptions of techniques designed to assess training programs. This chapter includes: 1) in-service training of school administrators from post World War II to 1962; 2) The AASA Commission on In-service Education for School Administrators; 3) a survey of contemporary in-service programs for school administrators; 4) research studies on in-service training for school administrators; 5) managerial in-service training in the field of business; and 6) the assessment of training.

In-service Training of School Administrators from Post World War II to 1962

After World War II, public interest began to arise for improved schools and better trained school administrators. This interest was due primarily to increased elementary enrollment and increased interest in adult education. The Kellogg Foundation reported that the times demanded the best education that could be obtained. This meant that the school administrator had to become an educational leader in order to
provide leadership.\(^1\)

However, there were few comprehensive in-service training programs for school administrators before 1950.

The in-service opportunities for school administrators prior to 1950 were limited to "professional magazines, publications coming from professional associations, annual conventions, consultation from state departments of education, and from various kinds of on-the-job extension courses conducted by colleges."\(^2\)

A number of professional organizations and other groups joined together to assist school administrators in studying their problems and in redefining their roles. The most important of these organizations in this project are the W. K. Kellogg Foundation, the American Association of School Administrators, the National Conference of Professors of Educational Administration, and the Council of Chief State School Officers.\(^3\)

Five regional conferences were held throughout the country. The first phase of the project was to identify and define the major problems facing school administrators and suggest courses of action to take. It was found that a need existed for the study of the changing role of

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\(^3\)Kellogg, op. cit., pp. 10-11.
school administrators and for in-service education for them. The conference found that there was a great need for in-service training for practicing administrators.  

A second phase of the project was started after the first phase was evaluated. In the second phase, eight regional university training centers were set up to initiate pre-service and in-service demonstrations and experiments and coordinate activities of the involved institutions in order to disseminate ideas to school administrators.  

During the period from 1950-1960, a number of studies were done that were associated with training programs for school administrators. Farquar stated that the generalizable concepts and modes of inquiry in the social sciences utilized in the late fifties and early sixties might have been an important period of development regarding professional preparation in educational administration.

A study completed by Adolph Unruh on the perceptions that practicing school administrators held regarding effective training programs for potential school administrators indicated that: 1) most school administrators need more than one year of graduate schooling; 2) more

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4 Kellogg, loc. cit., p. 12  
5 Ibid.  
study should be focused on academic work associated with administrative work; 3) specialized training in the various areas of administration is needed; 4) specialized training should take place for individuals preparing for the job of superintendent.

AASA Commission on In-Service Education for School Administrators

The American Association of School Administrators, in 1962, established a special Commission to report on the continuing education of school administrators. This commission was to find ways of providing help to superintendents faced with many different problems including the need for broader professional knowledge and skills.

The commission had decided that in-service programs for school administrators had to be planned by those who were involved and initiated only in school systems ready to accept these programs.

It stated that the in-service programs should be simply organized, draw on a wide variety of resources, not be limited in scope, and tailored to fit the situation.

The commission also stated that it was important that personnel involved in programs should be capable and knowledgeable in working with people.8

A survey was sent by the Commission to approximately two hundred and fifty educational leaders in the United States including leaders of state administrative groups and boards of education, and schools of

higher learning to determine the number and types of in-service programs that were being conducted. The commission reported on selected types of programs at the various levels. The in-service program of Indiana University was described in detail as a representative program of institutions of higher learning because its components were similar to programs at other universities. Additionally, specific parts from several other institutions of higher learning were included in the report. Included in the Indiana University program were extension classes, surveys, workshops, consultant services, and publications.

The Division of School Administration worked closely with the State Department of Public Instruction and staff members became individually involved with many of the educational associations in Indiana. Through this involvement the staff of the Division of School Administration established rapport and communication with practicing school administrators. 9

The School of Education, Harvard University sponsored an Advanced Administrative Institute which had developed because of need by practicing superintendents.

Another unique program was a series of self-study practicums sponsored by the School of Education, University of Miami and the Dade County Public Schools in a cooperative effort. A school principal was the leader of each practicum with a university professor as consultant.

A series of institutes designed to increase the administrator's knowledge and understanding of the social sciences were sponsored by

9 Ibid., p. 80.
the University of California.

Michigan State University sponsored an Interinstitutional Workshop to provide school administrators with the opportunity to have discussions with distinguished scholars and leaders.\(^10\)

The Commission found that in-service programs of the state school board associations stressed cooperation with state associations of school administrators, universities and colleges, and state departments of education through conferences and published articles. It also determined that state associations of school administrators were now becoming involved in the professional aspects of school administrators. One type of program sponsored by state associations was the Area Study Group program. The Area Study Group was described as follows:

**Area Study Groups.** The Texas Association of School Administrators and the Texas Education Agency were working together in a state-wide project for the improvement of school administration. This project was begun in 1955 by dividing the state into 28 work-project areas. In each area, there was an organization of superintendents to direct such activities as summer conferences, workshops, study groups, and a state-wide curriculum study. Services of consultants from colleges and universities, strong public school systems, and the Texas Education Agency were utilized. Publications produced included 10 study guides for school superintendents, guides to instruction in 10 subject areas, and a handbook for school board members.\(^11\)

\(^{10}\)Ibid., pp. 90-91.

\(^{11}\)Ibid., p. 94.
It was found by the Commission that cooperative efforts between the state departments of education and institutions of higher learning had taken place in sponsoring workshops, conferences, and institutes for school administrators.

One such program was the Educational Conference Board composed of a number of educational associations in the state of New York. Any board member could bring before it any educational problem or project.

Another program was a series of joint conferences in the state of Georgia sponsored by the State Department of Education and the Georgia Association of School Superintendents.

The Tennesse State Department of Education worked closely with the councils for school superintendents, principals, system-wide supervisors, and local attendance teachers for cooperative studies.

A program of the Oregon State Department of Education was the sponsorship of a series of curriculum development workshops to strengthen administrative leadership.

Also the Oregon School Board Association and the Oregon Association of School Administrators had sponsored a series of school planning conferences related to school-plant planning and development.12

In-service programs for school administrators were found by the Commission to be in operation in both small and large school systems. The smaller systems, in most cases, usually utilized outside programs. These programs included paid attendance at national, state, and regional meetings, courses offered by higher institutions of learning for credit

12 Ibid., p. 99.
and often paid for by the school district, use of outside consultants, and subscriptions to publications.\(^{13}\)

The Commission found that the programs in the larger systems were extensive, and that the larger systems were greatly involved in regional, state, and national in-service programs.

The Flint Graduate Center for Community School Leadership was organized in 1954 as a cooperative effort between the Flint school system and Eastern Michigan University to prepare educational leaders. The community was used as an experience laboratory and all administrators in the Flint school system were required to attend. An M. S. degree at Eastern Michigan could be earned through the program.

Another program sponsored by the Flint school system was the Leadership Training Seminar in cooperation with the University of Chicago Industrial Relations Center. Included in the seminar were leadership techniques, communication skills, and management-employee relations for business, industrial, and educational leaders.

The city of Chicago established an administrative internship project involving the Chicago public schools and local universities as part of a doctoral program. In this program a candidate interned in the public schools and a university.\(^{14}\)

The Commission concluded that there were a vast range and variety of in-service programs for school administrators under way. However, it

\(^{13}\)Ibid., p. 101

\(^{14}\)Ibid., pp. 101-103.
also concluded that only a small number of school systems were involved in worthwhile programs and that these school systems were the stronger ones.¹⁵

¹⁵Ibid., pp. 104-105.
Contemporary In-service Training Programs for School Administrators

There appears to have been little change regarding in-service training programs for school administrators from 1952. The content of current programs offers emphasis on humanistic and inner-city concerns, but the techniques utilized by the professional associations, state departments of education, and school districts appear to have remained as before. However, two additional content areas being emphasized are: 1) the administrative techniques of planning, programming systems; and 2) participation in school administration of the humanities.

It appears that institutions of higher learning have not, for the most part, made a concerted effort toward developing creative in-service programs for school administrators. Howsan reports on the status of university in-service programs:

I am led to venture the expression of the feeling that the overall picture, with relatively few exceptions, is one of sporadic activities conducted in rather traditional patterns...There was little evidence of any ferment in the area of in-service education. Few responded to the request for information about any new development in prospect. Experimentation may be implied in the reports of some other institutions, but it certainly is not emphasized. One gets the impression that we are, by and large, sitting on our collective hands at a time when we can ill afford to be warming our hands in this fashion. 16

Howsan's report is substantiated by the results of a survey involving eighty-seven colleges and universities in 1970 by Becker. Becker found that only twenty-three percent of the colleges and universities surveyed had a formal in-service program for principals.

A convention or meeting of a professional association is used frequently for in-service training. Unfortunately, because of the large number of participants and time limitations, very little in-depth in-service training can be expected. However, the Association for Supervision and Curriculum Development and the National Association of Elementary School Principals are providing typical in-depth seminars during other conventions.

A new approach to in-service education by the professional associations is the National Academy of School Executives (NASE), sponsored by the AASA. Knezevich reported that the NASE approach is similar to the American Management Association seminars and the national war colleges. It was designed to provide an opportunity for school administrators to attend relevant seminars without lengthy interruption from their duties.

The academy, in 1970, had 863 school administrators as participants in sessions. The majority of these administrators, 74 percent, were

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either superintendents or assistant superintendents. There is no school used primarily for the training of principals.

In-service programs sponsored by state departments of education are in operation but often focus on the technical matters associated with state programs. In addition, Becker\(^1\) surmised from his survey that principals lacked confidence in the professional knowledge held by state departments of education staff.

A survey of the literature on the in-service training of school administrators by this writer indicated that little was being done toward the in-service training of principals. A survey conducted by Piele\(^2\) in 1968 found no comprehensive in-service programs at the local level.

Becker describes the plight of elementary school administrators in the quest for in-service training:

> The adequacy of the services available to elementary school principals is questionable. The principals' own associations do not appear geared to give assistance, or to offer the specific kinds of aids which are needed...Nationally as well as on the state and local levels, the associations tend to deal with generalized problems in their professional activities. State departments of education appear to have some concern but generally lack the resources to render the specific assistance desired...Although the state departments provide some in-service programs, with few exceptions these programs involve disseminating information which would be of

\(^{1}\)Becker, op. cit., 1970.

value to the state department and the accomplishment of its objectives. Universities offer few means of assistance other than what is made available through formal graduate programs. In less than a handful of states are systematic and consistent in-service programs provided, but even these not not requirements for maintaining either contracts or certificates to practice. Few school districts seem to enforce regulations for maintaining currency of knowledge and fewer school districts actually develop their own well-devised programs that particularly identify their needs.  

At this time it appears that the school principal has to provide for himself regarding education. There are no originizational programs available presently for the in-service training of school principals, although several have potential for providing programs in the future.

Research Studies on In-Service Training for School Administrators

There exist only a limited number of research studies on in-service education for school administrators. Studies are increasing rapidly, focusing on the need of continuing education for school administrators, forecast of innovative need, and new or existing practices of in-service education.

An important series of studies on in-service education for school administrators are studies conducted by Ogletree and his associates  


at the University of Kentucky from 1960-1964. These studies sought to determine the effects of college personnel teams assisting school administrators in routine tasks.

The investigators concluded that when school administrators receive part of their graduate education on-the-job rather than in college classrooms, seminars, or conferences, the educational programs in their schools improve more rapidly and are more permanent. Also that educational opportunities improve for the students when college staff members work on school problems with a team of school administrators in the administrators' school district.

The studies proved that in-service education involving all school district administrators instead of only a few administrators is necessary where problems are district-wide. They also proved that conclusions from colleges should become involved in specific school problems because both the school administrators and college consultants develop new problem-solving skills. 23

Another series of studies by Ogletree and his associates 24 took


place from 1964-66 in conjunction with the Cooperative Research Program of the Office of Education. There are a number of conclusions and limitations from these studies. It was concluded that local school or school districts offer an opportunity for the development of meaningful in-service programs for school administrators; however, the financial expense and consultant time required for such program limits such opportunities.

A second conclusion pertaining to these studies is the importance of the development of a local administrative team which can learn from the college staff. A limitation to this administrative set-up is the limited degree of learning which can take place from the college staff.

A third conclusion from the studies is that a college staff can assist the local school administrators in the problem-solving of local problems and provide growth to the local administrators while doing this.

Another conclusion of these studies is that the college staff can provide a very effective in-service program for the local administrators. However, the local staff could best utilize the college specialists on an on-call consultive basis for short-range operations, because it takes considerable time for a college team to familiarize itself with the local system.

Still another conclusion from the studies is that graduate students in school administration have good opportunities to learn. One limitation is the time factor that graduate students have in their schedules. Another limitation is that practicing school administrators have little
time to provide learning to others.\textsuperscript{25}

The research data collected and the experience received from work on the project by the project staff convinced them that in-service education for school administrators is necessary for effective change to take place in the schools.

A number of different studies have been conducted to analyze the effects of different approaches for school administrators. One such study was sponsored by the University of Florida during the 1956 academic year in which a two semester in-service leadership training course was presented to thirty-four principals. The course was designed to determine, within the academic year, if the operational behavior patterns of the principals changed in the democratic direction and the effect, if any, of the training course of the principals on the attitudes of the teachers, students, and parents.

It was found that the operational behaviors of the principals after the leadership course was perceived by them as having changed. However, the teachers did not perceive the principal's patterns of behavior as having changed. In addition it was found that the teacher attitudes and student attitudes did not change. The parents appeared to have had less favorable attitudes toward the school after the leadership training.

\textsuperscript{25}Ibid., p. 7.
of the principal but the change was not significant.  

Another study conducted in 1959 by Luckenback was designed to determine the effect that an in-service training course for principals would have upon their operational behavior patterns and their attitudes regarding teachers, students and parents.

Thomas conducted a recent study to find out the following:

1) Whether a five-day interpersonal relations laboratory changes the elementary principal's behavior in working with his staff; 2) does the five-day laboratory change the socio-emotional climate of the school?

The experimental group consisted of fourteen elementary school principals who were among pre-registrants for the laboratory. A matched-pair group of elementary school principals made up the control group.

The study findings indicated that the principals in the interpersonal relations laboratory changed in certain behavioral aspects with their staff. Increased morale developed among the principals after the laboratory experience.


27 Ibid., pp. 937-938.

These findings supported the utilization of laboratory training as a means that can effect change in the relationships between elementary principals and their teachers.

A very recent study by Robinson centered on the modifying of school administrator behavior due to a human relations training program. Robinson found that the administrators who participated in the human relations training program had changed their perception of their administrative effectiveness and had changed their ability, in a positive manner, to predict accurately on the School Survey. The control group, in comparison, regressed slightly in this ability.

In addition, it was found that the experimental group was different in a positive direction according to the Purdue Rating Scale, in comparison to the control group which was not perceived as changing from pre- to post-test.

Green recently completed a dissertation entitled "The Effects of a Task-Encounter Workshop on the Administrative Staff of a Public School System." The study was designed to determine the effects of a group task-encounter workshop on the attitudes of school administrators of a school system. The results of the study indicated no significant change.


In the narrative portion of the study it was pointed out that the group unanimously decided to hold all meetings according to an encounter format because they felt that the encounter activities had resulted in better communications which led to better methods of problem-solving.

Another important point mentioned was that after two years, 11 of the 14 participants had changed their administrative position. It was noted that all of the participants who were promoted had consistently expressed anti-encounter feelings while those who had moved or had been demoted had expressed positive feelings toward the encounter meetings.

A study that appears to be closely associated with the present study has recently been conducted by Sparks and is entitled, "A Pilot Study of the Suitability of an Individualized Program in the Continuing Education of School Administrators." This study was designed to determine the suitability of disseminating information to the practicing administrator through a communication system utilizing an individualized, programmed, audio-visual medium.

Involved in the study were a target audience survey, the development of two programs based on the survey results, the dissemination of the programs to school administrators, and the determination of the suitability of the programs. The programs were comprised of a sound film-strip and program booklet.

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Suitability of the information system was measured as follows:  
1) effectiveness of the program as a learning device; 2) system acceptability by school administrators; 3) school administrator acceptability of interrelationships of program design and content; 4) feasibility of program based on cost analysis.

The following are findings of the study: 1) learning took place; 2) over three-fourths of the school administrators found the program beneficial; 3) the programs were presented in an understandable manner; 4) over two-thirds of the school administrators who started the programs remained interested and all found them understandable; 5) the programs were rated from significantly higher to equal in comparison to other sources of information by the school administrator; 6) comments suggested that the system depended on the functioning of equipment; 7) more than two-thirds of superintendents, little less than one-half the assistant superintendents, and one-half of the principals favored the audio-visual programs over other types; 8) production costs were economically feasible if mass produced.

Probably the most important study relevant to this study was very recently completed by Herriman. This study focused on testing the suitability of utilizing the audio instructional approach as one possible approach in a comprehensive in-service training program for school administrators.

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The purposes of the study were:

1. Through the use of a field testing approach, have sixty individuals participate in one of the three audio modular units or sets of units which have been developed. Twenty individuals participated in one of each of the three units or sets of units.

2. Through the use of "closed" and "open-ended" questions on a written questionnaire, determine the participant's attitudes toward their experience with the modular unit.

3. Through the use of questions soliciting a rank ordering process and through a semantic differential scale determine the participant's attitude toward the audio modular approach as it compares with other forms of in-service training for school administrators.

4. Through the use of a post-test-only non-equivalent control group quasi-experimental design determine the cognitive and attitudinal changes which took place as a result of participating in the audio modular unit.

5. Through observing the individuals as they participate in the modular units, and through interviewing a number of the participants after their experiences with the units, determine the attitudes of the participants toward the audio modular approach.

6. Through an analysis and synthesis of the data develop conclusions and recommendations as to the effectiveness of the existing modules; the refinements which should be made in these modules; and the suitability of the utilization and further development of the audio modular instructional technique for in-service training of school administrators.

\[\text{Ibid., pp. 11-12.}\]
The study population for the study consisted of: two separate groups; the experimental group and the control group. The experimental group for the study were 59 of the sixty individuals who participated in the audio modular units during the field testing of the units. These individuals were from Florida, Massachusetts, Georgia, and Washington, D. C. They included school administrators, teachers, school secretaries, and wives of administrators. The control group consisted of 46 members who had not had the opportunity of participating in the modules at the time they responded to the assessment instruments. The members of the control group were from Massachusetts and Washington, D. C. They included school administrators, school secretaries, and teachers.

The field testing of the modules was conducted in two different ways. For a portion of the study group the modules were completed in small group settings with the investigator being present. For the remaining portion of the study the modules and evaluation instruments were sent to the individuals for them to complete on their own. At least one fourth of the study group completed the study in the latter manner.\(^{34}\)

A unique factor in the study was the distinct educational units involved. Cooperative planning and development of in-service programs between a state department of education and a university is not uncommon; it is less usual, however, when two different states are involved. A

\(^{34}\text{Ibid., pp. 100-104.}\)
major factor impinging on this study was the geographic locations. This limitation necessitated that representatives from the University of Massachusetts travel approximately three thousand miles for on-site field testing.³⁵

Two modules utilized in the study were designed to include all information and directions needed in order that the participants could achieve that stated goals of the modules. The objectives stated what the participants should be able to do after experiencing the modules.

The rationale was included in the modules to justify the acquisition of the skill.

All of the materials that were needed to complete the suggested activities in the modules were included in the modules or described.

The procedures in the modules were designed in chronological sequence for the participants.

The evaluation activities were designed to assess the participants after their modular experience in order to obtain feedback as to the feasibility of the future development of the audio instructional modules.³⁶

Herriman³⁶ found that no conclusion could be reached regarding the suitability of the audio instructional modular approach as an alternative in-service program for presenting selected concepts and skills to school administrators. A question pertaining to cognitive and attitudinal changes as a result of the modular experience had to be answered.

³⁵Ibid.
³⁶Ibid., pp. 89-90.
In addition the determination as to whether or not administrators would take time from their duties in order to experience modules had to be found.

A number of minor conclusions were reached in the study. One conclusion was that the participants perceived the audio modular approach experience as interesting and exciting. Another conclusion was that the participants perceived that the audio modular approach was as good or better than other forms of in-service training for school administrators. A third conclusion was that a major strength of the audio module was the ease and convenience of the design. It was found that a major weakness of the audio modular approach was the lack of variety of audio-visuals.\(^\text{37}\)

\(^{37}\)Ibid., pp. 197-198.
Continuing Education in Business for Management

In the field of business, professional corporations, professional organizations, and universities are involved in continuing education training programs for management. Riegel reports:

In recent years a number of leading American companies have shown increasing interest in the self-development of their executives and technical personnel. There are a number of reasons for this interest. The companies believe that the continuing development of their key people can improve their operations and their earnings, can keep these people adaptable to changing needs and circumstances, and can assure that they will be succeeded, upon retirement, by equally capable or even more capable men.  

The American Management Association is a professional organization for managers and has been involved in management education for forty-seven years. Its continuing education program for management includes courses, seminars, and briefing sessions.

Universities are becoming increasingly involved in the development of continuing education programs. Bond, Leoba, and Swinyard stated that there is increased activity of business school alumni groups. The leading business school are making a greatly expanded effort to provide training to the mature business executive.

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It appears that the manager of the future will face problems similar to those of the school administrator of the future. Desatnick reports that managers must continue their personal development so they will avoid obsolescence. The job of manager has become more complex due to the information revolution, the urban crises, and international influences.

According to Saline, management practices, techniques, and philosophy need to harmonize with new personal and societal values. Interpersonal skills must be developed so that managers can deal more effectively with conflict. Also new leadership styles must be developed that are more appropriate to the values of society and least directive in nature.

Many managerial in-service training programs are designed to prepare managers to develop an understanding of human relations. Desatnick states that sensativity training started after World War II with the National Training Laboratories and has become a popular management development technique.

These programs usually run from one to three weeks and are designed to help the participant to understand himself better and to become more sensitive to others.

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42 Desatnick, op. cit., p. 108.
Bellows, Gibson, and Odiorne believe that the emphasis of in-service training for managers will be upon situational thinking. They feel that the situational manager will be more sophisticated in understanding people and that companies will retain existing managers in the behavioral science skills.

There is criticism in the design of existing in-service training programs for managers. There are few business organizations, according to Desatnick, that realize that the manager development process affects and is affected by every significant business activity.

Kastens is concerned with the efficiency of the management development process.

Whatever the mechanism involved, the empirical fact is that the vast majority of managers who have read the books, sat in the seminars, participated in the workshops are effectively managing very much as they would have 25 or even 30 years ago. The cost/benefit yield must be low. With the increasing demand for numbers of managers and the diminishing tolerances imposed on management by the rapidly changing social economy, there are massive incentives to improve the efficiency of the management development process.

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44 Desatnick, op. cit., p. 110.

There is also a concern relating to the structure of management development programs. Yeager states that behavioral engineering is required to improve management development programs. He believes that behavioral objectives must be stated and that trainee behavior relative to the objectives should be assessed. Also that reinforcement techniques must be used to bring about the desired behavior.

Survey of Current In-Service Programs for Business Managers

There are a number of different kinds of in-service training programs in operation managers. A very successful training technique utilized by business is the management game. This technique is described by Gerstenfeld and Maynard as follows:

A management game may be described as having the following characteristics:

1. A conflict of interest is represented to involve the participants actively.

2. The participants assume an active role in contrast with the traditional learning experiences found in other training devices.

3. The participants have some alternatives from which to choose and typically have some control over events.

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4. The individuals must make decisions; often the decision are made by a group and the individual must function as a team member. 47

Many important business organizations are using management games in formal and informal training programs. Gerstenfeld and Maynard 48 reports that Eastern Airlines uses the "Podco System Exercises" to demonstrate the planning, organizing, directing, and controlling aspects of an organization.

The "Chevrolet dealer I Practicum" is used by General Motors with Chevrolet dealers as an effective application tool for management concepts.

IBM has an extensive continuing education program for its managers. It is comprised of a number of courses offered during normal working hours and in the evening. Serbein 49 lists some of the courses as follows: Basic Manager Training, Communications, Conference Leadership, Engineering Conferences for Manufacturing Managers, Industrial Organization and Management, Interviewing Techniques, Management Seminars, Management Techniques, Motivation and Operations Improvement, Data Processing Orientation, Economic Fundamentals, Effective Writing Techniques, Employee Counseling, Executive Speech I, Human Relations, Laboratory Orientation, Plant Organization and Function, and Product Control.


48 Ibid.

A training program conducted by American Airlines consist of a five-day course presented at a centralized training site and is called the Managerial Laboratory. Mather and Shuttenberg\(^50\) reported that the learning laboratory was designed so that managers could experiment with a managerial model related to confrontation of conflict, openness, and trust.

American Standard operates an on-the-job managerial program that is based on work performance. Wikstrom\(^51\) describes the program as that of establishing expected results, recording the actual results, and analyzing any variances that might occur so that each manager can improve in his weak areas.

In many of the Bell System companies, management appears to be focusing on organizational development. A study on management and


development conducted by Conway and associates\textsuperscript{52} of the New England Telephone and Telegraph Company states that it is a "family style" type of training in which supervisors from several levels in the organization who work together, train as a team in areas such as leadership development, joint target setting, and intra-team effectiveness.

Trainners from the general personnel group provide in-house consultant service to the teams.

A new development involving the assessment of managerial talent is the establishment of the Assessment Center. It is already in use by American Telephone and Telegraph, Ford, General Motors, General Electric, J. C. Penny, and International Business Machines. According to Bray:

A Center's "situational technique," as it is called in the personnel man's jargon, can be adjusted to duplicate the demands of a specific job. In the role-playing process, traits of behavior are brought out: leadership, control, motivation, organizational ability, and talents for selling ideas, delegating authority, and operating under deadlines.

How it works. Typically, an assessment involves six candidates and two assessors. In carefully tailored games or exercises, the candidates for promotion get to try their hand at solving a production snafu, disciplining a subordinate, and selling a certain viewpoint to fellow candidates. Once exercise, called the in-basket, gives a candidate a sampling of a supervisor's paperwork sprinkled with booby traps. He must turn down a loyal worker's request for promotion, appease an irrate customer, and answer criticism of his staff from another's department head.\textsuperscript{53}


\textsuperscript{53}Douglas Bray, "Where They Make Believe They're the Boss," \textit{Business Week}, August, 1971, p. 34.
There is an important by-product pertaining to management development that can be derived from the Assessment Center.

Because line managers often help design an assessment exercise, their employers may get an added benefit. Schaffer of the IRS explains it this way: "The managers who serve as assessors have to come to judge the candidates. It helps them go back and perform their jobs more effectively."54

The American Management Association is probably the most prominent professional association for managers. The continuing management education program includes many courses presented by the association at meeting places throughout the United States with main emphasis on practice. The Management Course is one of many courses available for managers.

It consists of four one-week units designed to prepare managers to manage. It is based on practical operating experience and contains a simulation exercise in which the participant can utilize the principals and methods included in the course.55

In-company courses are also offered by AMA. These courses are designed to be conducted within a company's plant or offices and can be tailored to focus on specific company problems. The courses are taught by individuals in the company and can be scheduled whenever convenient.

Included in these courses are films, programmed instruction books, supplementary reading books, programmed instruction tests, leader guides,

54 Ibid., p. 35.

a reference library, and supplementary handout materials.\textsuperscript{56} 

Colleges and universities also sponsor managerial development programs for companies to utilize. A large number of higher institutions of learning are offering two to thirteen week management courses for lower level young people to senior executives. Usually companies select participants with top management potential.

An important point is that colleges and universities are getting involved in designing special curricula for management development programs. A review of managerial development programs in universities was published by the National Industrial Conference Board.\textsuperscript{57}

\textbf{Training Assessment}

A search of the literature on training resulted in finding that evaluation of training is mostly inadequate and that good evaluation is difficult but not impossible. Belasco and Trice\textsuperscript{58} state that even though evaluation benefits the practitioner and academician, most training efforts are still not evaluated systematically. The primary reason for this is due to the evaluation study design. Although it is extremely difficult to plan and execute a good evaluation, it is possible for the most part.

\textsuperscript{56}\textbf{How to Improve Individual Manager Performance}, A Pamphlet by the American Association (New York: American Management Association, 1971) p. 11.

\textsuperscript{57}Desatnick, op. cit., pp. 109-110.

There appear to be two major problem areas in the assessment of training. One of these areas consists of the attitudinal and organizational obstacles to evaluation. The problem of attitudes exists because evaluation is threatening to the practitioners since the evaluation plays the role of corrective agent who will help the practitioners improve. Thus, conflict will arise between the evaluator and practitioners.\(^\text{59}\)

It appears that training specialists and therapists are of the opinion that evaluation is unfair to them; therefore they resist it. Changes that they induce with regard to attitudes, knowledge, and behavior are often done away with because of other factors that are not in their control.\(^\text{60}\)

Another obstacle to evaluation has recently become serious. Individuals in organizations deem testing, questionnaires, and psychological probing as attacks on their privacy, especially when evaluators are associated with the organization.\(^\text{61}\)

\(^{59}\)Ibid., p. 9.

\(^{60}\)Ibid., p. 10.

\(^{61}\)Ibid., p. 11.
It is necessary to be familiar with the subjectives and objective approaches in order to understand the strategic problems to evaluation. The subjective approach tries to find out how the trainee feels about training by asking questions. Usually there is no special design utilized and involves less time and resources than the objective approach. In most cases the number of respondents needed are less. However, a major disadvantage is that change is evident only in the participants' feeling about the training and not in the participants' responses.

The objective approach, on the other hand, tries to identify the specific kind and amount of change that has taken place because of the training. The respondent is questioned on external subjects. The difference in responses from pre-test to post-test measures the change when used. In most instances this approach involves a design such as the before-after design or the comparative design that tries to identify with greater precision the effects of the change agent. Thus, but objective approach is a more precise method of studying change but requires a greater investment of time and resources.

There are four major problem areas in studying change, using either the objective or subjective approach. These problems are those of criterion, control, contamination, and detective work.

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62 Ibid., pp. 15-16.

63 Ibid., p. 16.
Criterion Problem

A good criterion must have a measurable statement of objectives and a measuring instrument to determine whether the objectives have been fulfilled. However, there are four difficulties that have been identified in criteria development. One such difficulty is that the training objectives are vague. This means that unless the expected results are known, it is impossible to use evaluation methods that are appropriate for a training program. In addition, it is often difficult to find the specific change for which the training is designed.

The question of whether the objective of training is individual or organizational change is the second difficulty in criterion development. Training programs, for the most part, describe their training objectives in terms of changes in the individual because of the difficulty in measuring organizational effectiveness.

A third difficulty in the development of a criterion pertains to the length of time required for training objectives to be achieved. Kirkpatrick believes that an immediate training objective can be an immediate objective, changes in job behavior an immediate objective, and production, turnover, absenteeism, and morale changes an ultimate objective. Also, a study by Fleishman indicates evaluation should take


65 Edwin Fleishman, Edwin Harris, and Harold Burt, Leadership and Supervision in Industry, The Ohio State University, Bureau of Educational Research, Columbus, Ohio, 1955, pp. 26-54.
place immediately after the training experience.

The effectiveness of a training course pertaining to change and the evaluation is questioned by some people. Belasco and Trice react to this as follows:

Education is a lifetime process. Even though the change experience itself may add few original thoughts, it may provide a stimulus to the rethinking of previously held and now ignored ideas. Thus exposure to a change experience may precipitate in some participants but not in others. It is possible, therefore, to state the expected outcome of the change experience and then to evaluate the degree to which the experience contributed to the precipitation of these outcomes.

Control and Contamination Problems

The problems of control and contamination are described as follows:

Control is necessary in order to eliminate the possibility that factors other than the change experience produce the results recorded by the criterion yardstick. The essence of effective control lies in the comparison between exposed and unexposed groups. In order to ensure the legitimacy of the comparison—that is, that the two groups are truly comparable except for the change experience—some form of measurement of both groups must be made usually before the change experience takes place. This measurement, which is essential to establish comparability, introduces many additional factors to further contaminate the result. Thus, control inexorably brings with it contamination.

There are three known sources of contamination. One possible way contamination might arise is when the participants become sensitized

66 Ibid., p. 21.

67 Ibid., p. 22.
by obtaining the criterion measurement before the change experience, and thereby affect the change results. Richard Solomon describes an example of this contamination:

We feel that the pre-test operates directly upon the effectiveness of the training or interacts with the training process. That is, there is a great possibility that merely taking a pre-test changes the subject's attitude toward the training procedure. Or it may conceivably change the set or attentional factors important to the effectiveness of training. Thirdly, it may actually change the manner in which the subjects perceive the training material. 68

This indicates that an awareness of the subject during the change experience may arise if a questionnaire or interview takes place before training.

Another source of contamination is time passage and uncontrolled events which occur.

A third source of contamination is the collectors of data and the ways in which the data is collected.

A design recommended to control possible contamination is the Solomon Four-Way Design. 69 The process for implementing this design is shown in Figure 1.


A purer change-agent effect can take place by comparing the post-test means for groups B and D which are not contaminated by a pre-test. 70

There are a number of advantages and disadvantages to the four-way design. 71 Many of the disadvantages are due to the operational problems of the design.

Belasco and Trice state the following on the four-way design:

Upon reflection, it seems that the Solomon design arose in response to the instrument contamination problems associated with the traditional evaluation design. Rather than dealing with the overt symptoms of the problem, however, it might be more profitable to examine its root course and question the utility and necessity of the pre-test itself. If the pre-test could be eliminated, it would obviate the basic need for the four-way design.

Presumably, the pre-test is necessary in order to establish a starting point from which to compute change. The assumption is that individuals will vary in their initial attitudes, knowledge, and behavior. In comparing the results of two groups, one trained and one untrained control, if the researcher does not know the starting points on his criteria for both groups, any differences after the training may be attributable to different starting points. Yet, this information is secured at a high price. 72

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70 Belasco and Trice, op. cit., p. 31
71 Ibid., pp. 31-32 and 154-156.
72 Ibid., p. 154.
Canter et al. reviewed several studies and found that criteria considerations were similar for the two groups on the pre-test. This indicates that the pre-test may not be needed.

It is for this reason that Belasco and Trice presented the following:

In reviewing the problem there is at least one alternative to the pre-test. With large numbers of 200 or more, through random division into two unpre-tested groups consisting of one training group and one untrained control group, in all probability the sampling process will yield groups with comparable starting positions on the criteria and eliminate the need for a pre-test. The probability of drawing comparable groups increases greatly if the sample is stratified on those variables which probably lead to differential evaluation study, for instance, stratification on the basis of sex, division employed in, and type of work supervised minimized the possibility of drawing groups which would have been significantly different from each other. Stratification on certain personality traits would even further remove the possibility of drawing groups with different starting points.  

The Detective Work Problem

The problem of detective work includes such tasks as communicating to the individuals to complete the evaluation instruments and to return the instruments, finding a valid control group, and keeping the original design of the study.


74 Belasco and Trice, op. cit., pp. 154-155.
Obtaining evaluation information is an important aspect of detective work. There appears to be two techniques that can be used for the gathering of detective work; the written questionnaire and personal interviewing. One problem that exists in the preparation of effective questions is whether to use open or closed questions ask the participant to answer in his own words in a broad area of a subject. Closed questions make the participant select an answer from a set of alternatives. There are a number of advantages and disadvantages to both the open question and the closed questions. For example, an important advantage of the open question is that the participant is able to communicate much information. On the other hand, one disadvantage is that the responses are so diversified that it requires much work to sort the data. Often times it is impossible to compare the results on an individual or group basis. In addition, individuals are not always motivated to present their own ideas on the topic, and they often repress their feelings and may wish to withhold information for fear of appearing in a negative manner.\(^7^5\)

There are also a number of advantages and disadvantages to the closed question. First, the responses are not diversified so that quantification is not a problem. A properly prepared question allows for comparability of results between individuals or groups. Also a closed question has less barriers to responses if the question has specific choices and is worded properly. Unfortunately a forced response to a closed question reduces the validity of the responses because the participant may be forced to take a position or the choices do not

\(^{75}\)Ibid., p. 159.
describe his feelings.

Presented below are three summarized recommendations pertaining to implications for practical application that are applicable to this study.

The questionnaire should have a functional role as a change agent, independent or in conjunction with training. Completion of the questionnaire before the training can add to the training effect by sensitizing the trainee to seek more information. Also, questionnaires are useful in reviewing information supposedly held by the trainee.

The ceremonial aspects of training should be included because it may increase the change power of the training. It could improve morale and increase identification with the organization.

The use of an unpre-tested two-group design is the most valid for evaluation. 76

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76 Ibid., pp. 156-157.
CHAPTER III

A DESCRIPTION OF THE BACKGROUND, DEVELOPMENT, COMPOSITION, AND FIELD TESTING OF THE AUDIO MODULAR AND AUDIO-VISUAL MODULAR INSTRUCTIONAL UNITS

The last chapter described the current in-service programs and approaches available for school principals and training assessment approaches. This chapter describes the development of the audio instructional module and the audio-visual instructional module; and provides a description of the audio communication instructional module and the audio-visual communication instructional module which were tested in this study.

Development of Modules for Teacher Training—Florida EPDA B-2 Program

The Florida State Department of Education initiated the development of the modules designed for the training of teachers. "Education Professions Development Act (Title V of the Higher Education Act of 1965)" funds have been utilized by the Florida State Department to develop a performance based certification program for Florida teachers designated as the Florida EPDA B-2 Program. In this program a major thrust was the development of individualized teacher training materials designed for pre-service or in-service education of teachers. These materials were organized and packaged in the form of modular units to train teachers in specific teaching skills or concepts. Many teachers in Florida assisted the State Department in the development of the modules. The modules were designed in such a way that a participant
would be assisted by elements in the module to meet the goals of the module. The elements included in the module are the objective, rationale, materials, procedures, and evaluation.

After production of the modules, the State Department distributed them to teachers throughout Florida. The feedback received from the teachers was positive regarding the effectiveness of the modules. This positive feedback interested some members of the State Department to apply the modular approach to the in-service training of school principals.

**Development of Modules for In-Service Training of School Administrators—University of Massachusetts**

The Center for Leadership and Administration (CLA), School of Education, University of Massachusetts expressed interest in the development of the modules. An agreement was reached to develop five modular units. CLA Center examined the B-2 modules, the IBM Audio Instructional Units, and other modules of various types and decided that the IBM approach and format had more potential for in-service training packets designed for school administrators.

The IBM Audio Instructional Units consisted primarily of an audio tape and a guidebook. The guidebook was in the form of a notebook including graphs, charts, case studies, review questions and answers, and other such material. The audio tape was the primary method of instruction and the notebook supplemented the tape. Included in the notebook was an introduction stating the following: Purpose of Audio Instruction, Description of the Module, Prerequisite, Time Required,
Materials and Resources Required, and Instruction to the Participant.

It was decided by CLA Center personnel to concentrate on developing modules on Staff Development which involved human relation skills. The modules have been designed to bring about change through individual experimentation and group interaction.

The four audio instructional modules that are developed relate to different aspects of the school administrator's role in the staff development process. The completed modules are as follows:

2. Staff Development: The Use of Supportive Feedback.
3. Staff Development: The Helper-Helpee Relationship-Part I.
4. Staff Development: The Helper-Helpee Relationship-Part II.

These audio modules were designed as individualized units so that the participant can select the module that will help him improve upon the skill he wants improved and proceed through the module at his own pace. The participant can self-evaluate himself after he experiences the module.

Revision of the Audio Instructional Module-Staff Development: Basic Elements of the Communication Process

The audio instructional communication module was revised on order to be more appealing to school administrators and more potent as a method of instruction.

The general appearance of the module was improved upon. Also the technical quality and the incorporation of experienced script readers.
An additional component was included in the suggested activities section of the guidebook. This component consists of a series of communication analysis charts and communication exercises which enable school administrators who experience the module, to analyze the staff communication process in their schools. Also they have material that can be utilized to train their staff in the concept of two-way communications.

Development of the Audio-Visual Instructional Module-Staff

Development: Basic Elements of the Communication Process

The audio-visual module was designed for this study for testing the suitability of using the audio modular instructional approach in comparison to the audio-visual instructional approach as possible approaches that would be part of a comprehensive in-service development program for school administrators.

A filmstrip was developed in cooperation with the Rockland Public Schools of Massachusetts. The individuals appearing in the filmstrip are Rockland Public School personnel and students; the location of the filming took place at the Rockland Public Schools.

The filmstrip was designed to replace portions of the written material in the module guidebooks and also to supplement the narration on the cassette tape.

An additional component was also included in the suggested activities section of the guidebook. This component consists of a series of communication analysis charts and communication exercises which enable school administrators who experience the module, to analyze the staff
communication process in their schools. Also they have material that can be utilized to train their staff in the concept of two-way communications.

A Description of the Audio Instructional Module-Staff Development: Basic Elements of the Communication Process

Physical Appearance The components of the module are enclosed in a red plastic three ring binder with a plastic pocket on the inside of the front and rear portions of the binder. A guidebook for the second participant is inside the front pocket. There are two envelopes containing exercises inside the rear pocket of the binder. A plastic envelope which contains a cassette tape is located in the rear of the binder. Red tabs indicate the location of the different sections and exercises in the module.

Contents The contents of the Communication Module are summarized as follows:

1. A title page, which includes the name of the individuals who developed the module.
2. A table of contents.
3. An introduction.
   a. Purpose of Audio Modular Instruction-This instruction is directed toward school principals, assistant principals, and other school personnel involved in the general area of staff development. It is designed to stimulate these staff leaders to carefully
scrutinize the communication behavior which they have established with the staff; and to initiate actions which focus on reducing the possible barriers to administrator-staff understanding which may presently exist in their schools.

b. Description of the module—This module deals with the basic elements of the communication process. It focuses on the process of communication as it is defined from its Latin derivation, communis. Through becoming personally involved in the exercise included in the module, the participants have the opportunity to develop their own conclusions as to the differences between a situation in which two-way communication exists, and one in which communication goes one way.

Upon completion of this module the participant should be able to:

1. Define "communication" as it relates to its Latin derivation.

2. Describe the two basic elements of the one-way communication process.

3. Describe the origin and nature of four hazards to successful communication ("Successful communication," in this case, relates to the definition of communication given in #1 above. The reference points for the identification of the hazards to successful communication are the basic elements described in #2 above.)

4. Describe two advantages and two disadvantages of the one-way
communication process, as opposed to the two-way process. (This description is to be based on an analysis of a personal experience in being involved in the two forms of the communication process.)

5. Distinguish between the feelings or attitudes generated as a result of being involved in a one-way communication process, as compared to the two-way process. (This distinction is to be based on an analysis of a personal experience in being involved in the two forms of the communication process, both as a source and as a receiver of information.)

6. Identify two existing personal administrative behaviors which reflect a reliance upon the one-way communication process, and describe two effects that these behaviors might have upon the members of the school staff.

7. Describe two personal administrative actions which could be initiated, the purpose of which would be to reduce the possible barriers to administrator-staff understanding which may presently exist in the school. (These actions should focus on reducing the barriers resulting from practices which reflect or encourage a reliance upon the one-way communication process.)

8. Conduct two analyses in your school for determining if one-way or two-way communication exists between you and your staff. In the first analysis a Staff Communication Analysis Chart will be utilized. This analysis procedure includes
the following criteria:

a. Staff comments  
b. Staff suggestions  
c. Staff criticisms  
d. Staff recommendations  
e. Other responses

A second analysis designed to measure the communication conditions in your school will be a questionnaire to be distributed to your staff for completion.

A communication exercise has been included as an integral component of this audio instruction module. In this exercise the participants have the opportunity to distinguish between a situation in which two-way communication goes one way. Participation in this exercise is important for a complete understanding of the modular experiences.

Prerequisite—None

Time required—Approximately one and one-half hours.

Materials and resources required:

1. Audio Instruction two-track magnetic cassette tape, recorded at a speed of 1 7/8 inches per second. The tape for "Staff Development: The Basic Elements of the Communication Process" is enclosed.

2. A cassette tape recorder.

3. This Audio-Instruction Module Guidebook.

4. A pencil and several sheets of scratch paper.

5. A clock or watch with a second hand attached.
6. Both individuals participating in the module. The second individual could include any of the following: other administrators, your spouse, an older student, a teacher, a secretary, or another friend.

Instructions to the participant—You will derive the greatest benefit from this instructional module by observing the following suggestions:

1. Take the module where you will not be interrupted, and give it your complete attention.

2. Set aside sufficient time (approximately one and one-half hours) so that you can follow the instruction through to its conclusion.

3. Do both Sections of the communication exercise, and fill in all of the necessary data in the data tables.

The instruction starts on the tape. The instructor will refer to and explain the information given in the Guidebook. This information appears in the form of Charts—diagrams, text, etc. This module is reusable, since it is not necessary for you to mark in the Charts or otherwise enter information in the Guidebook. Review questions should be answered on a separate sheet of paper. Several sheets with blank data tables are enclosed for you to enter the information from the Exercise. The sheets can be reproduced, should additional copies be needed.

A Description of the Audio-Visual Instructional Module—Staff Development:

Basic Elements of the Communication Process

Physical Appearance The components of the module are enclosed in a green plastic three ring binder with a plastic pocket on the inside of
the front and rear portions of the binder. A guidebook for the second participant is inside the front pocket. There are two envelopes containing exercises inside the rear pocket of the binder. A large plastic envelope which contains a cassette tape and filmstrip is located in the rear of the binder. Green tabs indicate the location of the different sections and exercises in the module.

Contents The Audio-Visual Instructional Module is different in content than the Audio-Instructional Module in the following ways:

1. The Audio-Visual Instructional Module has the additional equipment requirement of a filmstrip projector and viewing screen.
2. The Audio-Visual Instructional Module includes a filmstrip as a component part of the module.
3. The audio cassette component in the Audio-Visual Instructional Module has sound cues that are synchronized to the filmstrip.
4. The Audio-Visual Instructional Module has less charts included in the filmstrip.
5. The Audio-Visual Instructional Module has less flexibility than the Audio Instructional Module due to the addition of the filmstrip projector and viewing screen.

The Field Testing of the Audio Modules Before Revision

The field testing of the audio modules took place in Florida, Washington, D.C., and Massachusetts.
In Florida the field testing was held at Florida A. & M. University with eleven practicing school administrators.

The audio modules were field tested at a school district summer institute for school administrators in Washington, D.C.

Field testing was conducted in the Massachusetts communities of Rockland, Stoneham, and Turners Falls during administrative staff meetings in the respective communities.

Field Testing of the Revised Audio Instructional Communication Module and the Audio-Visual Instructional Communication Module

The audio and audio-visual communication modules were field tested in over twenty different communities throughout Massachusetts. Included in the field testing were communities classified as rural, suburban, and urban. These communities ranged from lower socio-economic to higher socio-economic composition.

There were forty participants involved with the audio module and forty participants with the audio-visual module. These participants were school administrators, teachers, administrative secretaries, and spouses of administrators or teachers. The administrators represented elementary schools, junior high schools, senior high schools, and central office administrations.

Individuals from the different communities were contacted, given a description of the module and told what would be required of them. Then they were asked if they would be interested in experiencing a module with another individual of their own choosing. If an individual was
interested he was given a biographical data form to fill out. This was necessary in order that the two experimental groups become equal in relation to six established criteria. In addition the school administrators were asked to recommend other administrators that they believed might be interested in participating.

Individuals that were interested in participating in the field test were given a module and an evaluation packet and told that the materials would be collected in approximately one week. They were instructed to obtain the necessary equipment and to experience the module whenever they had time.

The instructional modules were designed so that school administrators could become involved in continuing education in their office or any other place at any desired time. Some of the participants took time from their professional duties and experienced a module with another administrator, teacher, or secretary in their office. Others took a module home and participated with their spouse in the evening or during a weekend.

The participants were asked to utilize the communication analysis charts and communication exercises handouts that were located in the suggested activities section of the guidebook.

Most of the participants completed the modules and evaluation materials within a week. However, approximately twenty percent of the participants took longer than a week to find time to experience a module and complete an evaluation packet.
CHAPTER IV

METHODOLOGY OF THE STUDY

The previous chapter described the background, development, composition, and field testing of the audio modular and audio-visual modular instructional units. This chapter will 1) describe the validation process utilized in obtaining validity and reliability for the achievement portion of the testing instruments; 2) describe the study population comprising the two experimental groups and the control group; and 3) describe the assessment procedures utilized in the comparative analysis of the suitability of the audio modular and audio-visual modular instructional approaches for the continuing education of school administrators.

Validation of the Achievement Test

An important element of this study was the testing utilized to obtain validity and reliability for the achievement test. Koenker explains the importance of validity:

The most important characteristic of any test is its validity. Validity is the extent to which a test measures what it purports to measure.¹

Reliability is also an important characteristic for a test to possess. A reliable test is a test that measures in a consistent fashion.²

²Ibid., p. 63.
Study Population Participating in the Validation Process

The study population participating in the validation process consisted of twenty-eight graduate students in the School of Education at the University of Massachusetts. These study members were divided into two equal groups: an experimental and a control group.

All the study members were given the achievement test designed for the communication instructional modules. This test is presented in APPENDIX C as a part of the evaluation packet. A retest was given one week later to all the study members. According to Koenker, a method of finding reliability is to give a test, repeat it at a later time, and correlate the scores. The scores of Test 1 and Test 2 (retest) are presented in APPENDIX B, Table B-1.

The Pearson Product-Moment Correlation Formula was used to show the degree of relationship of the two sets of scores. The data used in the formula is presented in APPENDIX B, Table B-2. The Pearson Product-Moment Correlation Formula and computations are presented in APPENDIX B, Figure B-1. The correlation coefficient was found to be 0.6.

The Participation of the Experimental Group in the Communication Module

The fourteen members of the experimental group participated in the audio instructional communication module in groups of two after they were given Test 2 (retest). The sub-groups were handed the mod-

\[3\text{Ibid.}\]
ules and asked to experience the modules within one week. They then were given Test 3 (retest). Test 3 was identical to Test 1 and Test 2. All fourteen members of the experimental group participated in the modules and completed Test 3. The scores of Test 2 and Test 3 of the experimental group are presented in APPENDIX B, Table B-3.

The Pearson Product-Moment Correlation Formula was used this time to show the degree of relationship between Test 2 and Test 3 of the experimental group. The data used in the formula is presented in APPENDIX B, Table B-4. The computations of the Pearson Product-Moment Correlation Formula for Test 2 and Test 3 of the experimental group are presented in APPENDIX B, Figure B-2. The correlation coefficient was found to be 0.04.

The Variance for Test 2 and Test 3 of the Experimental Group

The variance is an average reflecting the distance of the individual scores from the mean of the distribution. It is a measure of dispersion. Thus the larger the variance, the greater the distance of scores from the mean.\(^4\) The Variance Formula and computations for Test 2 and Test 3 of the experimental group are presented in APPENDIX B, Figure B-3. The Squared Deviations from the Mean are presented in APPENDIX B, Table B-5. The variance for the second test was found to be 2.8 and the variance for the third test was found to be 1.2.

The t Test Applied to Test 2 and Test 3 of the Exploratory Group

The t Test is applied for determination of how much the difference between two means has to be for it to be judged significant. When all other factors are equal, the larger the value of t, the more probability that a significant difference exists between the two groups. The t Test Formula and computations are presented in APPENDIX B, Figure B-4. The t (value by which the statistical significance of the mean differential will be judged) was found to be 8.5.

The next step was the determination as to whether or not t (8.5) be deemed statistically significant. This was done by comparing t with a table of t values. The degrees of freedom used was N-1 or 13. The distribution of t Table was entered with 13 degrees of freedom and a probability level of 0.05. The point of intersection yielded a t value of 2.160. The Distribution of t Table is presented in APPENDIX B, Table B-6.5

Conclusions of the Validation Process

The correlation coefficient of Test 1 and Test 2 was found to be 0.6; the correlation coefficient of Test 2 and Test 3 was found to be 0.04. The participants had experienced the instructional module between Test 2 and Test 3.

The value of t was found to be 8.5 and at the point of intersection of Distribution of t Table it yielded a value of 2.160.

5Ibid.
This statistical data substantiated that the achievement test contained the characteristics of validity and reliability.
Study Population

In this study the population was comprised of three separate groups; two experimental groups and a control group. One experimental group consisted of forty participants who experienced the audio instructional modules during the field testing aspect of the study. The second experimental group consisted of forty participants who experienced the audio-visual instructional modules during the field testing aspect of the study. A control group was utilized in the study to facilitate assessment of the achievement portion of the evaluation instruments. The control group consisted of twenty-eight individuals who participated in the validation process. These individuals completed the achievement portion of the assessment instruments before experiencing an instructional module. In Chapter III of this study a description of the field tests was presented.

In the following section a description of the composition of the two experimental groups and the control group will be presented in relation to the following criteria: 1) sex, 2) age, 3) present position, 4) number of years of administrative experience, 5) setting of the school in which the member was employed, and 6) highest academic degree held by the individual.

The Comparison of the Composition of the Two Experimental Groups and the Control Group in Relation to Sex and Age

In Table 1 the composition and comparison of the three groups
regarding the sex and age of the individuals is presented.

TABLE 1

A COMPARISON OF THE COMPOSITION OF THE TWO EXPERIMENTAL GROUPS AND THE CONTROL GROUP IN RELATION TO SEX AND AGE

<table>
<thead>
<tr>
<th>Characteristic</th>
<th>Experimental Group A (N=40)</th>
<th>Experimental Group B (N=40)</th>
<th>Control Group (N=28)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>No.</td>
<td>%</td>
<td>No.</td>
</tr>
<tr>
<td>Sex:</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Male</td>
<td>26</td>
<td>65.0</td>
<td>26</td>
</tr>
<tr>
<td>Female</td>
<td>14</td>
<td>35.0</td>
<td>14</td>
</tr>
<tr>
<td>Age:</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>21-30</td>
<td>5</td>
<td>12.5</td>
<td>5</td>
</tr>
<tr>
<td>31-40</td>
<td>24</td>
<td>60.0</td>
<td>24</td>
</tr>
<tr>
<td>41-50</td>
<td>8</td>
<td>20.0</td>
<td>8</td>
</tr>
<tr>
<td>51-over</td>
<td>3</td>
<td>7.5</td>
<td>3</td>
</tr>
</tbody>
</table>

The data in the table shows that 26 members of both experimental groups are males and 14 members of both experimental groups are females. Approximately 65.0 per cent of the members of both experimental groups were males.

In the control group 21 members are males and 7 members are female. Approximately 75.0 per cent of the members of the control group are males.
The data indicates that 5 members of both experimental groups belonged to the 21-30 age group, 24 members of both experimental groups belonged to the 31-40 age group, 8 members of both experimental groups belonged to the 41-50 age group, and 3 members of both experimental groups belonged to 51 and over age group. Approximately 60.0 per cent of the members of both experimental groups belonged to the 31-40 age group.

In the control group 16 members belonged to the 21-30 age group, 8 members belonged to the 31-40 age group, 3 members belonged to the 41-50 age group, and 1 member belonged to the 51 and over age group. Approximately 57.1 per cent of the members of the control group belonged to the 21-30 age group.

These findings indicate that the composition of the two experimental groups are equal and the composition of the control group is substantially different from the two experimental groups in relation to age and sex.
The Comparison of the Composition of the Two Experimental Groups and the Control Group in Relation to Present Position

In Table 2 the composition and comparison of the three groups regarding the present position of the members is presented.

<table>
<thead>
<tr>
<th>Characteristic</th>
<th>Experimental Group A (Audio)</th>
<th>Experimental Group B (Audio-Visual)</th>
<th>Control Group</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>(N=40) No.</td>
<td>%</td>
<td>(N=40) No.</td>
</tr>
<tr>
<td>Teacher</td>
<td>6</td>
<td>15.0</td>
<td>6</td>
</tr>
<tr>
<td>Asst. Prin.</td>
<td>7</td>
<td>17.5</td>
<td>7</td>
</tr>
<tr>
<td>Elem. Prin.</td>
<td>6</td>
<td>15.0</td>
<td>6</td>
</tr>
<tr>
<td>Sec. Prin.</td>
<td>4</td>
<td>10.0</td>
<td>4</td>
</tr>
<tr>
<td>Other*</td>
<td>17</td>
<td>42.5</td>
<td>17</td>
</tr>
</tbody>
</table>

*Refers to participants employed in central office administration and participants not employed in a school.

The data in the table shows that six members of both experimental groups were teachers, seven members of both experimental groups were assistant principals, six members of both experimental groups were elementary principals, four members of both experimental groups were secondary principals, and seventeen members were classified as others; a group including central office personnel, secretaries, and wives of teachers and administrators. Approximately 42.5 per cent of the members of both experimental groups were assistant principals or principals.
In the control group ten members were teachers, one member was an assistant principal, one member was an elementary principal, one member was a secondary principal, and twelve members were classified as others; full time graduate students. Approximately 21.5 per cent of the members of the control group were assistant principals or principals.

These findings indicate that the composition of the two experimental groups are equal and the composition of the control group is substantially different from the two experimental groups in relation to present position.

The Comparison of the Composition of the Two Experimental Groups and the Number of Years of Administrative Experience

In Table 3 the composition and comparison of the three groups regarding the number of years of administrative experience are presented.

Table 3

<table>
<thead>
<tr>
<th>Characteristic</th>
<th>Experimental Group A (Audio)</th>
<th>Experimental Group B (Audio-Visual)</th>
<th>Control Group (N=28)</th>
</tr>
</thead>
<tbody>
<tr>
<td>No.</td>
<td>%</td>
<td>No.</td>
<td>%</td>
</tr>
<tr>
<td>Number of years of Administrative Experience</td>
<td>No.</td>
<td>%</td>
<td>No.</td>
</tr>
<tr>
<td>0-1</td>
<td>1</td>
<td>2.5</td>
<td>1</td>
</tr>
<tr>
<td>1-5</td>
<td>12</td>
<td>30.0</td>
<td>12</td>
</tr>
<tr>
<td>6-10</td>
<td>9</td>
<td>22.5</td>
<td>9</td>
</tr>
<tr>
<td>11-over</td>
<td>5</td>
<td>12.5</td>
<td>5</td>
</tr>
<tr>
<td>Other*</td>
<td>13</td>
<td>32.5</td>
<td>13</td>
</tr>
</tbody>
</table>

*Refers to participants employed in central office administration and participants not employed in a school
The data in the table shows that one member of both experimental groups had less than 1 year of administrative experience, twelve members of both experimental groups had from 1-5 years of administrative experience, nine members of both experimental groups had from 6-10 years of administrative experience, five members of both experimental groups had from 11 years or over of administrative experience, and thirteen members of both experimental groups had experiences other than administration. Approximately 67.5 per cent of the members of both experimental groups had administrative experience.

In the control group one member had less than 1 year of administrative experience, ten members had from 1-5 years of administrative experience, three members had from 6-10 years of administrative experience, one member had from 11 years or over of administrative experience, and thirteen members had experiences other than administration. Approximately 53.6 per cent of the members of the control had administrative experience.

These findings indicate that the composition of the two experimental groups are equal and the composition of the control group is substantially different from the two experimental groups in relation to number of years of administrative experience.
The Comparison of the Composition of the Two Experimental Groups and the Control Group in Relation to the Setting of the School

In Table 4 the composition and comparison of the three groups regarding the setting of the school in which the individual is employed is present.

TABLE 4

A COMPARISON OF THE COMPOSITION OF THE TWO EXPERIMENTAL GROUPS AND THE CONTROL GROUP IN RELATION TO THE SETTING OF SCHOOL IN WHICH THE MEMBER IS EMPLOYED

<table>
<thead>
<tr>
<th>Characteristic</th>
<th>Experimental Group A (Audio)</th>
<th>Experimental Group B (Audio-Visual)</th>
<th>Control Group</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>(N=40)</td>
<td>(N=40)</td>
<td>(N=28)</td>
</tr>
<tr>
<td>No.</td>
<td>%</td>
<td>No.</td>
<td>%</td>
</tr>
<tr>
<td>Setting of School</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Urban</td>
<td>3 7.5</td>
<td>3 7.5</td>
<td>7 25.0</td>
</tr>
<tr>
<td>Suburban</td>
<td>18 45.0</td>
<td>18 45.0</td>
<td>10 35.7</td>
</tr>
<tr>
<td>Rural</td>
<td>9 22.5</td>
<td>9 22.5</td>
<td>3 10.7</td>
</tr>
<tr>
<td>Other*</td>
<td>10 25.0</td>
<td>10 25.0</td>
<td>8 28.6</td>
</tr>
</tbody>
</table>

*Refers to participants employed in central office administration and participants not employed in a school.
The data in the table shows that three members of both experimental groups were employed in schools within urban settings, eighteen members of both experimental groups were employed in schools within suburban settings, nine members of both experimental groups were employed in schools within rural settings, and ten members of both experimental groups were not employed in one of the selected settings. Approximately 75 per cent of the members of both experimental groups were employed in schools within either urban, suburban, or rural settings.

In the control group seven members were employed in schools within urban settings, ten members were employed in schools within suburban settings, three members were employed in schools within rural settings, and eight members were not employed in one of the selected school settings. Approximately 71.4 per cent of the members of the control group were employed in schools within either urban, suburban, or rural settings.

These findings indicate that the composition of the two experimental groups are equal and the composition of the control group is substantially different from the two experimental groups in relation to the types of setting for the schools in which the members were employed.
Comparison of the Composition of the Two Experimental Groups and the Control Group in Relation to the Highest Academic Degree Held

In Table 5 the composition and comparison of the three groups regarding the highest degree held by the individual is presented.

<table>
<thead>
<tr>
<th>Characteristic</th>
<th>Experimental Group A (N=40)</th>
<th>Experimental Group B (N=40)</th>
<th>Control Group (N=28)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Highest Degree</td>
<td>No.</td>
<td>%</td>
<td>No.</td>
</tr>
<tr>
<td>Bachelors</td>
<td>8</td>
<td>20.0</td>
<td>8</td>
</tr>
<tr>
<td>Masters</td>
<td>25</td>
<td>62.5</td>
<td>25</td>
</tr>
<tr>
<td>CAGS</td>
<td>1</td>
<td>2.5</td>
<td>1</td>
</tr>
<tr>
<td>Doctorate</td>
<td>1</td>
<td>2.5</td>
<td>1</td>
</tr>
<tr>
<td>Other</td>
<td>5</td>
<td>12.5</td>
<td>5</td>
</tr>
</tbody>
</table>

The data in the table shows that eight members of both experimental groups had Bachelors degree, twenty-five members of both experimental groups had Masters degree, one member of both experimental groups had a CAGS, one member of both experimental groups had a Doctorate degree, and five members of both experimental groups classified as "Other" did not possess any of the listed degrees. Approximately 62.5 per cent of the members of both experimental groups had Masters.

In the control group eleven members had Bachelors degrees,
seventeen members had Masters degrees, none of the members had a CAGS or Doctorate degree. Approximately 60.7 per cent of the members of the control group had Master degrees.

These findings indicate that the composition of the two experimental groups are equal and the composition of the control group is substantially different from the two experimental groups in relation to the highest degree held by all the members of the group.

Summary

A description of the composition of the two experimental groups (the audio experimental group and the audio-visual experimental group) and the control group was presented in the preceding sections. The data indicates that the two experimental groups are alike and the control group different from both experimental groups in connection to the following characteristics: 1) sex, 2) age, 3) present position, 4) number of years of administrative experience, 5) setting of the school in which the member is employed, and 6) highest degree earned by individual.
Data Gathering and Processing

Five different methods were utilized in the study for comparing the audio modular and audio-visual modular instructional approaches as in-service training approaches for school administrators. The methods utilized were 1) "closed" questions on a written questionnaire for identifying the attitude of the participant toward the module experience; 2) "open-ended" questions on a written questionnaire for identifying the attitude of the participant toward the modular experience; 3) a comparison of the attitudes of the participants experiencing the audio module to the attitudes of the participants experiencing the audio-visual module; 4) comparison of the attitudes of the participants experiencing the audio module and the audio-visual module to other types of in-service training programs through utilization of "open-ended" and "closed" questions on a questionnaire; 5) determination and comparison of cognitive changes that took place in the participants after experiencing the audio module and the audio-visual module through utilization of a posttest-only equivalent control quasi-experimental design. These methods are separately described in the following sections.

The Procedures Utilized for the Determination of the Participant's Attitude Regarding his Module Experience by Means of "Closed" Questions

The participants were asked to respond to some "closed" questions on a written questionnaire after experiencing a module. A description of the content and the rationale for these questions are presented in the following sections.
Questions Pertaining to the Interest and Value of the Module Experience to the Participant

There were two questions designed to find out 1) how interesting the participant perceived the modular experience to be, and 2) the learning value of the modular experience to the participants. The questions are shown in Figure 2. One of these questions utilized the Likert-type five scale response categories. There were two categories that solicited responses indicating positive attitudes and two categories that solicited responses indicating negative attitudes. In addition there was one category that solicited a response indicating a neutral attitude. The other question utilized four scale response categories. There were two categories that solicited responses indicating positive attitudes and two categories that solicited responses indicating negative attitudes.

1. I found participating in the audio instructional module, "Staff Development: The Basic Elements of Communication"

   a) very interesting,
   b) somewhat interesting,
   c) somewhat boring,
   d) very boring.

2. I found participating in the audio instructional module, "Staff Development: The Basic Elements of Communication"

   a) a very valuable learning experience,
   b) a learning experience of some value,
   c) an experience which is neither valuable nor worthless as far as my own learning,
   d) an experience somewhat worthless,
   e) an experience which was completely worthless.

Fig. 2 --Questions Concerned with Interest in the Modular Experience and the Value to Own Learning.
Other Questions Utilizing the Likert-type Scale Categories

There were five additional questions utilizing the Likert-type five scale categories for soliciting responses. These questions are shown in Figure 3. These questions also contained five categories; two

6. I feel that the experience I gained from participating in this module
   ___ a) was definitely worth this amount of time,
   ___ b) was probably worth this amount of time,
   ___ c) may or may not have been worth this amount of time,
   ___ d) was probably not worth this amount of time,
   ___ e) was definitely not worth this amount of time.

8. How that I know what the module is like, if I had had the choice I would
   ___ a) have definitely participated in the module,
   ___ b) have probably participated in the module,
   ___ c) not know whether I would or would not have participated in the module,
   ___ d) have probably not participated in the module,
   ___ e) have definitely not participated in the module.

9. How excited would you be in recommending to a fellow administrator that he/she participate in this module?
   ___ a) very excited
   ___ b) somewhat excited
   ___ c) no feeling either way
   ___ d) would be reluctant to recommend it
   ___ e) definitely would not recommend it

13. In the back pages of the modular guidebook are provided a number of activities and exercises which could be used with the staff. How excited are you in trying to use some of these suggested activities and exercises?
   ___ a) very excited
   ___ b) somewhat excited
   ___ c) no feeling either way
   ___ d) would be reluctant to try any
   ___ e) definitely would not try any

14. If you had the opportunity would you participate in additional modules?
   ___ a) yes, definitely
   ___ b) yes, probably
   ___ c) I don't know
   ___ d) probably not
   ___ e) definitely not

Fig.3 —More Questions Utilizing the Likert-type Five Scale Categories for Obtaining Responses.
categories that solicited responses indicating positive attitudes, two
categories that solicited responses indicating negative attitudes, and
one category that solicited a response indicating a neutral attitude.
The following section describes the procedures used in this study to
process and analyze the data collected from these questions.

The Procedures Utilized in
Processing and Analyzing the
Data from Questions Incorporating Likert-type Categories

There were two methods utilized in analyzing the data accumulated
from the questions. One method was to compute the number and percentage
of the responses marked for each of the categories. The categories were
lettered from (a) to (e) with the exception of one question which con-
tained categories from (a) to (d). The (a) and (b) categories denoted
positive attitudes in comparison to the (d) and (e) categories which de-
noted negative responses. The question containing (a) through (d) cate-
gories denotes positive responses for (a) and (b) and negative attitudes
for (c) and (d) categories. The (c) category in the other questions de-
noted a neutral response. The categories indicating positive attitudes,
(a) and (b), and the categories indicating negative responses, (d) and (e)
were combined, in most cases, to determine whether attitudes were positive
or negative in direction. The neutral or (c) responses were not included
in the analysis.

A second method utilized in the study was the determination of
a weighted mean to the response categories of these questions. The
values designated for the categories of responses are as follows:
(a) = 4; (b) = 3; (c) = 2; (d) = 1; and (e) = 0. The rationale for
use of the weighted means for these questions was primarily for deter-
mining the differential attitudes that might exist toward the audio
and audio-visual modules.

Additional "Closed" Questions
On Attitude of Participants
Toward the Modules

There are a group of questions in the questionnaire designed to
determine attitudes concerning specific components of the modules.
The questions for the modules are presented in Figure 4.

11. The following items focus on the technical aspects of the audio
instructional module, "Staff Development: The Basic Elements of
Communication." Please circle the numeral at the right of the statement
which best represents your evaluation of the particular aspect mentioned
in the statement. Use the following scale:

1. Outstanding
2. Good
3. Average
4. Needs improving
5. Very poor

a) The general appearance of the module................................. 1 2 3 4 5
b) The clarity of the module instructions................................ 1 2 3 4 5
c) The statement of objectives.............................................. 1 2 3 4 5
d) The appearance of the pages in the text portion.................. 1 2 3 4 5
e) The quality of the cassette tape........................................ 1 2 3 4 5
f) The synchronization between the text and the audio portion... 1 2 3 4 5
g) The ease and convenience with which the materials (exercises,
cassette tape, extra guidebook, etc.) can be utilized............. 1 2 3 4 5

Fig. 4—Questions regarding the technical aspects of the
modules.
The questions were processed, analyzed, and interpreted the same as the questions previously described.

A question to determine whether the participant would take time to experience a module during working hours was included in the questionnaire and shown in Figure 5. The scale utilized in this question

16. For the following question place an X between the : : which best represents your feelings.

During your "typical" workweek how much priority would you give to taking time out to participate in an audio modular instructional unit:

High Priority :__ :__ :__ :__ :__ :__ :__ Low Priority

Fig. 5—This question is designed to find out whether the participant would take the time to experience the module.

has seven levels ranging from "low priority" to "high priority" with a neutral level in the middle of the scale. This scale ranged from 0 for "low priority" to 6 for "high priority." The question was processed, analyzed, and interpreted in a similar manner as the previous ones with the exception of the assigned numerical weight to the scale.

Procedures Used for Determining Attitude of Participant Relating to his Modular Experience through Utilization of "Open-ended" Questions

A number of "open-ended" questions were also in the questionnaire to determine the participant's attitude towards the module. These questions were designed to acquire additional data.
Four of these "open-ended" questions related to the attitude of the participant toward the specific module, "Staff Development: Basic Elements of Communication." These questions are shown in Figure 6.

3. What was the major strength of this specific audio instructional module?

4. What was the major weakness of this specific audio instructional module?

7. It it was discovered that this module was too time consuming, and you were involved in revising it, what portion would you definitely keep in the module?

   What portion would you remove?

10. Briefly state what you feel you have learned from this module.

   What other existing instructional method would you have preferred to participate in, in order to learn this?

Fig. 6—"Open-ended" questions on soliciting the participant's attitude toward the module, "Staff Development: Basic Elements of Communication."

The questions were included in the questionnaire to solicit responses regarding 1) the perception of the participant as to what knowledge he had acquired through his modular experience; and 2) the major strengths and weaknesses of the module, "Staff Development: Basic Elements of Communication."
There were two groups of statements included in the questionnaire to obtain positive or negative responses from the participant. These questions are shown in Figure 7. The first group of statements relate

12. Complete the following statements:
   a) The discussion questions in this module
   
   b) The exercise in which you participated in this module
   
   c) The diagrams in this module
   
   d) The variety of voices in this module
   
   e) One change that I would make in this module
   
   f) One aspect of this module which should definitely remain the same

19. Please complete the following statements:
   a) I would spend time participating in an audio modular instructional unit only if
   
   b) I would definitely not spend time participating in an audio modular instructional unit if
   
   c) For anyone to develop any more audio modular instructional units would
   
   d) If I were to receive an audio modular instructional unit on a Monday of a "typical" work-week I would

Fig. 7 -- Two groups of completion questions designed to obtain attitudinal responses to module, "Staff Development: Basic Elements of Communication" and the general modular approach of in-service training.
to the specific module, "Staff Development: Basic Elements of Communication." The second group of statements relate to the audio modular and audio-visual modular approaches.

In Figure 8 are two groups of incomplete statements and questions

17. The major strengths of the audio modular instructional approach as an in-service technique are:

18. The major weaknesses of the audio modular instructional approach as an in-service technique are:

20. What kinds of skills and knowledge do you think could be learned through the use of audio modular instruction?

21. What additional topics might be adapted to audio modular instruction?

22. Any additional comments.

Fig. 8 --Two groups of questions designed primarily for obtaining responses toward the modular approach and potential knowledge that might be gained through utilization of modules.

designed to obtain additional specific responses relating to the audio modular and audio-visual modular approaches.

The responses for each of the "open-ended" questions were categorized so that the collected data could be analyzed. The various response categories were computed as to total number and percent and compared with the computed responses of the "closed" questions for determination of existence of patterns.
Procedures Utilized for Obtaining the Attitude of the Participant Toward the Modular Approach in Comparison to Other Types of In-service Approaches

There were two procedures utilized in this study in an effort to obtain the attitude of the participant toward the modular approach in comparison to other types of in-service approaches. First of all the question asked the participants to rank in order of preference a list of six types of in-service approaches. This question is shown in Figure 9. Also there were two blank lines included in the answer.

15. Suppose you were given the time and the money to participate in the following in-service educational programs. Assuming they would be equal in cost and the amount of time required, rank the following approaches in the order of your preference. Start with the numeral one for your highest preference; numeral two as second, and so on.

   ____ a) attend an administrative conference to listen to speakers.
   ____ b) attend an administrative conference involving a number of seminars.
   ____ c) purchase a professional level book and read it.
   ____ d) visit a neighboring school district.
   ____ e) participate in an audio modular instructional unit.
   ____ f) have a discussion group session with other administrators from my district.

   (Below add any more in-service educational program approaches you might choose as an alternative.)

   ____ g) __________________________________________________________________________

   ____ h) __________________________________________________________________________

Fig. 9—This question asked the participant to rank order in-service approaches according to his preference.
section of the question in which the participant had the opportunity to present additional in-service approaches to the list.

The collected data was processed by 1) computing the number of times each approach was ranked according to order preference; and 2) assigning to each response a numerical value and determining for each answer the weighted mean score. In Figure 10 are shown the assigned numerical values.

<table>
<thead>
<tr>
<th>Rank</th>
<th>Assigned Numerical Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>5</td>
</tr>
<tr>
<td>2</td>
<td>4</td>
</tr>
<tr>
<td>3</td>
<td>3</td>
</tr>
<tr>
<td>4</td>
<td>2</td>
</tr>
<tr>
<td>5</td>
<td>1</td>
</tr>
<tr>
<td>6</td>
<td>0</td>
</tr>
</tbody>
</table>

Fig. 10 -- Assigned numerical value to rank preference given for each answer for Question #15.

Also a semantic differential scale was used for obtaining the attitude of the participant toward the modular approach. This scale is presented in the next section.

Utilization of the Semantic Differential Scale

The semantic differential scale was utilized to determine the reactions of the participants to two concepts: 1) "audio modular instruction as one alternative approach for in-service education for school administrators;" and 2) "in-service educational programs for administrators in which you have participated (excluding the audio
modular instructional approach)." The semantic differential scale and polar traits are shown in Figure 11.

The polarity differences were assigned values to the seven possible response positions as shown below and analyzed.

Good : 6 : 5 : 4 : 3 : 2 : 1 : 0 : Bad

Then the mean polarity scores relating to the two concepts were computed for the two experimental groups and the control group. Also the twenty-five polar traits were put into five groups. In the next step the mean polarity group scores were computed to obtain the mean polarity scores for the factors: 1) evaluation, 2) potency, 3) receptivity, 4) activity, and 5) miscellaneous.

The five factors and related groups of polar traits are listed below.


2. Potency=(weak-strong) (free-constrained) (prohibitive-permissive) (shallow-deep)

3. Receptivity=(boring-interesting) (rough-smooth) (attentive-inattentive)


5. Miscellaneous=(tense-relaxed) (non-threatening-threatening) (inferior-superior) (relevant-irrelevant) (near-far)

A comparison in mean polarity scores of these factors was made between the experimental and control group for each of the two concepts.

Interviewing Procedures Utilized for Including Investigator Perceptor's into the Study

Interviews were conducted with some of the participants after they
For the following concept, place an X between the __ in front of the word which most nearly represents your feeling about the concept. The closer you place the X, the more the word represents your feeling.

<table>
<thead>
<tr>
<th>GOOD</th>
<th>UNINTIMELY</th>
<th>UNPLEASANT</th>
<th>UNCOMFORTABLE</th>
<th>UNBELIEVING</th>
<th>DISAPPOINTING</th>
<th>INATTENTIVE</th>
<th>DEEP</th>
<th>PASSIVE</th>
<th>SIMPLER</th>
<th>NERVOUS</th>
<th>HIGHLIGHTED</th>
<th>UNIMPORTANT</th>
<th>FAR</th>
</tr>
</thead>
<tbody>
<tr>
<td>UNPLEASANT</td>
<td>UNINTIMELY</td>
<td>UNCOMFORTABLE</td>
<td>UNBELIEVING</td>
<td>DISAPPOINTING</td>
<td>INATTENTIVE</td>
<td>DEEP</td>
<td>PASSIVE</td>
<td>SIMPLER</td>
<td>NERVOUS</td>
<td>HIGHLIGHTED</td>
<td>UNIMPORTANT</td>
<td>FAR</td>
<td></td>
</tr>
<tr>
<td>COMFORTABLE</td>
<td>UNCOMFORTABLE</td>
<td>TRUE</td>
<td>MEANINGFUL</td>
<td>USEFUL</td>
<td>BELIEVING</td>
<td>INTERESTING</td>
<td>INATTENTIVE</td>
<td>DEEP</td>
<td>PASSIVE</td>
<td>SIMPLER</td>
<td>NERVOUS</td>
<td>HIGHLIGHTED</td>
<td>UNIMPORTANT</td>
</tr>
<tr>
<td>MEANINGLESS</td>
<td>MEANINGFUL</td>
<td>USEFUL</td>
<td>BELIEVING</td>
<td>INTERESTING</td>
<td>INATTENTIVE</td>
<td>DEEP</td>
<td>PASSIVE</td>
<td>SIMPLER</td>
<td>NERVOUS</td>
<td>HIGHLIGHTED</td>
<td>UNIMPORTANT</td>
<td>FAR</td>
<td></td>
</tr>
<tr>
<td>USELESS</td>
<td>USEFUL</td>
<td>BELIEVING</td>
<td>INTERESTING</td>
<td>INATTENTIVE</td>
<td>DEEP</td>
<td>PASSIVE</td>
<td>SIMPLER</td>
<td>NERVOUS</td>
<td>HIGHLIGHTED</td>
<td>UNIMPORTANT</td>
<td>FAR</td>
<td></td>
<td></td>
</tr>
<tr>
<td>TRUE</td>
<td>FALSE</td>
<td>BELIEVING</td>
<td>INTERESTING</td>
<td>INATTENTIVE</td>
<td>DEEP</td>
<td>PASSIVE</td>
<td>SIMPLER</td>
<td>NERVOUS</td>
<td>HIGHLIGHTED</td>
<td>UNIMPORTANT</td>
<td>FAR</td>
<td></td>
<td></td>
</tr>
<tr>
<td>SKEPTICAL</td>
<td>BELIEVING</td>
<td>INTERESTING</td>
<td>INATTENTIVE</td>
<td>DEEP</td>
<td>PASSIVE</td>
<td>SIMPLER</td>
<td>NERVOUS</td>
<td>HIGHLIGHTED</td>
<td>UNIMPORTANT</td>
<td>FAR</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>PROMISING</td>
<td>DISAPPOINTING</td>
<td>INATTENTIVE</td>
<td>DEEP</td>
<td>PASSIVE</td>
<td>SIMPLER</td>
<td>NERVOUS</td>
<td>HIGHLIGHTED</td>
<td>UNIMPORTANT</td>
<td>FAR</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>BORING</td>
<td>INTERESTING</td>
<td>INATTENTIVE</td>
<td>DEEP</td>
<td>PASSIVE</td>
<td>SIMPLER</td>
<td>NERVOUS</td>
<td>HIGHLIGHTED</td>
<td>UNIMPORTANT</td>
<td>FAR</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>ROUGH</td>
<td>SMOOTH</td>
<td>INATTENTIVE</td>
<td>DEEP</td>
<td>PASSIVE</td>
<td>SIMPLER</td>
<td>NERVOUS</td>
<td>HIGHLIGHTED</td>
<td>UNIMPORTANT</td>
<td>FAR</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>ATTENTIVE</td>
<td>INATTENTIVE</td>
<td>DEEP</td>
<td>PASSIVE</td>
<td>SIMPLER</td>
<td>NERVOUS</td>
<td>HIGHLIGHTED</td>
<td>UNIMPORTANT</td>
<td>FAR</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>WEAK</td>
<td>STRONG</td>
<td>INATTENTIVE</td>
<td>DEEP</td>
<td>PASSIVE</td>
<td>SIMPLER</td>
<td>NERVOUS</td>
<td>HIGHLIGHTED</td>
<td>UNIMPORTANT</td>
<td>FAR</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>FREE</td>
<td>CONstrained</td>
<td>DEEP</td>
<td>PASSIVE</td>
<td>SIMPLER</td>
<td>NERVOUS</td>
<td>HIGHLIGHTED</td>
<td>UNIMPORTANT</td>
<td>FAR</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>PROHIBITIVE</td>
<td>PERMISSIVE</td>
<td>DEEP</td>
<td>PASSIVE</td>
<td>SIMPLER</td>
<td>NERVOUS</td>
<td>HIGHLIGHTED</td>
<td>UNIMPORTANT</td>
<td>FAR</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>SHALLOW</td>
<td>DEEP</td>
<td>PASSIVE</td>
<td>SIMPLER</td>
<td>NERVOUS</td>
<td>HIGHLIGHTED</td>
<td>UNIMPORTANT</td>
<td>FAR</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Fig. 11—Semantic differential scale and polar traits.
had experienced a module. Information obtained through this procedure was included as data in the analysis of this study.

Summary

Information acquired through utilization of five assessment procedures was synthesized and investigated for existing patterns. The data accumulated from this process is presented and analyzed in the next chapter.
CHAPTER V

PRESENTATION AND ANALYSIS
OF THE FINDINGS

The validation of the achievement test, a description of the study population, and the gathering and processing of data were presented in the last chapter. In this chapter are presented the data utilized for determination of a comparative analysis of the suitability of the audio modular and audio-visual modular instructional approaches to each other and to other forms for the continuing education of school administrators.

There are five major sections included in Chapter V. These sections are as follows: 1) attitude of the participants toward the modular instructional units, 2) an attitude comparison of the modular instructional units to other forms of in-service training, 3) a comparison of the two experimental groups regarding attitudes toward various concepts, 4) a comparison of the two experimental groups with the control group regarding achievement on a cognitive test, and 5) investigator perceptions based on informal interviews with the participants several days after the modular experience.
Attitude of the Participants Toward the Modular Instructional Units

The attitude of the participants toward the modular instructional units were determined through utilization of open and closed questions enclosed in different locations in a questionnaire. The closed questions are presented in the following section.

Closed Question Data

The results of the responses from the participants regarding degree of interest during their modular experience is presented in Table 6.

TABLE 6

RESULT OF THE RESPONSE TO THE COMPLETION OF THE STATEMENT, "I FOUND PARTICIPATING IN THE AUDIO INSTRUCTIONAL MODULE, STAFF DEVELOPMENT: THE BASIC ELEMENTS OF COMMUNICATION..."

<table>
<thead>
<tr>
<th>Response Pattern</th>
<th>Audio Experimental Responses Made (N=40)</th>
<th>Audio-Visual Experimental Responses Made (N=40)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>No.</td>
<td>%</td>
</tr>
<tr>
<td>&quot;very interesting&quot;</td>
<td>16</td>
<td>40.0</td>
</tr>
<tr>
<td>&quot;somewhat interesting&quot;</td>
<td>24</td>
<td>60.0</td>
</tr>
<tr>
<td>&quot;somewhat boring&quot;</td>
<td>0</td>
<td>0.0</td>
</tr>
<tr>
<td>&quot;very boring&quot;</td>
<td>0</td>
<td>0.0</td>
</tr>
</tbody>
</table>

Difference-Insignificant at 0.05 level ($\chi^2=1.02$) chi square analysis
The data in this table indicates that 100 per cent of the participants in the audio modular experimental group and 97.5 per cent of the participants in the audio-visual experimental group found the modular experience to be interesting. It is important to note that none of the participants in either experimental group found the experience to be boring and only 2 audio-visual group participants found the modular experience to be somewhat boring. The results of both experimental groups were subjected to a chi square analysis and it was found that $X^2 = 1.02$, entered with 3 degrees of freedom, indicated a P Score of 0.79 which is insignificant at the 0.05 level. These results appear to indicate that the participants found the modular approach interesting.

In the evaluation packet the participants were asked to state the approximate time it took them to experience their module and to answer whether or not the experience was worth this time. The data in Table 7 indicates that 90 per cent of the participants in the audio experimental
TABLE 7

RESULT OF THE RESPONSE TO THE COMPLETION OF THE STATEMENT. "I FEEL THAT THE EXPERIENCE I GAINED FROM PARTICIPATING IN THIS MODULE..."

<table>
<thead>
<tr>
<th>Response Pattern</th>
<th>Audio Experimental (N=40)</th>
<th>Audio-Visual Experimental Response Made (N=40)</th>
</tr>
</thead>
<tbody>
<tr>
<td>&quot;was definitely worth this amount of time&quot;</td>
<td>17</td>
<td>16</td>
</tr>
<tr>
<td></td>
<td>42.5%</td>
<td>40.0%</td>
</tr>
<tr>
<td>&quot;was probably worth this amount of time&quot;</td>
<td>19</td>
<td>20</td>
</tr>
<tr>
<td></td>
<td>47.5%</td>
<td>50.0%</td>
</tr>
<tr>
<td>&quot;may or may not have been worth this amount of time&quot;</td>
<td>4</td>
<td>2</td>
</tr>
<tr>
<td></td>
<td>10.0%</td>
<td>5.0%</td>
</tr>
<tr>
<td>&quot;was probably not worth this amount of time&quot;</td>
<td>0</td>
<td>2</td>
</tr>
<tr>
<td></td>
<td>0.0%</td>
<td>5.0%</td>
</tr>
<tr>
<td>&quot;was definitely not worth this amount of time&quot;</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td></td>
<td>0.0%</td>
<td>0.0%</td>
</tr>
</tbody>
</table>

Difference-Insignificant at 0.05 level ($X^2 = 2.72$) chi square analysis

...group and 90 per cent of the participants in the audio-visual experimental group found the modular experience was worth the time spent. The modular experience time averaged from 1 1/2 to 3 hours. It is important to point out that no participants indicated that the modular experience was definitely not worth the time and only 2 audio-visual group participants indicated that it probably was not worth the time. These results appear to indicate that the participants found their modular experience worth the time expended. The results of both experimental groups were subjected to a chi square analysis and it was found that $X^2 = 2.72$, entered with 4 degrees of freedom, indicated a P Score of 0.61 which is insignificant at the 0.05 level.
In Table 8 is information related to a question asking if the participant would repeat the same experience again if given a choice.

**TABLE 8**

**RESULT OF THE RESPONSE TO THE COMPLETION OF THE STATEMENT, "NOW THAT I KNOW WHAT THE MODULE IS LIKE, IF I HAD HAD THE CHOICE I WOULD..."**

<table>
<thead>
<tr>
<th>Response Pattern</th>
<th>Audio Experimental (N=40) Responses Made</th>
<th>Audio-Visual Experimental (N=40) Responses Made</th>
</tr>
</thead>
<tbody>
<tr>
<td>&quot;have definitely participated in the module&quot;</td>
<td>17 (42.5%)</td>
<td>19 (47.5%)</td>
</tr>
<tr>
<td>&quot;have probably participated in the module&quot;</td>
<td>20 (50.0%)</td>
<td>19 (47.5%)</td>
</tr>
<tr>
<td>&quot;not know whether I would or would not have partici-</td>
<td>3 (7.5%)</td>
<td>1 (2.5%)</td>
</tr>
<tr>
<td>pated in the module&quot;</td>
<td></td>
<td></td>
</tr>
<tr>
<td>&quot;have probably not participated in the module&quot;</td>
<td>0 (0.0%)</td>
<td>1 (2.5%)</td>
</tr>
<tr>
<td>&quot;have definitely not participated in the module&quot;</td>
<td>0 (0.0%)</td>
<td>0 (0.0%)</td>
</tr>
</tbody>
</table>

Difference-Insignificant at 0.05 level ($X^2 = 2.14$) chi square analysis

The data indicates that 92.5 per cent of the participants in the audio modular experimental group and 95.0 per cent in the audio-visual experimental group would have probably or definitely gone through the experience again. Also there were no responses from the participants to the category "have definitely not participated in the module" and only 1 response, which came from an audio-visual group participant, to the category "have probably not participated in the module." This indicates that the participants would experience a module again if
presented the opportunity. The results of both experimental groups were subjected to a chi square analysis and it was found that $X^2 = 2.14$, entered with 4 degrees of freedom, indicated a P Score of 0.71 which is insignificant at the 0.05 level.

Another question that the participants were asked to respond to was one asking the value of the modular learning experience to them.

The data in Table 9 indicates that 92.5 per cent of the participants

**TABLE 9**

RESULT OF THE RESPONSE TO THE COMPLETION OF THE STATEMENT, "I FOUND PARTICIPATING IN THE AUDIO INSTRUCTIONAL MODULE, STAFF DEVELOPMENT: THE BASIC ELEMENTS OF COMMUNICATION..."

<table>
<thead>
<tr>
<th>Response Pattern</th>
<th>Audio Experimental Responses Made (N=40)</th>
<th>Audio-Visual Experimental Responses Made (N=40)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>No.</td>
<td>%</td>
</tr>
<tr>
<td>&quot;a very valuable learning experience&quot;</td>
<td>15</td>
<td>37.5</td>
</tr>
<tr>
<td>&quot;a learning experience of some value&quot;</td>
<td>22</td>
<td>55.0</td>
</tr>
<tr>
<td>&quot;an experience which is neither valuable nor worthless as far as my own learning&quot;</td>
<td>3</td>
<td>7.5</td>
</tr>
<tr>
<td>&quot;an experience somewhat worthless&quot;</td>
<td>0</td>
<td>0.0</td>
</tr>
<tr>
<td>&quot;an experience which was completely worthless&quot;</td>
<td>0</td>
<td>0.0</td>
</tr>
</tbody>
</table>

Difference-Insignificant at 0.05 level ($X^2 = 0.816$) chi square analysis in the audio group and 90.0 per cent of the participants in the audio-visual group felt that the modular experience was either a very valuable
learning experience or a learning experience of some value. There were no participants in either experimental group that found the experience worthless. This indicates that the modular experience was considered useful to some extent by all the participants. The results of both experimental groups were subjected to a chi square analysis and it was found that \( X^2 = 0.816 \), entered with 4 degrees of freedom, indicated a P Score of 0.93 which is insignificant at the 0.05 level.

The participants were asked if they would participate in additional modules if they had the opportunity again.

The data in Table 10 indicates that 95.0 per cent of the participants

<table>
<thead>
<tr>
<th>TABLE 10</th>
</tr>
</thead>
</table>
| RESULT OF THE RESPONSE TO THE QUESTION, "IF YOU HAD THE OPPORTUNITY WOULD YOU PARTICIPATE IN ADDITIONAL MODULES?"

<table>
<thead>
<tr>
<th>Response Pattern</th>
<th>Audio (N=40)</th>
<th>Experimental (N=40)</th>
<th>Audio-Visual (N=40)</th>
<th>Experimental (N=40)</th>
</tr>
</thead>
<tbody>
<tr>
<td>&quot;yes, definitely&quot;</td>
<td>20</td>
<td>95.0</td>
<td>19</td>
<td>47.5</td>
</tr>
<tr>
<td>&quot;yes, probably&quot;</td>
<td>18</td>
<td>45.0</td>
<td>20</td>
<td>50.0</td>
</tr>
<tr>
<td>&quot;I don't know&quot;</td>
<td>2</td>
<td>5.0</td>
<td>0</td>
<td>0.0</td>
</tr>
<tr>
<td>&quot;probably not&quot;</td>
<td>0</td>
<td>0.0</td>
<td>1</td>
<td>2.5</td>
</tr>
<tr>
<td>&quot;definitely not&quot;</td>
<td>0</td>
<td>0.0</td>
<td>0</td>
<td>0.0</td>
</tr>
</tbody>
</table>

Difference-Insignificant at 0.05 level \( (X^2 = 3.13) \) chi square analysis in the audio group and 97.5 per cent of the participants in the audio-visual group would either probably or definitely participate in additional modules. It is important to notice that 50.0 per cent of the
audio group responses and 47.5 per cent of the audio-visual group responses fell into the "yes, definitely" category. In addition there were not responses to the "definitely not" category and 1 response, which came from an audio-visual participant, to the "probably not" category. This data appears to indicate that the participants would experience additional modules if given the opportunity. The results of both experimental groups were subjected to a chi square analysis and it was found that $X^2 = 3.13$, entered with 4 degrees of freedom, indicated a P Score of 0.539 which is insignificant at the 0.05 level.

The participants were also asked how excited they were in recommending the modular experience to others.

The data in Table 11 indicates 90 per cent of the participants in...
TABLE 11

RESULT OF THE RESPONSE TO THE QUESTION, "HOW EXCITED WOULD YOU BE IN RECOMMENDING TO A FELLOW ADMINISTRATOR THAT HE/ SHE PARTICIPATE IN THIS MODULE?"

<table>
<thead>
<tr>
<th>Response Pattern</th>
<th>Audio Experimental (N=40) Responses Made</th>
<th>Audio-Visual Experimental (N=40)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>No.</td>
<td>%</td>
</tr>
<tr>
<td>&quot;very excited&quot;</td>
<td>12</td>
<td>30.0</td>
</tr>
<tr>
<td>&quot;somewhat excited&quot;</td>
<td>24</td>
<td>60.0</td>
</tr>
<tr>
<td>&quot;no feeling either way&quot;</td>
<td>3</td>
<td>7.5</td>
</tr>
<tr>
<td>&quot;would be reluctant to recommend it&quot;</td>
<td>1</td>
<td>2.5</td>
</tr>
<tr>
<td>&quot;definitely would not recommend it&quot;</td>
<td>0</td>
<td>0.0</td>
</tr>
</tbody>
</table>

Difference-Insignificant at 0.05 level ($X^2 = 1.20$) chi square analysis

the audio group and 90 per cent of the participants in the audio-visual group were excited in recommending the modular experience to other persons. No participants responded to the category "definitely would not recommend it" and only 1 participant, an audio group member, indicated a reluctance to recommend it. The results of both experimental groups were subjected to a chi square analysis and it was found that $X^2 = 1.20$, entered with 4 degrees of freedom, indicated a $P$ Score of 0.977 which is insignificant at the 0.05 level.
The participants were asked to respond to a question asking how excited they were in utilizing the suggested activities and exercises that they were given.

The data in Table 12 indicates that 85.0 per cent of the

TABLE 12

RESULT OF THE RESPONSE TO THE STATEMENT AND QUESTION, "IN THE BACK PAGES OF THE MODULAR GUIDEBOOK ARE PROVIDED A NUMBER OF ACTIVITIES AND EXERCISES WHICH COULD BE USED WITH THE STAFF. HOW EXCITED ARE YOU IN TRYING TO USE SOME OF THESE SUGGESTED ACTIVITIES AND EXERCISES?"

<table>
<thead>
<tr>
<th>Response Pattern</th>
<th>Audio Experimental (N=40)</th>
<th>Audio-Visual Experimental (N=40)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>No.</td>
<td>%</td>
</tr>
<tr>
<td>&quot;very excited&quot;</td>
<td>12</td>
<td>30.0</td>
</tr>
<tr>
<td>&quot;somewhat excited&quot;</td>
<td>22</td>
<td>55.0</td>
</tr>
<tr>
<td>&quot;no feeling either way&quot;</td>
<td>6</td>
<td>15.0</td>
</tr>
<tr>
<td>&quot;would be reluctant to try any&quot;</td>
<td>0</td>
<td>0.0</td>
</tr>
<tr>
<td>&quot;definitely would not try any&quot;</td>
<td>0</td>
<td>0.0</td>
</tr>
</tbody>
</table>

Difference-Insignificant at 0.05 level ($X^2 = 2.97$) chi square analysis participants in the audio group and 80.0 per cent of the participants in the audio-visual group felt excited about the suggested activities and exercises. There were two participants in the audio-visual group that indicated that they would be reluctant to try any of the suggested activities and exercises. The results of both experimental groups were subjected to a chi square analysis and it was found that $X^2 = 2.97$, entered with 4 degrees of freedom, indicated a P Score of 0.565 which
is insignificant at the 0.05 level.

There were a number of questions that the participants were asked to answer pertaining to the technical aspects of the module. The data presented in Table 13 indicates that at least 75.0 per cent of the participants of the audio modular experimental group responded positively to each listed technical aspect. The data in Table 14 indicates that at least 70.0 per cent of the participants of the audio-visual modular experimental group responded positively to each listed technical aspect with three exceptions. Approximately 65.0 per cent of the participants responded positively to the aspect concerning the clarity of instructions, approximately 12.5 per cent of the participants responded positively to the aspect concerning the quality of the filmstrip, and approximately 45.0 per cent of the participants responded positively to the aspect concerning the ease with which the materials could be utilized.

A question designed to find out the attitudes of the participants towards establishing priority scheduling regarding participation in a modular experience during a typical workweek was asked.
<table>
<thead>
<tr>
<th>Technical Aspects</th>
<th>Response Pattern and Number of Responses Made (N=40)</th>
<th>&quot;Needs Improving&quot;</th>
<th>&quot;Average&quot;</th>
<th>&quot;Good&quot;</th>
<th>&quot;Outstanding&quot;</th>
</tr>
</thead>
<tbody>
<tr>
<td>General appearance of the module</td>
<td>No. %</td>
<td>No. %</td>
<td>No. %</td>
<td>No. %</td>
<td>No. %</td>
</tr>
<tr>
<td>Clarity of the modular instructions</td>
<td>No. %</td>
<td>No. %</td>
<td>No. %</td>
<td>No. %</td>
<td>No. %</td>
</tr>
<tr>
<td>Statement of objectives</td>
<td>No. %</td>
<td>No. %</td>
<td>No. %</td>
<td>No. %</td>
<td>No. %</td>
</tr>
<tr>
<td>Appearance of the pages in the text portion</td>
<td>No. %</td>
<td>No. %</td>
<td>No. %</td>
<td>No. %</td>
<td>No. %</td>
</tr>
<tr>
<td>Quality of the cassette</td>
<td>No. %</td>
<td>No. %</td>
<td>No. %</td>
<td>No. %</td>
<td>No. %</td>
</tr>
<tr>
<td>Synchronization between the text and the audio portion</td>
<td>No. %</td>
<td>No. %</td>
<td>No. %</td>
<td>No. %</td>
<td>No. %</td>
</tr>
<tr>
<td>Ease with which the materials can be used</td>
<td>No. %</td>
<td>No. %</td>
<td>No. %</td>
<td>No. %</td>
<td>No. %</td>
</tr>
</tbody>
</table>
TABLE 14

RESULT OF THE RESPONSE TO THE TECHNICAL ASPECTS OF THE AUDIO-VISUAL MODULAR PACKETS

<table>
<thead>
<tr>
<th>Technical Aspects</th>
<th>&quot;Outstanding&quot;</th>
<th>&quot;Good&quot;</th>
<th>&quot;Average&quot;</th>
<th>&quot;Needs Improving&quot;</th>
<th>&quot;Very Poor&quot;</th>
</tr>
</thead>
<tbody>
<tr>
<td>General appearance of the module</td>
<td>20 50.0</td>
<td>16 40.0</td>
<td>2 5.0</td>
<td>2 5.0</td>
<td>0 0.0</td>
</tr>
<tr>
<td>Clarity of the modular instructions</td>
<td>13 32.5</td>
<td>13 32.5</td>
<td>10 25.0</td>
<td>4 10.0</td>
<td>0 0.0</td>
</tr>
<tr>
<td>Statement of objectives</td>
<td>19 47.5</td>
<td>13 32.5</td>
<td>5 12.5</td>
<td>3 7.5</td>
<td>0 0.0</td>
</tr>
<tr>
<td>Appearance of the pages in the text portion</td>
<td>25 62.5</td>
<td>11 27.5</td>
<td>3 7.5</td>
<td>0 0.0</td>
<td>1 2.5</td>
</tr>
<tr>
<td>Quality of the cassette tape</td>
<td>19 47.5</td>
<td>13 32.5</td>
<td>5 12.5</td>
<td>1 2.5</td>
<td>2 5.0</td>
</tr>
<tr>
<td>Quality of the filmstrip</td>
<td>4 10.0</td>
<td>1 2.5</td>
<td>16 40.0</td>
<td>15 37.5</td>
<td>4 10.0</td>
</tr>
<tr>
<td>Synchronization between the text, audio portion, and filmstrip</td>
<td>7 17.5</td>
<td>21 52.5</td>
<td>8 20.0</td>
<td>3 7.5</td>
<td>1 2.5</td>
</tr>
<tr>
<td>Ease with which the materials can be utilized</td>
<td>6 15.0</td>
<td>12 30.0</td>
<td>11 27.5</td>
<td>10 25.0</td>
<td>1 2.5</td>
</tr>
</tbody>
</table>
The data in Table 15 indicates that 20.0 per cent of the

TABLE 15
RESULT OF THE RESPONSE TO THE QUESTION, "DURING YOUR 'TYPICAL' WORKWEEK HOW MUCH PRIORITY WOULD YOU GIVE TO TAKING TIME OUT TO PARTICIPATE IN AN AUDIO MODULAR INSTRUCTIONAL UNIT?"

<table>
<thead>
<tr>
<th>Response Pattern</th>
<th>Audio Experimental (N=40)</th>
<th>Audio-Visual Experimental (N=40)</th>
</tr>
</thead>
<tbody>
<tr>
<td>High Priority</td>
<td></td>
<td></td>
</tr>
<tr>
<td>(6)</td>
<td>4</td>
<td>4</td>
</tr>
<tr>
<td>(5)</td>
<td>4</td>
<td>6</td>
</tr>
<tr>
<td>(4)</td>
<td>24</td>
<td>16</td>
</tr>
<tr>
<td>(3)</td>
<td>4</td>
<td>6</td>
</tr>
<tr>
<td>(2)</td>
<td>2</td>
<td>6</td>
</tr>
<tr>
<td>(1)</td>
<td>2</td>
<td>1</td>
</tr>
<tr>
<td>Low Priority</td>
<td>0</td>
<td>1</td>
</tr>
</tbody>
</table>

Difference—Insignificant at 0.05 level \((X^2 = 5.73)\) chi square analysis

participants in the audio modular experimental group and 25.0 per cent of the audio-visual experimental group ranked participation in the highest or second highest priority. Approximately 60.0 per cent of the audio modular participants and 40.0 per cent of the audio-visual modular participants ranked modular participation in the third highest or middle priority. One audio-visual group member ranked it as lowest priority. The results of both experimental groups were subjected to a chi square analysis and it was found that \(X^2 = 5.73\), entered with 3 degrees of freedom, indicated a P Score of 0.545 which is insignificant at the 0.05 level.
Summary:

The data presented in this section appears to indicate that the participants in both the audio modular and audio-visual modular experimental groups had a positive attitude towards the instructional modules. According to the data presented in the tables, at least 80.0 per cent of the participants responded positively to the non-technical questions. Also it is important to note there were very few negative responses related to the modular experiences.

The data pertaining to the technical aspects indicate that 75.0 per cent of the participants of the audio experimental group responded positively in comparison to 65.0 per cent from participants from the audio-visual experimental group.

The chi square analysis was used to test the differences between the audio group and audio-visual group responses to the non-technical questions. The chi square analysis indicated that there were no significant differences in the attitudes of the audio experimental group and audio-visual group participants toward the modular instructional units.

Any conclusions reached from the results must be viewed with caution at this time. The participants were asked to respond to open-ended questions to supplement the information obtained from the closed questions. The data obtained from the open-ended questions is presented in the next section.
Open-ended Questions

Data

There were a number of open-ended questions included in Phase I of the evaluation packet. These questions are described in Chapter IV. The results of most of these open-ended questions are presented in this section. The participants were asked to state what they learned from the module. They were asked to respond to the question, "What other existing instructional method would you have preferred to participate in, in order to learn this?" The results of this question are presented in Table 16 for the audio modular experimental group and in Table 17 for the audio-visual modular experimental group.

TABLE 16

THE AUDIO EXPERIMENTAL GROUP CATEGORIZED RESPONSES TO THE OPEN-ENDED QUESTION "WHAT OTHER EXISTING INSTRUCTIONAL METHOD WOULD YOU HAVE PREFERRED TO PARTICIPATE IN IN ORDER TO LEARN THIS?"

<table>
<thead>
<tr>
<th>Categories</th>
<th>Number of Responses Made</th>
<th>Percent of Responses Made</th>
</tr>
</thead>
<tbody>
<tr>
<td>No better approaches</td>
<td>20</td>
<td>62.5</td>
</tr>
<tr>
<td>Utilize other audio-visuals</td>
<td>6</td>
<td>18.7</td>
</tr>
<tr>
<td>Participate in group discussion</td>
<td>4</td>
<td>12.5</td>
</tr>
<tr>
<td>Participate in simulation exercise</td>
<td>2</td>
<td>6.3</td>
</tr>
<tr>
<td>Total</td>
<td>32</td>
<td>100.0</td>
</tr>
</tbody>
</table>

* Eight participants did not respond to question.
The data in the tables indicate that 8 participants of the audio experimental group and 9 participants of the audio-visual experimental group did not respond to the question. Approximately 62.5 per cent of the audio experimental group responses fit in the "no better approaches" category and the remaining 37.5 per cent of the responses fit into the following categories: utilizing other audio-visuals, participating in group discussions, and participating in simulation exercises. In comparison, approximately 58.0 per cent of the audio-visual experimental group responses fit into the "no better approaches" category.

**TABLE 17**

THE AUDIO-VISUAL EXPERIMENTAL GROUP CATEGORIZED RESPONSES TO THE OPEN-ENDED QUESTION, "WHAT OTHER EXISTING INSTRUCTIONAL METHOD WOULD YOU HAVE PREFERRED TO PARTICIPATE IN IN ORDER TO LEARN THIS?"

<table>
<thead>
<tr>
<th>Categories</th>
<th>Number of Responses Made</th>
<th>Percent of Responses Made</th>
</tr>
</thead>
<tbody>
<tr>
<td>No better approaches</td>
<td>18</td>
<td>58.0</td>
</tr>
<tr>
<td>Participate in group discussion</td>
<td>6</td>
<td>19.4</td>
</tr>
<tr>
<td>Utilize audio tape without filmstrip</td>
<td>4</td>
<td>12.9</td>
</tr>
<tr>
<td>Learn in actual situation</td>
<td>2</td>
<td>6.5</td>
</tr>
<tr>
<td>Participate in simulation exercise</td>
<td>1</td>
<td>3.2</td>
</tr>
<tr>
<td>Total</td>
<td>31</td>
<td>100.0</td>
</tr>
</tbody>
</table>

* Nine participants did not respond to question.
category. The other 62.0 per cent of the responses fell into the following categories: participating in group discussions, utilizing audio tapes without filmstrips, learning in an actual situation, and participating in simulation exercises.

The responses from both experimental groups indicate that the participants preferred the modular approach as a learning approach.

There were two questions included in the evaluation packet designed to obtain responses related to module weaknesses as perceived by the participants. The questions were (1) "If you had the opportunity to make changes in this module, what changes would you make?" and (2) "What were the major weaknesses of this module?" The responses to these questions were categorized together because of the similarity of questions. The results are presented in Table 18 for the audio group and Table 19 for the audio-visual group.

The data in the tables indicate that there were 73 responses from the audio group and 71 responses from the audio-visual group to the two questions. Three participants of the audio group and 4 participants of the audio-visual group did not respond to one of the questions, and 4 participants of the audio group and 5 participants of the audio-visual group did not respond to the
TABLE 18

THE AUDIO EXPERIMENTAL GROUP CATEGORIZED RESPONSES TO THE OPEN-ENDED QUESTIONS REGARDING WHAT CHANGES THE PARTICIPANT WOULD MAKE AND THE MAJOR WEAKNESS IN THE MODULE EXPERIENCED BY THE PARTICIPANT.

<table>
<thead>
<tr>
<th>Categories</th>
<th>Number of Responses Made</th>
<th>Percent of Responses Made</th>
</tr>
</thead>
<tbody>
<tr>
<td>No changes needed/ no weaknesses found</td>
<td>21</td>
<td>28.8</td>
</tr>
<tr>
<td>Shorter time required to complete module/module too long</td>
<td>20</td>
<td>27.4</td>
</tr>
<tr>
<td>Improve upon instructions/ instructions were unclear</td>
<td>13</td>
<td>17.8</td>
</tr>
<tr>
<td>Remove redundancy in audio portion</td>
<td>7</td>
<td>9.6</td>
</tr>
<tr>
<td>Improve the communication exercise/Remove the communication exercise</td>
<td>3</td>
<td>4.1</td>
</tr>
<tr>
<td>Improve the exercise table/ remove the exercise table</td>
<td>3</td>
<td>4.1</td>
</tr>
<tr>
<td>Improve the module packaging</td>
<td>3</td>
<td>4.1</td>
</tr>
<tr>
<td>Utilize more audio-visuals -- filmstrips, movies</td>
<td>3</td>
<td>4.1</td>
</tr>
<tr>
<td>Total</td>
<td>73</td>
<td>100.0</td>
</tr>
</tbody>
</table>

* Three participants did not respond to change question; four participants did not respond to weakness question.
TABLE 19

THE AUDIO-VISUAL EXPERIMENTAL GROUP CATEGORIZED RESPONSES TO THE OPEN-ENDED QUESTIONS REGARDING WHAT CHANGES THE PARTICIPANT WOULD MAKE AND THE MAJOR WEAKNESS IN THE MODULE EXPERIENCED BY THE PARTICIPANT

<table>
<thead>
<tr>
<th>Categories</th>
<th>Number of Responses Made</th>
<th>Percent of Responses Made</th>
</tr>
</thead>
<tbody>
<tr>
<td>Remove filmstrip component</td>
<td>23</td>
<td>32.4</td>
</tr>
<tr>
<td>Shorten time required to complete module/ module too long</td>
<td>11</td>
<td>15.5</td>
</tr>
<tr>
<td>No changes needed/no weaknesses found</td>
<td>10</td>
<td>14.1</td>
</tr>
<tr>
<td>Improve quality of the filmstrip</td>
<td>8</td>
<td>11.3</td>
</tr>
<tr>
<td>Remove redundancy in audio portion</td>
<td>8</td>
<td>11.3</td>
</tr>
<tr>
<td>Improve the module packaging</td>
<td>3</td>
<td>4.2</td>
</tr>
<tr>
<td>Reduce the written portion</td>
<td>3</td>
<td>4.2</td>
</tr>
<tr>
<td>Equipment requirement a hindrance</td>
<td>3</td>
<td>4.2</td>
</tr>
<tr>
<td>Remove the discussion questions</td>
<td>2</td>
<td>2.8</td>
</tr>
<tr>
<td>Total</td>
<td>71</td>
<td>100.0</td>
</tr>
</tbody>
</table>

* Four participants did not respond to change question; five participants did not respond to weakness question.
second question.

Approximately 28.8 per cent of the audio group responses fell into the category "no changes needed/no weaknesses found" and 27.4 per cent of the responses indicated that the module was too long. The remaining 43.8 per cent of the audio group responses fell into 6 different categories.

In comparison, 32.4 per cent of the audio-visual experimental group responses fell into the category "remove filmstrip component." About 15.5 per cent of the audio-visual experimental group responses indicated that the module was too long; 14.1 per cent of the responses fell into the category "no changes needed/no weaknesses found." The remaining 38.0 per cent of the responses fell into 6 different categories.

The participants were asked to complete the statement, "The major weaknesses of the audio-visual modular instructional approach as an in-service technique are:...". This statement was included in the evaluation packet.

The responses to this statement are categorically presented in Table 20 for the audio experimental group and Table 21 for the audio-visual experimental group.

The data in the tables shows that 32.5 per cent of the audio group responses indicated that there were no weaknesses in the modular approach as compared to 22.1 per cent of the categor-
TABLE 20

THE AUDIO EXPERIMENTAL GROUP CATEGORIZED RESPONSES TO THE OPEN-ENDED STATEMENT, "THE MAJOR WEAKNESSES OF THE AUDIO MODULAR INSTRUCTIONAL APPROACH AS AN IN-SERVICE TECHNIQUE ARE: ...

<table>
<thead>
<tr>
<th>Categories</th>
<th>Number of Responses Made</th>
<th>Percent of Responses Made</th>
</tr>
</thead>
<tbody>
<tr>
<td>No weaknesses found in modular approach</td>
<td>11</td>
<td>32.5</td>
</tr>
<tr>
<td>Time involvement is too great</td>
<td>11</td>
<td>32.5</td>
</tr>
<tr>
<td>There is inadequate feedback</td>
<td>3</td>
<td>8.9</td>
</tr>
<tr>
<td>There is no personal contact with the trainers</td>
<td>2</td>
<td>5.8</td>
</tr>
<tr>
<td>There is too much dependency on intrinsic motivation</td>
<td>1</td>
<td>2.9</td>
</tr>
<tr>
<td>The modules can be a source of frustration</td>
<td>1</td>
<td>2.9</td>
</tr>
<tr>
<td>No allowance made for difference of participant background</td>
<td>1</td>
<td>2.9</td>
</tr>
<tr>
<td>Not enough follow-up material provided</td>
<td>1</td>
<td>2.9</td>
</tr>
<tr>
<td>The module can't be utilized by large groups</td>
<td>1</td>
<td>2.9</td>
</tr>
<tr>
<td>There is need for additional audio-visual aids</td>
<td>1</td>
<td>2.9</td>
</tr>
<tr>
<td>The learning from the modular experience may never be utilized</td>
<td>1</td>
<td>2.9</td>
</tr>
<tr>
<td>Total</td>
<td>34</td>
<td>100.0</td>
</tr>
</tbody>
</table>

* Six participants did not answer question
TABLE 21

THE AUDIO-VISUAL EXPERIMENTAL GROUP CATEGORIZED RESPONSES TO THE OPEN-ENDED STATEMENT, "THE MAJOR WEAKNESSES OF THE AUDIO-VISUAL MODULAR INSTRUCTIONAL APPROACH AS AN IN-SERVICE TECHNIQUE ARE..."

<table>
<thead>
<tr>
<th>Categories</th>
<th>Number of Responses Made</th>
<th>Percent of Responses Made</th>
</tr>
</thead>
<tbody>
<tr>
<td>No weaknesses found in modular approach</td>
<td>8</td>
<td>22.1</td>
</tr>
<tr>
<td>Time involvement is too great</td>
<td>7</td>
<td>19.4</td>
</tr>
<tr>
<td>There is too much equipment required</td>
<td>6</td>
<td>16.7</td>
</tr>
<tr>
<td>The module can't be utilized by large groups</td>
<td>3</td>
<td>8.3</td>
</tr>
<tr>
<td>There is inadequate feedback</td>
<td>3</td>
<td>8.3</td>
</tr>
<tr>
<td>The modules tend to be boring</td>
<td>2</td>
<td>5.6</td>
</tr>
<tr>
<td>The modules do not cover subject material in depth</td>
<td>2</td>
<td>5.6</td>
</tr>
<tr>
<td>The module makes many factors appear irrelevant</td>
<td>1</td>
<td>2.8</td>
</tr>
<tr>
<td>The modules are not designed for a specific school system</td>
<td>1</td>
<td>2.8</td>
</tr>
<tr>
<td>The packaging makes the module look more complicated than it is</td>
<td>1</td>
<td>2.8</td>
</tr>
<tr>
<td>It is difficult to reinforce the learning that has taken place</td>
<td>1</td>
<td>2.8</td>
</tr>
<tr>
<td>There is no personal contact with trainers</td>
<td>1</td>
<td>2.8</td>
</tr>
<tr>
<td>Total</td>
<td>36</td>
<td>100.0</td>
</tr>
</tbody>
</table>

* Four participants did not answer question
ized responses from the audio-visual group. Approximately 32.5 per cent of the audio group responses and 19.4 per cent of the audio-visual group responses indicated that the modular approach involved too much time. In addition about 16.7 per cent of the responses from the audio-visual group indicated that too much equipment was needed. The remaining 35.0 per cent of the audio group responses fell into 9 categories and the remaining 41.8 per cent of the audio-visual group responses fell into 10 categories. About 08.9 per cent of the audio group responses indicated that there is no personal contact with trainers. This is a problem because the modules are designed to be used without a trainer. Six participants from the audio group and 4 participants from the audio-visual group did not respond to the statement.

The participants were also asked to respond to the statement, "The major strengths of the audio-visual modular instructional approach as an in-service technique are:..."

The responses to this statement are categorically presented in Table 22 for the audio group and in Table 23 for the audio-visual experimental group.

The data shows that 38.7 per cent of the audio group responses compared to 33.4 per cent of the audio-visual group responses
TABLE 22

THE AUDIO EXPERIMENTAL GROUP CATEGORIZED RESPONSES TO THE OPEN-ENDED STATEMENT, "THE MAJOR STRENGTHS OF THE AUDIO MODULAR INSTRUCTIONAL APPROACH AS AN IN-SERVICE TECHNIQUE ARE: ..."

<table>
<thead>
<tr>
<th>Categories</th>
<th>Number of Responses Made</th>
<th>Percent of Responses Made</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ease and convenience of module</td>
<td>14</td>
<td>38.7</td>
</tr>
<tr>
<td>The uniqueness of the modular approach</td>
<td>5</td>
<td>13.9</td>
</tr>
<tr>
<td>Provides for active involvement of participant</td>
<td>4</td>
<td>11.1</td>
</tr>
<tr>
<td>Has significance and meaning</td>
<td>4</td>
<td>11.1</td>
</tr>
<tr>
<td>It is easy to follow</td>
<td>2</td>
<td>5.6</td>
</tr>
<tr>
<td>It is not too time consuming</td>
<td>2</td>
<td>5.6</td>
</tr>
<tr>
<td>Provides means for participants to work on relevant issues or problems</td>
<td>2</td>
<td>5.6</td>
</tr>
<tr>
<td>It is a comfortable way to learn</td>
<td>1</td>
<td>2.8</td>
</tr>
<tr>
<td>Allows for participants to control learning environment</td>
<td>1</td>
<td>2.8</td>
</tr>
<tr>
<td>Allows for self-direction</td>
<td>1</td>
<td>2.8</td>
</tr>
<tr>
<td>Total</td>
<td>36</td>
<td>100.0</td>
</tr>
</tbody>
</table>

* Four participants did not respond to question
TABLE 23

THE AUDIO-VISUAL EXPERIMENTAL GROUP CATEGORIZED RESPONSES TO THE OPEN-ENDED STATEMENT, "THE MAJOR STRENGTHS OF THE AUDIO-VISUAL MODULAR INSTRUCTIONAL APPROACH AS AN IN-SERVICE TECHNIQUE ARE:..."

<table>
<thead>
<tr>
<th>Categories</th>
<th>Number of Responses Made</th>
<th>Percent of Responses Made</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ease and convenience of module</td>
<td>12</td>
<td>33.4</td>
</tr>
<tr>
<td>Active involvement of participants</td>
<td>5</td>
<td>13.9</td>
</tr>
<tr>
<td>The uniqueness of the approach</td>
<td>3</td>
<td>8.3</td>
</tr>
<tr>
<td>Provides means to work on relevant issues and problems</td>
<td>3</td>
<td>8.3</td>
</tr>
<tr>
<td>Provides framework in which two people can work together</td>
<td>3</td>
<td>8.3</td>
</tr>
<tr>
<td>Has significance and meaning</td>
<td>2</td>
<td>5.6</td>
</tr>
<tr>
<td>The cassette and exercise are very useful</td>
<td>1</td>
<td>2.8</td>
</tr>
<tr>
<td>Maintains the interest of the participant</td>
<td>1</td>
<td>2.8</td>
</tr>
<tr>
<td>The module generates discussion</td>
<td>1</td>
<td>2.8</td>
</tr>
<tr>
<td>Provides definite learning objectives</td>
<td>1</td>
<td>2.8</td>
</tr>
<tr>
<td>Provides reactions and reinforcement</td>
<td>1</td>
<td>2.8</td>
</tr>
<tr>
<td>The multi-sensory approach cements learning</td>
<td>1</td>
<td>2.8</td>
</tr>
<tr>
<td>Allows for self-direction</td>
<td>1</td>
<td>2.8</td>
</tr>
<tr>
<td>Provides evaluation to participants</td>
<td>1</td>
<td>2.8</td>
</tr>
<tr>
<td>Total</td>
<td>36</td>
<td>100.0</td>
</tr>
</tbody>
</table>

* Four participants did not answer question
indicated the ease and convenience of the modules. These responses show that the ease and convenience of the modules are very important to many of the participants. The remaining responses for the audio group are categorized and presented as follows: 13.9 per cent fit into the uniqueness of approach category, 11.1 per cent fit into the active involvement of participants category, 11.1 per cent fit into the significance and meaning category, and 25.2 per cent fit into 5 other categories. The audio-visual remaining responses are categorized and presented as follows: 13.9 per cent fit into the active involvement of participants category, 8.3 per cent fit into the uniqueness of approach category, 8.3 per cent fit into the means to work on relevant issues and problems category, and 36.2 per cent of the responses fit into 10 other categories.

The investigator attempted to determine whether the participants would utilize the modular approach for their own continuing education. Thus the participants were asked to complete the statement, "If I were to receive an audio (audio-visual) modular instructional unit on Monday of a 'typical week' I would..." The responses to this statement were categorized and presented in Table 24 for the audio group and in Table 25 for the audio-visual group. Five participants from the
### TABLE 24

The Audio Experimental Group Categorized Responses To The Open-Ended Statement, "If I Were To Receive An Audio Modular Instructional Unit On A Monday Of A 'Typical Week' I Would..."

<table>
<thead>
<tr>
<th>Categories</th>
<th>Number of Responses Made</th>
<th>Percent of Responses Made</th>
</tr>
</thead>
<tbody>
<tr>
<td>Complete module in a week</td>
<td>12</td>
<td>34.3</td>
</tr>
<tr>
<td>Complete at convenience of participant</td>
<td>9</td>
<td>25.7</td>
</tr>
<tr>
<td>Complete the module as soon as possible</td>
<td>6</td>
<td>17.1</td>
</tr>
<tr>
<td>Complete module at some later date</td>
<td>5</td>
<td>14.3</td>
</tr>
<tr>
<td>Complete module if it was useful to me</td>
<td>3</td>
<td>8.6</td>
</tr>
<tr>
<td>Total</td>
<td>35</td>
<td></td>
</tr>
</tbody>
</table>

*Five participants did not complete statement

Audio group and 3 participants from the audio-visual group did not respond.

The data in the tables shows that 34.3 per cent of the audio group responses compared to 27.0 per cent of the audio-visual group responses indicated that the module would be completed within a week. The remaining responses for the audio group are categorically presented as follows: 25.7 per cent of the responses indicated completion of the
TABLE 25

THE AUDIO-VISUAL EXPERIMENTAL GROUP CATEGORIZED RESPONSES TO THE OPEN-ENDED STATEMENT, "IF I WERE TO RECEIVE AN AUDIO-VISUAL MODULAR INSTRUCTIONAL UNIT ON MONDAY OF A 'TYPICAL WEEK' I WOULD..."

<table>
<thead>
<tr>
<th>Categories</th>
<th>Number of Responses Made</th>
<th>Percent of Responses Made</th>
</tr>
</thead>
<tbody>
<tr>
<td>complete module in a week</td>
<td>10</td>
<td>27.0</td>
</tr>
<tr>
<td>complete module after the weekend</td>
<td>7</td>
<td>18.9</td>
</tr>
<tr>
<td>complete at convenience of participant</td>
<td>6</td>
<td>16.3</td>
</tr>
<tr>
<td>complete the module as soon as possible</td>
<td>5</td>
<td>13.5</td>
</tr>
<tr>
<td>experience module if topic interested</td>
<td>5</td>
<td>13.5</td>
</tr>
<tr>
<td>participant</td>
<td></td>
<td></td>
</tr>
<tr>
<td>complete module at some later date</td>
<td>2</td>
<td>5.4</td>
</tr>
<tr>
<td>wait for in-service time</td>
<td>1</td>
<td>2.7</td>
</tr>
<tr>
<td>not use the module</td>
<td>1</td>
<td>2.7</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>37</strong></td>
<td><strong>100.0</strong></td>
</tr>
</tbody>
</table>

* Three participants did not complete statement
module at the convenience of the participant, 17.1 per cent indicated that the module would be completed as soon as possible, 14.3 per cent indicated that the module would be completed at a later date, and 8.6 per cent indicated completion of a module if it were useful to the participant. The remaining responses of the audio-visual group are presented as follows: 18.9 per cent indicated that the module would be completed after the weekend, 16.3 per cent of the responses indicated completion of the module at the convenience of the participant, 13.5 per cent indicated that the module would be completed as soon as possible, 13.5 per cent indicated completion of the module if it were useful to the participant, 5.4 per cent indicated the module would be completed at some later date, 2.7 per cent indicated the module would be completed during allotted in-service time, and 2.7 per cent indicated non-completion of the module.

The results from both experimental groups indicate that there is incomplete evidence that the school administrator will take time away from his professional duties to experience a module. The data does indicate that the participants would experience a module at some future time if presented with a module on Monday.
An additional attempt was made to obtain responses from the participants in relation to their interest in the modular approach. The participants were asked what skills, knowledges and topic could be learned through this approach. The two questions that asked this information were (1) "What kinds of skills and knowledges do you think could be learned through the use of audio-visual modular instruction?" and (2) What additional topics might be adopted to audio (audio-visual) modular instruction?"

In Table 26 through Table 29 the responses to these questions are categorically presented. The data indicates that many diverse skills, knowledges, and topics were recommended by the participants. A considerable percentage of these responses relate to communicative and administrative skills and knowledge.
TABLE 26

THE AUDIO EXPERIMENTAL GROUP CATEGORIZED RESPONSES TO THE OPEN-ENDED QUESTION, "WHAT KINDS OF SKILLS AND KNOWLEDGES DO YOU THINK COULD BE LEARNED THROUGH THE USE OF AUDIO-MODULAR INSTRUCTION?"

<table>
<thead>
<tr>
<th>Categories</th>
<th>Number of Responses Made</th>
<th>Percent of Responses Made</th>
</tr>
</thead>
<tbody>
<tr>
<td>almost any skill or knowledge</td>
<td>9</td>
<td>25.7</td>
</tr>
<tr>
<td>communication skills</td>
<td>9</td>
<td>25.7</td>
</tr>
<tr>
<td>listening skills</td>
<td>4</td>
<td>11.4</td>
</tr>
<tr>
<td>most of the administrative skills</td>
<td>3</td>
<td>8.6</td>
</tr>
<tr>
<td>group interaction or group dynamics</td>
<td>3</td>
<td>8.6</td>
</tr>
<tr>
<td>problem-solving or decision-making</td>
<td>2</td>
<td>5.7</td>
</tr>
<tr>
<td>curriculum design and evaluation</td>
<td>2</td>
<td>5.7</td>
</tr>
<tr>
<td>learn a language</td>
<td>2</td>
<td>5.7</td>
</tr>
<tr>
<td>learning by participating</td>
<td>1</td>
<td>2.9</td>
</tr>
<tr>
<td>Total</td>
<td>35</td>
<td>100.0</td>
</tr>
</tbody>
</table>

* Five participants did not answer question
TABLE 27

THE AUDIO-VISUAL EXPERIMENTAL GROUP CATEGORIZED RESPONSES TO THE OPEN-ENDED QUESTION, "WHAT KINDS OF SKILLS AND KNOWLEDGES DO YOU THINK COULD BE LEARNED THROUGH THE USE OF AUDIO-VISUAL MODULAR INSTRUCTION?"

<table>
<thead>
<tr>
<th>Categories</th>
<th>Number of Responses Made</th>
<th>Percent of Responses Made</th>
</tr>
</thead>
<tbody>
<tr>
<td>almost any skill or knowledge</td>
<td>12</td>
<td>34.3</td>
</tr>
<tr>
<td>communication skills</td>
<td>8</td>
<td>22.9</td>
</tr>
<tr>
<td>listening skills</td>
<td>4</td>
<td>11.1</td>
</tr>
<tr>
<td>most of the administrative skills</td>
<td>3</td>
<td>8.6</td>
</tr>
<tr>
<td>group interaction or group dynamics</td>
<td>2</td>
<td>5.7</td>
</tr>
<tr>
<td>learn a language</td>
<td>1</td>
<td>2.9</td>
</tr>
<tr>
<td>leadership skills</td>
<td>1</td>
<td>2.9</td>
</tr>
<tr>
<td>skills in reading or math</td>
<td>1</td>
<td>2.9</td>
</tr>
<tr>
<td>teaching techniques</td>
<td>1</td>
<td>2.9</td>
</tr>
<tr>
<td>technical skills such as budgeting</td>
<td>1</td>
<td>2.9</td>
</tr>
<tr>
<td>module or attitudes</td>
<td>1</td>
<td>2.9</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>35</strong></td>
<td><strong>100.0</strong></td>
</tr>
</tbody>
</table>

* Five participants did not answer question
TABLE 28

THE AUDIO EXPERIMENTAL GROUP CATEGORIZED RESPONSES TO THE OPEN-ENDED QUESTION, "WHAT ADDITIONAL TOPICS MIGHT BE ADAPTED TO AUDIO MODULAR INSTRUCTION?"

<table>
<thead>
<tr>
<th>Categories</th>
<th>Number of Responses Made</th>
<th>Percent of Responses Made</th>
</tr>
</thead>
<tbody>
<tr>
<td>almost any topic</td>
<td>5</td>
<td>22.7</td>
</tr>
<tr>
<td>group counseling techniques</td>
<td>3</td>
<td>13.6</td>
</tr>
<tr>
<td>drawing</td>
<td>2</td>
<td>9.1</td>
</tr>
<tr>
<td>drugs</td>
<td>1</td>
<td>4.5</td>
</tr>
<tr>
<td>sensitizing people</td>
<td>1</td>
<td>4.5</td>
</tr>
<tr>
<td>behavior modification</td>
<td>1</td>
<td>4.5</td>
</tr>
<tr>
<td>role-playing</td>
<td>1</td>
<td>4.5</td>
</tr>
<tr>
<td>public relations</td>
<td>1</td>
<td>4.5</td>
</tr>
<tr>
<td>dealing with the exceptional child</td>
<td>1</td>
<td>4.5</td>
</tr>
<tr>
<td>techniques of the case study approach</td>
<td>1</td>
<td>4.5</td>
</tr>
<tr>
<td>curriculum development</td>
<td>1</td>
<td>4.5</td>
</tr>
<tr>
<td>critiques of lessons in the classroom</td>
<td>1</td>
<td>4.5</td>
</tr>
<tr>
<td>contingency management</td>
<td>1</td>
<td>4.5</td>
</tr>
<tr>
<td>social studies</td>
<td>1</td>
<td>4.5</td>
</tr>
<tr>
<td>racial relationships</td>
<td>1</td>
<td>4.5</td>
</tr>
<tr>
<td>Total</td>
<td>22</td>
<td>100.0</td>
</tr>
</tbody>
</table>
TABLE 29
THE AUDIO-VISUAL EXPERIMENTAL GROUP CATEGORIZED RESPONSES TO THE OPEN-ENDED QUESTION, "WHAT ADDITIONAL TOPICS MIGHT BE ADAPTED TO AUDIO-VISUAL MODULAR INSTRUCTION?"

<table>
<thead>
<tr>
<th>Categories</th>
<th>Number of Responses Made</th>
<th>Percent of Responses Made</th>
</tr>
</thead>
<tbody>
<tr>
<td>almost any subject</td>
<td>8</td>
<td>32.0</td>
</tr>
<tr>
<td>none</td>
<td>3</td>
<td>12.0</td>
</tr>
<tr>
<td>parent training</td>
<td>2</td>
<td>8.0</td>
</tr>
<tr>
<td>behavioral objectives</td>
<td>2</td>
<td>8.0</td>
</tr>
<tr>
<td>business management</td>
<td>1</td>
<td>4.0</td>
</tr>
<tr>
<td>public relations</td>
<td>1</td>
<td>4.0</td>
</tr>
<tr>
<td>value clarification</td>
<td>1</td>
<td>4.0</td>
</tr>
<tr>
<td>school board training</td>
<td>1</td>
<td>4.0</td>
</tr>
<tr>
<td>behavior modification</td>
<td>1</td>
<td>4.0</td>
</tr>
<tr>
<td>in-service training for teachers</td>
<td>1</td>
<td>4.0</td>
</tr>
<tr>
<td>science</td>
<td>1</td>
<td>4.0</td>
</tr>
<tr>
<td>curriculum development</td>
<td>1</td>
<td>4.0</td>
</tr>
<tr>
<td>instructional techniques</td>
<td>1</td>
<td>4.0</td>
</tr>
<tr>
<td>team teaching</td>
<td>1</td>
<td>4.0</td>
</tr>
<tr>
<td>Total</td>
<td>25</td>
<td>100.0</td>
</tr>
</tbody>
</table>
The data presented in the 4 tables indicate that the modular approach is recommended as an in-service administrative learning approach for many skills, knowledges, and topics. Also it indicates a specific interest toward the communication skills and it should be pointed out that the topic of the modules experienced was "Staff Development: Basic Elements of the Communication Process." This could be interpreted to mean that the participants were motivated by the modules.

Summary

Both the "open-ended" and "closed" types of questions were used to compare the attitudes of the participants toward the audio and audio-visual modular approach. The results indicated a favorable attitude toward the modular approach in general. Also the results indicate that the audio group had at least as favorable attitude toward the modular approach as the audio-visual group although the audio-visual packet contained a filmstrip component. The additional equipment requirement of the audio-visual module was deemed as a weakness by some of the audio-visual group participants. Also the data indicated that the ease and convenience of the module were factors considered important to the participants. Almost all of the participants indicated that they would experience a module in the future if they had the opportunity.

In the following section the audio and audio-visual modular experiences are compared to other in-service training experiences completed by the participants.
The Modular In-Service Administrative Training Approach Compared to Other Forms of In-Service Administrative Training

A question included in the evaluation packet asked the participants of the audio experimental group and audio-visual experimental to rank in-service approaches, including the modular approach, as preferred by them. Also there were two blank spaces attached to the list for the participants to add any more in-service approaches as alternatives if desired.

The results to this question are presented on Table 30 for the audio group and on Table 31 for the audio-visual group. The data indicates that 16 participants (43.2 per cent) of the audio experimental group ranked the modular approach as highest order in comparison to 8 participants (20.5 per cent of the audio-visual experimental group. This is important since the ratio is 2 to 1 in favor of the audio module. No additional choices were added to the list in the blanks provided. One participant of the audio group in comparison to 3 participants of the audio-visual group rank ordered the modular approach fifth and no participants from either group listed the modular approach as last.
<table>
<thead>
<tr>
<th>Response</th>
<th>Highest Preference</th>
<th>Lowest Preference</th>
<th>Combined</th>
</tr>
</thead>
<tbody>
<tr>
<td>Attend an administrative conference to listen to speakers</td>
<td>0 8 5</td>
<td>5 11 8</td>
<td>(19)</td>
</tr>
<tr>
<td>Attend an administrative conference involving a number of seminars</td>
<td>1 7 5</td>
<td>5 11 8</td>
<td>(19)</td>
</tr>
<tr>
<td>Purchase a professional level book and read it</td>
<td>0 3 5</td>
<td>3 11 15</td>
<td>(26)</td>
</tr>
<tr>
<td>Visit a neighboring school district</td>
<td>6 2 7</td>
<td>10 8 4</td>
<td>(12)</td>
</tr>
<tr>
<td>Participate in an audio modular instructional unit</td>
<td>16 4 7</td>
<td>9 1 0</td>
<td>(1)</td>
</tr>
<tr>
<td>Have a discussion group session with other administrators from my district</td>
<td>5 16 4</td>
<td>2 4 6</td>
<td>(10)</td>
</tr>
<tr>
<td>Highest Preference</td>
<td>Lowest Preference</td>
<td>Combined</td>
<td></td>
</tr>
<tr>
<td>--------------------</td>
<td>------------------</td>
<td>----------</td>
<td></td>
</tr>
<tr>
<td>1 2 3 4 5 6</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2 2 5 7 13 10</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>9 7 6 9 6 2</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2 2 4 4 7 20</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>7 7 4 8 8 5</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>8 7 15 6 3 0</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>9 14 5 4 2</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Attend an administrative conference to listen to speakers
Attend an administrative conference involving a number of seminars
Purchase a professional level book and read it
Visit a neighboring school district
Participate in an audio (audio-visual)
Have a discussion group session with other administrators from my district

TABLE 31
THE AUDIO-VISUAL EXPERIMENTAL GROUP RESULTS IN RESPONSE TO THE RANKING OF IN-SERVICE APPROACHES IN PREFERENCE ORDER
An additional technique in the form of graphs was utilized to illustrate the findings related to the rank ordering of in-service approaches. The graphs represent the weighted means of the rank order scores. In Figure 12, the graph represents the audio group responses and in Figure 13, the graph represents the audio-visual group responses pertaining to the rank order of preference of the 6 in-service training approaches.

The audio group graph indicates that the mean of the weighted score for the modular approach was 3.68 in comparison to the audio-visual group score of 3.28. The audio group score was highest followed by a 2.95 score representing a preference for a discussion group with administrators. In comparison, the audio-visual group score was second in preference to a score of 3.33 representing a discussion with administrators.

It appears from the data in Figures 12 and 13 that the audio-visual group participants had a higher preference for attending administrative conferences involving seminars and having discussion group meetings with other administrators in their district as compared to the audio group participants. In addition it is conceivable that the modular approach might be incorporated into administrative conferences and discussion group meetings.
<table>
<thead>
<tr>
<th>Activity</th>
<th>Score</th>
</tr>
</thead>
<tbody>
<tr>
<td>Attend an administrative conference to listen to speakers</td>
<td>1.84</td>
</tr>
<tr>
<td>Attend an administrative conference involving a number of seminars</td>
<td>1.86</td>
</tr>
<tr>
<td>Purchase a professional level book and read it</td>
<td>1.19</td>
</tr>
<tr>
<td>Visit a neighboring school district</td>
<td>2.35</td>
</tr>
<tr>
<td>Participate in an audio modular instructional unit</td>
<td>3.68</td>
</tr>
<tr>
<td>Have a discussion group with other administrators from my district</td>
<td>2.95</td>
</tr>
</tbody>
</table>

Fig. 12 - The in-service training approaches for school administrators preferred by the audio group members as determined through the calculation of the means of weighted scores obtained through rank-ordering.
<table>
<thead>
<tr>
<th>Activity</th>
<th>Score</th>
</tr>
</thead>
<tbody>
<tr>
<td>Attend an administrative conference to listen to speakers</td>
<td>1.54</td>
</tr>
<tr>
<td>Attend an administrative conference involving a number of seminars</td>
<td>2.95</td>
</tr>
<tr>
<td>Purchase a professional level book and read it</td>
<td>1.19</td>
</tr>
<tr>
<td>Visit a neighboring school district</td>
<td>2.54</td>
</tr>
<tr>
<td>Participate in an audio (audio-visual) modular instructional unit</td>
<td>3.28</td>
</tr>
<tr>
<td>Have a discussion group with other administrators from my district</td>
<td>3.33</td>
</tr>
</tbody>
</table>

Fig. 13-The in-service training approaches for school administrators preferred by the audio-visual group members as determined through the calculation of the means of weighted scores obtained through rank-ordering.
In order to accumulate additional attitudinal data related to the modular approach as compared to other in-service training approaches, the semantic differential scale was utilized. Specifically the scale was used to determine the reactions of the participants to two concepts: 1) "audio-visual modular training" as one alternative approach for administrative in-service education," and 2) "other administrative in-service training" you have experienced. Results of the audio group and audio-visual group were compared by factors.

In Table 32, a comparison of the results of both experimental groups toward the modular approach as related to evaluation, potency, receptivity, activity, and miscellaneous factors are presented. The mean polarity score of the evaluation factor for the audio group was 4.32 (S.D.=0.71) in comparison to the audio-visual group score of 4.64 (S.D.=0.71). The difference of 0.32 in these scores was found to be not significant at the 0.05 level (F=2.60).

The mean polarity score of the potency factor for the audio group was 4.06 (S.D.=0.74) as compared to the audio-visual group score of 3.95 (S.D.=0.60). The difference in score of 0.11 was found to be not significant at the 0.05 level (F=0.055).
A COMPARISON OF THE RESULTS OF THE RESPONSES TOWARD THE MODULAR INSTRUCTIONAL APPROACH AS AN ALTERNATIVE APPROACH FOR IN-SERVICE EDUCATION FOR SCHOOL ADMINISTRATORS, AS RELATED TO EVALUATION, POTENCY, RECEPTIVITY, ACTIVITY AND MISCELLANEOUS FACTORS DETERMINED THROUGH THE USE OF THE SEMANTIC DIFFERENTIAL

<table>
<thead>
<tr>
<th>Factor</th>
<th>Audio Modular Approach</th>
<th>Audio (Audio-Visual) Approach</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>(N=40) Score</td>
<td>(N=40) Score</td>
</tr>
<tr>
<td>Evaluation</td>
<td>4.32</td>
<td>4.64</td>
</tr>
<tr>
<td>Potency</td>
<td>4.06</td>
<td>3.95</td>
</tr>
<tr>
<td>Receptivity</td>
<td>4.08</td>
<td>4.49</td>
</tr>
<tr>
<td>Activity</td>
<td>3.86</td>
<td>4.19</td>
</tr>
<tr>
<td>Miscellaneous</td>
<td>4.20</td>
<td>4.43</td>
</tr>
</tbody>
</table>

1. Not significant at 0.05 level (F=2.60) analysis of variance
2. Not significant at 0.05 level (F=0.55) analysis of variance
3. Significant at 0.05 level (F=5.33) analysis of variance
4. Significant at 0.05 level (F=4.02) analysis of variance
5. Not significant at 0.05 level (F=2.36) analysis of variance
For the receptivity factor the mean polarity score of the audio group was 4.08 (S.D.=0.67) as compared to the audio-visual score of 4.49 (S.D.=0.88). The results indicate that the difference of 0.41 was found to be significant at the 0.05 level (F=5.33). It should be noted that the participants of the audio-visual group viewed a film strip during their modular experience and that this might have influenced their feelings in a positive manner toward the receptivity factor.

The mean polarity score of the activity factor for the audio group was 3.86 (S.D.=0.66) as compared to the audio-visual group score of 4.19 (S.D.=0.80). Again the difference in score of 0.33 was found to be significant at the 0.05 level (F=4.02). It is important to note that the audio-visual group participants had more functions to perform than the audio group participants due to the requirements of setting up and operating a film strip projector and screen.

The mean polarity score of the miscellaneous factor for the audio group was 4.20 (S.D.=0.69) in comparison to the audio-visual group score of 4.43 (S.D.=0.63). The difference in score of 0.23 was found to be not significant at the 0.05 level (F=2.36).

On Table 33 the results of both experimental groups relating to
A comparison of the results of the responses toward the modular instructional approach with other in-service educational programs for administrators, as related to evaluation, potency, receptivity, and activity factors determined through the use of the semantic differential.

<table>
<thead>
<tr>
<th>Factor</th>
<th>Modular Approach</th>
<th>Other Approaches</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>(N=80)</td>
<td>(N=61)</td>
</tr>
<tr>
<td>Score</td>
<td>Standard Deviation</td>
<td>Score</td>
</tr>
<tr>
<td>Evaluation</td>
<td>4.48</td>
<td>0.89</td>
</tr>
<tr>
<td>Potency</td>
<td>4.35</td>
<td>0.93</td>
</tr>
<tr>
<td>Receptivity</td>
<td>4.36</td>
<td>0.90</td>
</tr>
<tr>
<td>Activity</td>
<td>4.25</td>
<td>0.94</td>
</tr>
</tbody>
</table>

1. Significant at 0.01 level (F=63.66) analysis of variance
2. Significant at 0.01 level (F=19.71) analysis of variance
3. Significant at 0.05 level (F=5.12) analysis of variance
4. Significant at 0.01 level (F=9.50) analysis of variance
four semantic differential factors toward the "modular instructional approach" as compared with "other in-service approaches" are presented. The mean polarity score of the evaluation factor of both experimental groups for the "modular approach" was 4.48 (S.D.=0.89) as compared to the "other approaches" score of 3.15 (S.D.=1.08). The difference in score of 1.33 was found to be significant at the 0.01 level (F=63.66).

For the potency factor related to the "modular approach" as compared to "other approaches," a mean polarity score of 4.35 (S.D.=0.93) was calculated as to 3.61 (S.D.=1.02) for "other approaches." Again the difference, 0.74 was found to be significant at the 0.01 level (F=19.71) in favor of the "modular approach."

The mean polarity score of the receptivity factor for the "modular approach" was 4.36 (S.D.=0.90) in comparison to the "other approaches" score of 3.96 (S.D.=1.20). The difference in score of 0.40 was found to be significant at the 0.05 level (F=5.12).
The activity factor had a mean polarity score of 4.25 (S.D.=0.94) towards the "modular approach" as compared to a score of 3.71 (S.D.=1.14) towards "other approaches." It was found that the difference of 0.54 was significant at the 0.01 level (F=9.50).

The mean polarity score of the activity factor for the "modular approach" was 4.25 (S.D.=0.94) as compared to the "other approaches" score of 3.71 (S.D.=1.14). The difference of 0.54 was found to be significant at the 0.01 level (F=9.50).

It appears from the analyses of variances that the results indicate the "modular instructional approach" scores are significantly higher than the scores of the "other in-service approaches" for the four semantic differential factors. The semantic differential is a disguised method of obtaining information. The data indicates that the participants liked the "modular approach" much better than "other in-service approaches" in which they had participated.

In Table 34, a comparison of the results of both experimental groups relating to the two polar traits toward the "modular instructional approach" as compared with "other in-service approaches" are presented. The mean polarity score for the polar trait non-threatening - threatening for the "modular approach" was 4.59 (S.D.=1.12) in comparison to the "other approaches" score of 3.50 (S.D.=1.47). The difference of 1.00 was significant at the 0.01 level (F=25.26).

<table>
<thead>
<tr>
<th>Polar Trait</th>
<th>Modular Approach</th>
<th>Other Approaches</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>(N=80)</td>
<td>(N=61)</td>
</tr>
<tr>
<td>Non-threatening - Threatening</td>
<td>4.59 1.12</td>
<td>3.50 1.47</td>
</tr>
<tr>
<td>Relevant - Irrelevant</td>
<td>4.80 0.80</td>
<td>3.26 1.43</td>
</tr>
</tbody>
</table>

1. Significant at 0.01 level (F=25.26) analysis of variance
2. Significant at 0.01 level (F=65.14) analysis of variance
The mean polarity score for the polar trait relevant - irrelevant for the "modular approach" was 4.80 (S.D.=0.80) as compared to the "other approaches" score of 3.26 (S.D.=1.43). The difference of 1.54 was found to be significant at the 0.01 level (F=65.14).

On Table 35. a comparison of experimental group toward the "modular instructional approach" with "other in-service approaches" as related to the evaluation factor was presented. The mean polarity score of the evaluation factor for the audio experimental group related to the "modular approach" was 4.32 (S.D.=0.71) as compared to the "other approaches" score of 3.07 (S.D.=0.89). The difference of 1.16 was significant at the 0.01 level (F=42.47).

The mean polarity score of the evaluation factor for the audio-visual experimental group related to the "modular approach" was 4.64 (S.D.=1.02) in comparison to the "other approaches" score of 3.23 (S.D.=1.25). The difference of 1.41 was found to be significant at the 0.01 level (F=27.16).
TABLE 35

A COMPARISON OF THE RESULTS OF THE RESPONSES TOWARD THE MODULAR INSTRUCTION APPROACH WITH OTHER IN-SERVICE EDUCATIONAL PROGRAMS FOR ADMINISTRATORS, AS RELATED TO THE EVALUATION FACTOR BY EXPERIMENTAL GROUP

<table>
<thead>
<tr>
<th>Audio Experimental Group</th>
<th>Concept I</th>
<th>Concept II</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>(N=40) Standard Score</td>
<td>(N=30) Standard Score</td>
</tr>
<tr>
<td>Factor</td>
<td>Deviation</td>
<td>Deviation</td>
</tr>
<tr>
<td>Evaluation</td>
<td>4.32</td>
<td>0.71</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Audio-Visual Experimental Group</th>
<th>Modular Approach</th>
<th>Other Approaches</th>
</tr>
</thead>
<tbody>
<tr>
<td>Factor</td>
<td>(N=40) Standard Score</td>
<td>(N=31) Standard Mean</td>
</tr>
<tr>
<td>Evaluation</td>
<td>4.64</td>
<td>1.02</td>
</tr>
</tbody>
</table>

1. Significant at 0.01 level (F=42.47) analysis of variance
2. Significant at 0.01 level (F=27.16) analysis of variance
Summary

It is apparent that the data in this section indicated the conclusion that the "modular approach" is preferred over "other in-service approaches" the participants had experienced, for the continuing education of school administrators. In addition it appears that significant differences appear for the receptivity and activity factors of the semantic differential scale and not for the other factors of evaluation, potency, and miscellaneous in the comparison between the audio and audio-visual experimental groups. The additional component of the film strip to the audio-visual module appears to account for the significant differences of the two factors.
A Comparison of the Audio Experimental Group, Audio-Visual Experimental Group, and the Control Group as to Achievement and the Results Obtained

The results from the objective portion of the evaluation packet are presented in this section in an attempt to locate, identify, and measure the amount of change that had taken place due to the modular experience.

A three group design composed of two equivalent experimental groups and a nonequivalent control group was utilized in order to compare achievement data collected.

On Table 36 the individual scores are presented according to group. On Table 37 the results of the comparative scores relating to the achievement tests by the two experimental groups and the control group are presented.

The mean score of the audio experimental group was 10.25 (S.D.=1.21) and the control group score of 6.03 (S.D.=1.81).

The difference in score of 0.08 between the audio experimental group and the audio-visual experimental group was not significant at the 0.05 level (F=0.09). However, the difference in score between the audio group and control group of 4.22 and the audio-visual group and control group of 4.14 were found
<table>
<thead>
<tr>
<th>Audio Experimental Group (N=40)</th>
<th>Audio-Visual Experimental Group (N=40)</th>
<th>Control Group (N=28)</th>
</tr>
</thead>
<tbody>
<tr>
<td>10 10</td>
<td>9 11</td>
<td>3 6</td>
</tr>
<tr>
<td>10 10</td>
<td>9 10</td>
<td>8 5</td>
</tr>
<tr>
<td>9 10</td>
<td>10 11</td>
<td>3 6</td>
</tr>
<tr>
<td>11 10</td>
<td>9 7</td>
<td>3 7</td>
</tr>
<tr>
<td>9 11</td>
<td>9 10</td>
<td>7 8</td>
</tr>
<tr>
<td>9 10</td>
<td>10 11</td>
<td>4 5</td>
</tr>
<tr>
<td>11 11</td>
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<td>3 6</td>
</tr>
<tr>
<td>11 10</td>
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<td>5 10</td>
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<tr>
<td>11 9</td>
<td>10 9</td>
<td>6 8</td>
</tr>
<tr>
<td>11 10</td>
<td>12 10</td>
<td>5 8</td>
</tr>
<tr>
<td>12 12</td>
<td>10 9</td>
<td>6 7</td>
</tr>
<tr>
<td>11 11</td>
<td>10 11</td>
<td>8 6</td>
</tr>
<tr>
<td>9 10</td>
<td>10 6</td>
<td>7 8</td>
</tr>
<tr>
<td>11 11</td>
<td>12 10</td>
<td>5 6</td>
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<tr>
<td>10 10</td>
<td>10 11</td>
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<tr>
<td>11 11</td>
<td>10 12</td>
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<tr>
<td>10 9</td>
<td>11 9</td>
<td></td>
</tr>
<tr>
<td>7 10</td>
<td>10 12</td>
<td></td>
</tr>
<tr>
<td>10 11</td>
<td>10 11</td>
<td></td>
</tr>
<tr>
<td>10 11</td>
<td>11 11</td>
<td></td>
</tr>
</tbody>
</table>
### TABLE 37

**Comparisons of the Audio Experimental Group, Audio-Visual Experimental Group, and Control Group in Relation to the Achievement Scores Measuring Cognitive Aspects of the Concept Presented in the Module**

<table>
<thead>
<tr>
<th>Group</th>
<th>Mean Score</th>
<th>S.D.</th>
<th>Number</th>
<th>Difference in Score</th>
</tr>
</thead>
<tbody>
<tr>
<td>Audio Experimental</td>
<td>10.25</td>
<td>0.95</td>
<td>40</td>
<td>0.08</td>
</tr>
<tr>
<td>Audio-Visual Experimental</td>
<td>10.17</td>
<td>1.21</td>
<td>40</td>
<td>4.22</td>
</tr>
<tr>
<td>Control</td>
<td>6.03</td>
<td>1.81</td>
<td>28</td>
<td>4.14</td>
</tr>
</tbody>
</table>

1. Not significant at 0.05 level (F=0.09) analysis of variance
2. Significant at 0.01 level (F=104.27) analysis of variance
to be significant at the 0.01 level (F=104.27).

The results indicate that no significant difference was found between experimental groups but it appears that a significant amount of learning took place due to the modular experience of the participants.

Investigator Perceptions Based on Informal Interviews with the Participants After Their Modular Experience

In this section the investigator presented his perceptions based on informal interviews with the participants shortly after they had experienced a module. In many cases, these interviews took place when the investigator procured the completed modules from the participants.

Most of the participants involved in the field testing of the modules reacted in a positive manner towards the modules as an in-service approach for school administrators. An important factor to many of the participants was the opportunity to learn at their desired place and time with having to travel to a university. A second factor of great importance was the opportunity to actively participate in the learning experience such as the communication exercise. A third factor of importance was the packet of exercises they received that could be used for measuring the staff communication process in their schools and for
training their staff in the development of a two-way co-
munnication process. Many principals said they would use
this material in the future.

There were some technical problems reported by audio-
visual participants. In at least two cases, the participants
did not know how to operate a filmstrip projector. Some par-
ticipants experienced problems in obtaining the use of a film-
strip projector and attributed it to the limited number avail-
able. These individuals took longer than a week to complete
the experience. Many of the audio-visual participants stated
that the projector was a nuisance to obtain, carry, set up,
and operate.

The participants from both experimental groups had no
problems in securing a cassette recorder. In fact there were
no complaints from the audio group participants regarding module
operating problems.

An important factor to most of the participants of both
experimental groups was the time factor. It was often recom-
mended that the module length should be shortened. Unfortunately
the evaluation packet required at least 40 minutes to complete
and this added to the time commitment of the participants.

An interesting process to note was the selection process
of modules by the participants. In the vast majority of cases, whenever the participants had the choice to select an audio module or audio (audio-visual) module, they selected the audio module.

Most of the participants expressed great interest in learning about staff communications. There were a number of requests for other modules relating to staff development skills and concepts. A number of principals requested use of additional communication modules for their staff.

Many of the participants stated they believed the material included in the communication module was beneficial to them. Some requested additional information regarding communication skills such as how to develop listening skills.

Summary

The information received through the interviews indicates that the modular approach is an effective means for the continuing education of school administrators. Also it appears that the participants of the audio-visual group were not as satisfied as the audio group participants due to need of additional equipment.
CHAPTER VI

SUMMARY, CONCLUSIONS, AND RECOMMENDATIONS

The purpose of this study was to compare the suitability of using the audio modular instructional approach with an audio-visual instructional approach for introducing staff development concepts and skills to school administrators. Also to determine the suitability of the modular approach as an alternative approach for the in-service training of school administrators. The findings were presented and analyzed in the preceding chapter. In this chapter the methodology used in the study will be reviewed and the findings will be summarized and presented. The conclusions arrived at from these findings will follow. Then the recommendations based on these findings and conclusions will be presented.

The Procedure

There were 80 participants involved in the field testing of the instructional modules in order to compare the suitability of using the audio modular instructional approach with an audio-visual modular instructional approach as an alternative method for the continuing education of school administrators. Forty participants experienced the audio module and 40 participants experienced the audio-visual module on staff communication. The 2 experimental groups were equivalent in composition and comprised of school administrators, teachers, school secretaries, and wives of educators. Also there were 28 members of a nonequivalent control group.
There were five different assessment methods utilized in the study for comparing the audio module and audio-visual module as an in-service approach for school administrators. These methods were 1) "closed" questions on a written questionnaire for identifying the attitude of the participant toward the modular experience; 2) "open-ended" questions on a written questionnaire for identifying the attitude of the participant toward the modular experience; 3) a comparison of the attitudes of the participants that experienced the audio module and the audio-visual module to that of other types of in-service training programs through utilization of "open-ended" and "closed" questions on a questionnaire; 4) determination and comparison of cognitive changes that took place in the participants after experiencing the audio module and audio-visual module; and 5) investigator perceptions related to informal interviews after participants experienced a module. A brief summary of these methods are presented in the next section.

Utilization of "closed" questions for determining the attitude of the audio and audio-visual modules: The participants were asked to respond to a number of "closed" questions in the evaluation packet after they had experienced a module. The questions were designed to determine the attitude of the participants relating to interest, learning value, and technical aspects of the module. The responses were categorized and the number and per cent computed for the two experimental groups. This data for the audio and audio-visual experimental groups were compared and subjected to a chi square analysis.

Utilization of "open-ended" questions for determining the attitude of the participants toward the audio and audio-visual modules: The participants were asked to respond to a number of "open-ended" questions in the
evaluation packet after they had experienced a module. A number of these questions related to the attitude of the participants toward the specific modules. The other "open-ended" questions were designed primarily for obtaining responses toward the modular approach and potential knowledge that might be gained through utilization of modules. The responses for each of the questions were categorized and computed as to total number and per cent and compared with the computed responses of the "closed" questions for determination of the existence of patterns. Most of the results to the "open-ended" questions were analyzed separately.

A comparison of the attitudes of the participants experiencing the audio module and the audio-visual module to other in-service approaches:

There were two methods utilized in this study to obtain this information. A question in the evaluation packet asked the participants to rank in order of preference a list of six types of in-service approaches. Included in this list was the modular instructional approach. There were two blank lines included in the answer section for the participants to add any approaches not included in the list. The collected data was processed by 1) computing the number and times each approach was ranked according to order preferences; and 2) assigning to each response a numerical value and determining for each answer the weighted mean score.

The semantic differential scale was utilized to determine the reactions of the participants to three concepts: 1) audio modular or audio-visual modular instruction as an alternative approach for in-service education for school administrators; 2) modular instructional approach as an alternative approach for in-service education for school administrators; and 3) in-service educational programs designed for school administrators in which you have participated (excluding the modular approach). The mean polarity
scores were computed for the factors: 1) evaluation; 2) potency; 3) receptivity; 4) activity; and 5) miscellaneous. A comparison in mean polarity scores of these factors was made between the experimental groups and control group for each of the two concepts by means of a statistical analysis of variance to determine if the differences were significant.

Measurement of cognitive changes: The posttest-only non-equivalent control group design with two equivalent quasi-experimental groups were utilized to measure the cognitive changes of the participants experiencing the audio and audio-visual modules. The control group consisted of 28 educators that completed the achievement test without experiencing the module. The two experimental groups each had 40 participants and were equivalent in relation to the following criteria: 1) sex; 2) age; 3) present position; 4) number of years of administrative experience; 5) setting of the school in which the member was employed; and 6) highest academic degree held by the individual. All the participants in the experimental groups had experienced a module before completing an achievement test.

The achievement test was validated and tested for reliability. The study population that participated in the validation process consisted of 28 graduate students.

The differences in mean scores between the experimental groups and the control group were subjected to a statistical analysis of variance to determine if the differences were significant.

Investigator perception: The information obtained by the investigator through informal interviews with the participants was analyzed and added to the other data for formulating conclusions.
In the following sections the summary and conclusions are presented based upon data collected and analyzed from the procedures described above.

Summary

In this section summaries of the findings are presented.

A Comparison of the Participants' Attitude toward the Audio Module and Audio-Visual Module: Results Summarized

The data indicates that the participants had a positive attitude towards their experience with either the audio or audio-visual module. Results of the "closed" questions show that at least 90 per cent of the participants of both experimental groups responded in a positive manner. The differences were subjected to a chi square analysis and the results of the analysis indicates that there were no significant differences between responses of the audio and audio-visual experimental groups in relation to the participants' attitudes toward the modules. Also it is important to note that there were very few negative responses related to the modular experiences. These results appear to indicate that the participants found the modular approach interesting, worthwhile, and worth repeating.

It appears that there were no significant differences in the results of the "closed" and "open-ended" questions related to priority scheduling of participation in a module during a typical workweek. The data from the "closed" question indicate that 20.0 per cent of the participants in the audio group and 25.0 per cent of the audio-visual group ranked participation in the highest or second highest priority. Approximately 60.0 per cent of the audio group participants and 40.0 per cent of the audio-visual
group participants ranked modular participation in the third highest priority. One audio-visual group member ranked it as lowest priority. The responses to this question were subjected to a chi square analysis and the difference of responses between the audio experimental group and the audio-visual experimental group were found to be not significant. On the "open-ended" question 34.3 per cent of the audio group responses compared to 27.0 per cent of the audio-visual responses indicated that the module would be completed within a week. Approximately 100 per cent of the audio group and 97.3 per cent of the audio-visual group indicated they would experience the module if they were to receive one and it was useful to them. The results indicate that it can not be determined that school administrators will take time from their professional duties to experience a module. It appears that most of the participants would experience a module at some future time if presented with a module on Monday.

The data collected from the "open-ended" questions asking responses to the major weaknesses and strengths of the modular approach indicates some differences between the audio group and the audio-visual group. Approximately 32.5 per cent of the audio group responses indicated that there were no weaknesses in the modular approach as compared to 22.1 per cent of the categorized responses from the audio-visual group. Thirty-two and a half per cent of the audio group responses as compared to 19.4 per cent of the audio-visual group responses indicated that the modular approach involved too much time of the participants. The modular experience involved from 1 1/2 to 3 hours to complete. The data appears to indicate that the communication instructional was too long and that future modules should be designed to require less of a time commitment from the participants. In addition about 16.7 per cent of the responses from the
audio-visual group indicated that too much equipment was needed. This referred to the requirement of a cassette player, a film strip projector, and a projection screen. It is important to note that no responses from the audio experimental group indicated that the equipment requirement, a cassette player, was a weakness.

There were few differences between experimental groups in the responses to the question pertaining to major strengths of the modular approach. The data shows that 38.7 per cent of the audio group responses compared to 33.4 per cent of the audio-visual group responses indicated the ease and convenience of the modules. Also that 13.9 per cent of the audio group responses fit into "uniqueness of approach" category as compared to 8.3 per cent for the audio-visual group and 11.1 per cent of the audio group responses fit into the "active involvement of participant" category as compared to 13.9 per cent for the audio-visual group. The data indicates that the modular approach is acceptable to the participants because of the ease and convenience of the modules, the uniqueness of approach, and its involvement of the participants.

The Cognitive Changes that Occurred After Experiencing the Modules: Results Summarized

The data indicates that no significant difference was found between experimental groups but a significant amount of learning took place due to the modular experience of the participants of both experimental groups. The achievement test was validated and tested for reliability. A three group design composed of two equivalent experimental groups and a nonequivalent control group was utilized.
The mean score of the audio experimental group was 10.25 as compared to the audio-visual group score of 6.03. The difference in score of 0.08 between the audio group and the audio-visual group was not significant at the 0.05 level \((F = 0.09)\). The difference in score between the audio group and the control group of 4.22 and the audio-visual group and control group of 4.14 were found to be significant at the 0.01 level \((F = 104.27)\).

The results indicate that there was no significant difference of mean scores found for the achievement tests between audio and audio-visual experimental groups. Also it appears that a significant cognitive change occurred in the participants as a result of their modular experience. This data shows that the modular approach is an effective in-service instructional approach for school administrators.

For the miscellaneous factor the mean polarity score of the audio group was 4.20 as compared to the audio-visual group mean score of 4.43. It was found that the difference in score of 0.23 was not significant at the 0.05 level \((F = 2.36)\).

It appears from the data that no significant differences were found between the audio and audio-visual experimental groups for the semantic differential scale factors of evaluation, potency, and miscellaneous. Also that the significant differences found for the factors of receptivity and activity appear to exist because of the film strip component of the audio-visual module.

The data collected from use of the semantic differential scale measuring the concept of the "modular approach" and the concept of "other in-service approaches" indicate that the "modular approach" was
preferred in comparison to "other in-service approaches." The mean polarity score of the evaluation factor was 4.48 as compared to 3.15 for the concept of "other in-service approaches" and the difference in the score of 1.33 was found to be significant at the 0.01 level ($F = 63.66$). For the potency factor the mean polarity score of 4.35 was compared to the "other in-service approaches" score of 3.61. Again the difference, 0.74, was found to be significant at the 0.01 level ($F = 19.71$). The mean polarity score of the receptivity factor of 4.36 for the modules as compared to 3.96 for "other approaches" showed a difference of 0.40 which was found to be significant at the 0.05 level ($F = 5.12$).

The mean polarity score of the activity factor was 4.25 for the modules and 3.71 for "other in-service approaches." The difference of 0.54 was found to be significant at the 0.01 level ($F = 9.50$). The mean polarity score for the polar trait non-threatening - threatening was 4.59 for the "modular approach" as compared to 3.50 for "other approaches." The difference of 1.00 was found to be significant at the 0.01 level ($F = 25.26$). The mean polarity score for the polar trait relevant - irrelevant for the "modular approach" was 4.80 and 3.26 for "other approaches." The difference of 1.54 was found to be significant at the 0.01 level ($F = 65.14$).

The results indicate that the difference in attitude of the participants towards the "modular approach" in comparison to "other in-service approaches" they experienced is significantly different in favor of the "modular approach." This data shows that the participants have a very positive attitude towards the modular approach as a suitable
alternative for the in-service training of school administrators.

A Comparison of the
Attitudes of the Participants
that Experienced the Audio
Module and Audio-Visual
Module to that of other Types
of In-service Approaches:
Results Summarized

The results indicate that 43.2 per cent of the audio experimental group ranked the modular approach as highest order in comparison to 20.5 per cent of the audio-visual group. The weighted mean score for the audio experimental group was 3.68 in comparison to the audio-visual group score of 3.28. The audio group mean score was highest followed by a 2.95 score representing a preference for "a discussion group with administrators." In comparison, the audio-visual group score was second in preference to a score of 3.33 representing a "discussion with administrators" approach. The "discussion with administrators" approach and "attending administrative conferences with seminars" approach gained in preference by the audio-visual group participants and the modular approach earned less of a mean score.

The data obtained from use of the semantic differential scale to measure the responses of both experimental groups and to compare attitudes toward the modular approach concept as related to evaluation, potency, receptivity, activity, and miscellaneous factors indicate that significant differences exist in two of the factors. The mean polarity score of the evaluation factor for the audio group was 4.32 in comparison to the audio-visual group score of 4.64. The difference of 0.32 was found to be not significant at the 0.05 level (F = 2.60). The mean
polarity score of the potency factor for the audio group was 4.06 as compared to the audio-visual group score of 3.95. The difference in score of 0.11 was found to be not significant at the 0.05 level ($F = 0.55$). The mean polarity score of the receptivity factor for the audio group was 4.08 in comparison to the audio-visual group score of 4.49. The difference was found to be significant at the 0.05 level ($F = 5.33$). The mean polarity score of the activity for the audio group was 3.86 as compared to the audio-visual group score of 4.19. The difference in score of 0.33 was found to be significant at the 0.05 level ($F = 4.02$).

It is important to note that a film strip was included as an additional component of the audio-visual module and that this visual aid probably accounts for the significant difference regarding the receptivity factor. In addition the extra effort required to obtain, set up, and operate the film strip projector appears to account for the significant difference in the results of the activity factor between the two experimental groups.

It appears that the addition of the filmstrip to the module is of concern to participants since it reduces the ease and convenience of the modules. Another concern indicated by the participants is the time involvement or length of the module.

A considerable number of skills, knowledges, and topics were suggested by the participants as adaptable to the modular approach. Approximately 25.7 per cent of the audio group responses suggested almost any skill or knowledge and 25.7 per cent of the responses listed communication skills as kinds of skills and knowledges they thought could be learned through modules. Thirty-four per cent of the
audio-visual group responses listed almost any skill or knowledge and 22.9 per cent suggested communication skills. A number of other skills, knowledges, and topics were listed by the participants of both experimental groups. The results indicate that the modular approach is perceived by a sizeable number of the participants as adaptable to a great many skills, knowledges, and topics. Also that the results showed that the participants suggested communication skills as adaptable to the modular approach. The modules were on the subject of communications and it appears that the participants were motivated to learn more about communications.

**Investigator Perceptions**  
**Based on Informal Interviews**  
**With the Participants**

The results of the investigator's informal interviews indicate that the participants of the audio-visual group did not believe that the film strip was worth the effort expended to procure the film strip projector and screen, transport the equipment, and operate the projector. The audio group participants did indicate any logistical problems related to the audio modules. It was indicated by the participants of both experimental groups that the modular approach is a very effective and stimulating technique for the continuing education of school administrators.
Conclusions

From an analysis and summary of the findings, a general conclusion must be made; that is, no conclusion can be reached as to the suitability of utilizing the modular instructional approach as one alternative in-service training technique for school administrators. The answers to two major questions could not be determined from an analysis of the findings of the study. Before a conclusion can be reached as to the suitability of the modular approach, these answers must be determined. These questions are:

1. What are the attitudinal changes that take place as a result of participating in the modular instructional unit?
2. Will the administrator take time out from his duties during a "typical week" to participate in a modular instructional unit?

Some minor conclusions were reached from a summary of the findings. These conclusions are as follows:

1. The audio modular instructional approach is as suitable as the audio-visual modular instructional approach for the continuing education of school administrators. This conclusion is based on the findings which indicated that both approached were equal as a) the cognitive changes which occurred as a result of participating in the modular units; b) the connotative meaning of either modular instructional approach, in relation to the polar traits of potency, evaluation, activity, and receptivity; c) the interest shown toward the participation in the modular experiences; d) the value of the modular experience to the
participants' own learning; and e) the degree of excitement demonstrated by the participants' toward an opportunity to participate in additional modular instructional units.

2. The modular instructional approach provides an experience for an individual which is perceived of as being a) interesting and exciting; b) a valuable learning experience; and 3) an experience which is worth repeating.

3. The experience with the modular instructional approach is perceived by the participants as being of more worth than a) attending an administrative conference to listen to speakers; b) attending an administrative conference in which a number of seminars are provided; c) purchasing a professional level book and reading it; and d) visiting a neighboring school district.

4. The experience with the modular instructional approach is perceived by the participants as being of equal worth as having a discussion group session with other administrators from the participants' own school district.

5. When compared to other in-service approaches in which the individuals have participated, the modular instructional approach illicits a statistically significant higher positive connotative meaning for the following polar traits: a) potency, b) evaluation, c) activity, and d) receptivity.

6. The participants perceive that a major strength of the modular instructional approach is the ease and convenience with which the
materials can be used.

7. The participants perceive that a major weakness of the modular instructional approach is the length of time required to complete the unit. The amount of time to complete the unit. The amount of time to complete the unit is too long.

8. Cognitive changes occur in the participants as a result of participating in the modular unit. The nature of these cognitive changes are focused on the achievement of a greater number of the performance objectives which are stated at the beginning of the instructional unit.

Recommendations

The recommendations based upon the findings and conclusions of the study will be presented in two sections, namely, 1) those that are pertinent to the further development and use of modular instructional units; and 2) those that are pertinent to further research on the modular instructional approach.

Recommendations for Further Development and Use of Modular Instructional Units

1. Further modules should be developed utilizing basically the same approach as that used in the present audio modular instructional units. The following criterion should be utilized:

   a. The modules should not require the participant to take over one hour to complete the unit. The length of time
to complete the module should be from 30 to 60 minutes.

b. The modules should be constructed so that they allow for active involvement and interaction of the participants experiencing the unit together.

c. Care should be exercised to maintain a high level of technical quality for the audio tapes and a high degree of attractiveness and readability for the pages in the Guidebook. Whenever possible, commercial sources should be used to produce the audio tapes and the pages in the Guidebook.

d. The audio modular instructional unit should include the beginning instructions on the audio tape as well as in the Guidebook. It should be designed so that the participants start with the audio tape rather than the Guidebook.

e. Proper feedback procedures should be included throughout the unit so that the participants are able to test their perceptions against the perceptions and knowledge of the persons who develop the unit. Care must be taken in order to avoid too much redundancy or the feeding back of obvious answers.

f. A number of exercises should be included at the end of the unit. The purpose for including these exercises is to encourage the participant of the module to take the role of facilitator of a large group. The participant of the module should be directed to study the exercises and utilize
the appropriate ones with his instructional staff. These exercises should be based on the objectives which are stated for the audio modular instructional unit in which they are included.

2. Further modules incorporating a modified form of the audio-visual modular instructional approach should be developed and field tested. The following criterion should be used in the development of these modular units.

a. The filmstrip should be incorporated in the unit as an individual component. It should be used as a medium for presentation, and should not be used as a major medium for giving instructions to the participant throughout the modular unit. The major medium for providing instructions to the participant should be the audio tape and the Guidebook.

b. The filmstrip should be of a high level of technical quality. If possible it should be produced by a commercial firm.

c. A filmstrip should be used only if the purpose for its use cannot be achieved through the use of the pages in the guidebook or the audio tape. Examples of the conditions under which a filmstrip might be used are as follows:
   a) when the use of color is necessary; b) when photographs are needed in the presentation; c) when the filmstrip can also be used with one of the exercises included at the end
of the module (for use in a large group presentation); d) when a presentation utilizes a large number of sequential pictorial views which must be viewed in rapid succession; and e) when a filmstrip has been previously produced, and the modular unit utilizes it as the basis for the presentation.

d. If a filmstrip is be be developed as a component of the unit it should be of a nature so that it can fulfill a dual purpose. It should serve as a component of the modular unit, in addition to serving as a medium for presentation for a large group session. A number of alternatives should be suggested for the use of the filmstrip in a large group presentation. A requirement for the person utilizing the filmstrip in a large group presentation should be that this person has participated in the modular unit previous to the large group presentation.

e. If a filmstrip is not adaptable for a large group presentation, it is doubtful whether the development of such a component for a module would be economical. In this case, the use of an audio modular instructional unit would be more efficient. A creative use of the pages in the Guidebook supported by the use of the audio tape should provide the capability of accomplishing the functions required for the mastering of the learning tasks.

f. If a sequential series of audio-visual instructional units are to be developed, a low-cost filmstrip projector should
be included in the modular package.

3. Modular units incorporating the use of an audio cassette tape only should be developed and field tested.

4. Audio modular instructional units should be developed for the specific purpose of providing a structure for bringing administrators, within a school district, together to interact on critical issues in the school district.

5. Audio modular instructional units should be developed for use in a school administrators' conferences. The modular units would provide the structure for the facilitation of the small group seminars at the conference.

Recommendations for Further Studies on the Modular Instructional Approach

1. Instruments should be constructed, validated, and made reliable; and appropriate research design should be identified so that these could be incorporated to determine the attitudinal changes that take place as a result of participating in a modular instructional unit.

2. An assessment approach should be identified to determine whether the school administrator would take time off from his day-by-day duties to participate in the modular instructional units. This approach should incorporate a less structured means of dissemination of the modular units, than was used in the present study. For example, a random sample of administrators should be sent a modular unit via the
mail. A short letter of introduction would indicate that the unit would be picked up in the near future. Two weeks later the investigator should go to the school administrators to pick up the modular units. At this time the investigator would conduct structured interviews with the administrators, and make a request that they complete a number of assessment instruments. The interviews would be conducted with each administrator whether he had completed the modular unit or not.

3. The audio modular instructional approach should be compared with a modular instructional unit which utilizes an audio cassette tape only. A possible starting point would be to develop an audio tape only unit, based on the performance objectives and procedures from the audio modular instructional unit, "Staff Development: Basic Elements of Communication." An experimental group should be selected which is equivalent to the experimental groups used in the present study. The experimental group for the proposed study would participate in the audio tape unit, and would then respond to the same assessment instruments used in the present study. The data generated from the proposed study could then be compared with the data from the present study.

4. Original modular instructional units utilizing the audio tape only should be developed and field tested. These units should be based on performance objectives which enables the audio tape only component to have a high degree of capability of accomplishing the functions required for the mastering of the learning tasks.

5. An assessment study should be designed for the purpose of
comparing the modular instructional approach with other forms of in-service training for school administrators. Through the use of an equivalent control group design, one group could experience the modular instructional unit, and the second group could participate in the other in-service approach. Preferrably the other in-service approach would be an administrators' conference incorporating the use of small group seminars, or a discussion group involving a number of administrators from the same school district. The participants in the present study indicated a preference to these two approaches.
APPENDIX A

PAGES FROM THE INTRODUCTION TO THE AUDIO MODULAR AND AUDIO-VISUAL MODULAR UNITS
STAFF DEVELOPMENT: BASIC ELEMENTS OF THE
COMMUNICATION PROCESS

These Audio Modular Instructional Materials
have been developed under the joint direction of:

Roger H. Peck
Robert S. Levine
and
Arthur W. Eve

Center for Leadership and Administration
School of Education
University of Massachusetts

and

James A. Moore

Associate Program Development
Florida State Department of Education
Tallahassee, Florida
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<td>Description of Module</td>
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<td>Prerequisite</td>
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<td>INSTRUCTIONS TO THE PARTICIPANT</td>
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<td>CHARTS</td>
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INTRODUCTION

PURPOSE OF AUDIO MODULAR INSTRUCTION

This instruction is directed toward school principals, assistant principals, and other school personnel involved in the general area of staff development. It is designed to stimulate these staff leaders to carefully scrutinize the communication behavior which they have established with the staff; and to initiate actions which focus on reducing the possible barriers to administrator - staff understanding which may presently exist in their schools.

DESCRIPTION OF THE MODULE

This module deals with the basic elements of the communication process. It focuses on the process of communication as it is defined from its Latin derivation, communis. Through becoming personally involved in the exercise included in the module, the participants have the opportunity to develop their own conclusions as to the differences between a situation in which two-way communication exists, and one in which communication goes one way.

Upon completion of this module the participant should be able to:

1. Define "communication" as it relates to its Latin derivation, communis.
2. Describe the two basic elements of the one-way communication process.
3. Describe the origin and nature of four hazards to successful communication. ["Successful communication,"
in this case, relates to the definition of communication given in #1 (above). The reference points for the identification of the hazards to successful communication are the basic elements described in #2 (above).

4. Describe two advantages and two disadvantages of the one-way communication process, as opposed to the two-way process. (This description is to be based on an analysis of a personal experience in being involved in the two forms of the communication process.)

5. Distinguish between the feelings or attitudes generated as a result of being involved in a one-way communication process, as compared to the two-way process. (This distinction is to be based on an analysis of a personal experience in being involved in the two forms of the communication process, both as a source and as a receiver of information.)

6. Identify two existing personal administrative behaviors which reflect a reliance upon the one-way communication process, and describe two effects that these behaviors might have upon the members of the school staff.

Upon completion of this module the participant should be able to:

7. Describe two personal administrative actions which could be initiated, the purpose of which would be to reduce the possible barriers to administrator - staff understanding which may presently exist in the school. (These actions should focus on reducing the barriers resulting
from practices which reflect or encourage a reliance upon the one-way communication process.)

8. Conduct two analyses in your school for determining if one-way or two-way communication exists between you and your staff. In the first analysis a Staff Communication Analysis Chart will be utilized. This analysis procedure includes the following criteria:
   a. Staff comments
   b. Staff suggestions
   c. Staff criticisms
   d. Staff recommendations
   e. Other responses

A second analysis designed to measure the communication conditions in your school will be a questionnaire to be distributed to your staff for completion.

A communication exercise has been included as an integral component of this audio instructional module. In this exercise the participants have the opportunity to distinguish between a situation in which two-way communication exists, as compared to one in which communication goes one way. Participation in this exercise is important for a complete understanding of the modular experiences.

PREREQUISITE

None.

TIME REQUIRED

Approximately one and one-half hours.
MATERIALS AND RESOURCES REQUIRED

1. Audio Instruction two-track magnetic cassette tape, recorded at a speed of 1 7/8 inches per second. The tape for "Staff Development: The Basic Elements of the Communication Process" is enclosed.

2. A cassette tape recorder.

3. A 35 mm filmstrip.

4. A 35 mm filmstrip projector.

5. A projection screen.

6. This Audio-Visual Instruction Module Guidebook.

7. A pencil and several sheets of scratch paper.

8. A clock or watch with a second hand attached.

9. Both individuals participating in the module. The second individual could include any of the following: other administrators, your spouse, an older student, a teacher, a secretary, or another friend.
INSTRUCTIONS TO THE PARTICIPANT

You will derive the greatest benefit from this instructional module by observing the following suggestions:

1. Take the module where you will not be interrupted, and give it your complete attention.

2. Set aside sufficient time (approximately one and one-half hours) so that you can follow the instruction through to its conclusion.

3. Do both Sections of the communication exercise, and fill in all of the necessary data in the data tables.

THE INSTRUCTION STARTS ON THE TAPE. The instructor will refer to and explain the information given in the Guidebook. This information appears in the form of Charts - diagrams, text, etc. This module is reusable, since it is not necessary for you to mark in the Charts or otherwise enter information in the Guidebook. Review questions should be answered on a separate sheet of paper. Several sheets with blank data tables are enclosed for you to enter the information from the Exercise. The sheets can be reproduced should additional copies be needed.

Any comments, criticisms, or suggestions as to how this instruction could be improved will be welcomed. Address:

Roger H. Peck
Center for Leadership and Administration
School of Education
University of Massachusetts
Amherst, Massachusetts 01002

OR

James A. Moore
Associate Program Development
Room 374, Knott Building
Department of Education, State of Florida
Tallahassee, Florida 32304

YOU SHOULD NOW BE READY TO PARTICIPATE IN THE MODULE. PLEASE TURN TO NEXT PAGE TO CHART 1 AND START TAPE.
STAFF DEVELOPMENT: BASIC ELEMENTS OF THE COMMUNICATION PROCESS

These Audio-Visual Modular Instructional Materials have been developed under the joint direction of:

Roger H. Peck
Robert S. Levine
and
Arthur W. Eve

Center for Leadership and Administration
School of Education
University of Massachusetts

and

James A. Moore
Associate Program Development
Florida State Department of Education
Tallahassee, Florida
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CHARTS
INTRODUCTION

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Room 374, Knott Building  
Department of Education, State of Florida  
Tallahassee, Florida 32304

YOU SHOULD NOW BE READY TO PARTICIPATE IN THE MODULE. PLEASE START TAPE AND FILMSTRIP.
APPENDIX B

TABLE B-1 THROUGH TABLE B-6

FIGURE B-1 THROUGH FIGURE B-4
<table>
<thead>
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### TABLE B-2

**DATA COMPUTED FOR THE PEARSON PRODUCT-MOMENT CORRELATION (TEST 1 AND TEST 2)**

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TABLE B-3

SCORES OF TEST 2 AND TEST 3 OF THE EXPERIMENTAL GROUP

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</table>

TABLE B-4

DATA COMPUTED FOR THE PEARSON PRODUCT-MOMENT CORRELATION (TEST 2 AND TEST 3 OF EXPERIMENTAL GROUP)

<table>
<thead>
<tr>
<th>X</th>
<th>x</th>
<th>Y</th>
<th>y</th>
<th>X^2</th>
<th>Y^2</th>
<th>X*Y</th>
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</thead>
<tbody>
<tr>
<td>15</td>
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<td>0</td>
<td>13</td>
<td>2</td>
<td>49</td>
<td>169</td>
</tr>
<tr>
<td>16</td>
<td>6</td>
<td>-1</td>
<td>11</td>
<td>0</td>
<td>36</td>
<td>121</td>
</tr>
<tr>
<td>17</td>
<td>8</td>
<td>1</td>
<td>12</td>
<td>1</td>
<td>64</td>
<td>144</td>
</tr>
<tr>
<td>18</td>
<td>4</td>
<td>-3</td>
<td>12</td>
<td>1</td>
<td>16</td>
<td>144</td>
</tr>
<tr>
<td>19</td>
<td>8</td>
<td>1</td>
<td>11</td>
<td>0</td>
<td>64</td>
<td>121</td>
</tr>
<tr>
<td>20</td>
<td>5</td>
<td>-2</td>
<td>12</td>
<td>1</td>
<td>25</td>
<td>144</td>
</tr>
<tr>
<td>21</td>
<td>8</td>
<td>1</td>
<td>12</td>
<td>1</td>
<td>64</td>
<td>144</td>
</tr>
<tr>
<td>22</td>
<td>9</td>
<td>2</td>
<td>9</td>
<td>-2</td>
<td>81</td>
<td>81</td>
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<td>23</td>
<td>7</td>
<td>0</td>
<td>12</td>
<td>1</td>
<td>49</td>
<td>144</td>
</tr>
<tr>
<td>24</td>
<td>9</td>
<td>2</td>
<td>12</td>
<td>1</td>
<td>81</td>
<td>144</td>
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<tr>
<td>25</td>
<td>7</td>
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<td>11</td>
<td>0</td>
<td>49</td>
<td>121</td>
</tr>
<tr>
<td>26</td>
<td>6</td>
<td>-1</td>
<td>10</td>
<td>-1</td>
<td>36</td>
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<td>27</td>
<td>6</td>
<td>-1</td>
<td>11</td>
<td>0</td>
<td>36</td>
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<td>28</td>
<td>4</td>
<td>-3</td>
<td>10</td>
<td>-1</td>
<td>16</td>
<td>100</td>
</tr>
<tr>
<td>TOTALS</td>
<td>94</td>
<td>158</td>
<td>666</td>
<td>1798</td>
<td>1061</td>
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</table>
TABLE B-5

THE SQUARED DEVIATIONS FROM THE MEAN FOR TEST 2 AND TEST 3 OF THE EXPERIMENTAL GROUP

<table>
<thead>
<tr>
<th></th>
<th>$x_2$</th>
<th>$x_3$</th>
</tr>
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<tr>
<td>0</td>
<td>0</td>
<td>4</td>
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<tr>
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<td>0</td>
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<td>0</td>
</tr>
<tr>
<td>9</td>
<td>1</td>
<td>1</td>
</tr>
<tr>
<td><strong>TOTAL:</strong></td>
<td><strong>36</strong></td>
<td><strong>16</strong></td>
</tr>
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</table>
## TABLE F. Distribution of $t$

<table>
<thead>
<tr>
<th>df</th>
<th>.10</th>
<th>.05</th>
<th>.025</th>
<th>.01</th>
<th>.005</th>
<th>.001</th>
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</thead>
<tbody>
<tr>
<td>1</td>
<td>1.669</td>
<td>1.964</td>
<td>2.831</td>
<td>3.007</td>
<td>4.541</td>
<td>5.303</td>
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<td>2</td>
<td>2.306</td>
<td>2.845</td>
<td>3.372</td>
<td>3.890</td>
<td>5.959</td>
<td>6.711</td>
</tr>
<tr>
<td>4</td>
<td>3.634</td>
<td>3.980</td>
<td>4.502</td>
<td>5.078</td>
<td>6.975</td>
<td>7.609</td>
</tr>
<tr>
<td>5</td>
<td>4.241</td>
<td>4.607</td>
<td>5.056</td>
<td>5.637</td>
<td>7.449</td>
<td>7.998</td>
</tr>
<tr>
<td>6</td>
<td>4.821</td>
<td>5.205</td>
<td>5.635</td>
<td>6.172</td>
<td>7.917</td>
<td>8.484</td>
</tr>
<tr>
<td>7</td>
<td>5.375</td>
<td>5.744</td>
<td>6.203</td>
<td>6.684</td>
<td>8.360</td>
<td>8.944</td>
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<tr>
<td>10</td>
<td>6.914</td>
<td>7.211</td>
<td>7.781</td>
<td>8.114</td>
<td>9.571</td>
<td>10.221</td>
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<tr>
<td>12</td>
<td>7.838</td>
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<td>8.753</td>
<td>9.032</td>
<td>10.302</td>
<td>10.990</td>
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<tr>
<td>120</td>
<td>15.267</td>
<td>16.745</td>
<td>17.588</td>
<td>18.311</td>
<td>20.180</td>
<td>21.681</td>
</tr>
</tbody>
</table>

**SOURCE:** Table F is abridged from Table III of Fisher & Yates: *Statistical Tables for Biological, Agricultural, and Medical Research*, published by Oliver & Boyd Ltd., Edinburgh, and by permission of the authors and publishers.
\[ r = \frac{\sum xy - \bar{x} \cdot \bar{y}}{\sqrt{\sum x^2 - \bar{x} \cdot \bar{x}} \cdot \sqrt{\sum y^2 - \bar{y} \cdot \bar{y}}} \]

\[ r = \text{correlation coefficient between } x \text{ and } y \]

\[ n = \text{number of pairs} \]

\[ x = \text{individual scores of Test 1} \]

\[ y = \text{individual scores of Test 2 (retest)} \]

**Computation of formula - data from Table 2**

\[ r = \frac{1133 - (169)(178)}{28} \]

\[ \sqrt{1109 - (169)(169)} \cdot \sqrt{1220 - (178)(178)} \]

\[ = \frac{1133 - 30082}{28} \]

\[ \sqrt{1109 - 28561} \cdot \sqrt{1220 - 31484} \]

\[ = 1133 - 1074.3 \]

\[ \sqrt{1109 - 1020.0} \cdot \sqrt{1220 - 1124.4} \]

\[ = \frac{58.6}{\sqrt{89} \cdot \sqrt{95.6}} \]

\[ = \frac{58.6}{92.1} \]

\[ r = 0.6 \]

**Fig. B-1--The Pearson Product-Moment Correlation Formula and Computation for Test 1 and Test 2 (retest).**
\[ r = \frac{\Sigma XY - \Sigma X \cdot \Sigma Y}{\sqrt{\Sigma X^2 - \frac{1}{n} \Sigma X \cdot \Sigma X} \cdot \sqrt{\Sigma Y^2 - \frac{1}{n} \Sigma Y \cdot \Sigma Y}} \]

\[ = \frac{1061 - \frac{(94)(158)}{14}}{\sqrt{666 - \frac{(94)(94)}{14}} \cdot \sqrt{1798 - \frac{(158)(158)}{14}}} \cdot \frac{0.1}{\sqrt{666 - 631.1} \cdot \sqrt{1798 - 1783.1}} \approx 0.04 \]

\[ r = 0.04 \]

Fig. B-2—The Pearson Product-Moment Correlation Formula and Computation for Test 2 and Test 3 of the Experimental Group.

\[ s^2 = \frac{\Sigma x^2}{n-1} \]

\[ s^2 = \text{the variance of a sample} \]

\[ x^2 = \text{the sum of the squared deviations from the mean} \]

\[ n = \text{the number of cases} \]

Variance for Test 2
\[ \Sigma x^2 = 36 \quad \text{36} \]
\[ s^2 = n-1 = 14-1 = 13 = 2.8 \]

Variance for Test 3
\[ \Sigma x^2 = 16 \quad \text{16} \]
\[ s^2 = n-1 = 14-1 = 13 = 1.2 \]

Fig. B-3—The Variance Formula and Computations for Test 2 and Test 3 of the Experimental Group.
\[ t = \frac{\bar{X}_2 - \bar{X}_3}{\sqrt{s^2_2 + s^2_3}} \]

\( t \) = the value by which the statistical significance of the mean difference will be judged

\( \bar{X}_2 \) = the mean of group 2

\( \bar{X}_3 \) = the mean of group 3

\( s^2_2 \) = the variance of group 2

\( s^2_3 \) = the variance of group 3

\( n_2 \) = the number of subjects in group 2

\( n_3 \) = the number of subjects in group 3

\[ t = \frac{6.7 - 11.3}{\sqrt{\frac{2.8}{14} + \frac{1.2}{14}}} = -4.6 = -4.6 = -4.6 = 8.5 \]

\[ 2.8 + 1.2 \]

\[ \frac{14}{14} + \frac{.2 + .09}{.29} \]

\[ t = 8.5 \]

Fig. B-4 -- The t Test Formula and Computation for Test 2 and Test 3 of the Experimental Group.
APPENDIX C

INSTRUMENTS USED IN THE STUDY
<table>
<thead>
<tr>
<th>NAME:</th>
<th>DATE:</th>
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</table>

<table>
<thead>
<tr>
<th>ADDRESS:</th>
<th>STREET</th>
<th>CITY</th>
<th>STATE</th>
</tr>
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</table>

<table>
<thead>
<tr>
<th>DATE OF BIRTH:</th>
<th>MONTH</th>
<th>YEAR</th>
<th>SEX: FEMALE</th>
<th>MALE</th>
</tr>
</thead>
</table>

<table>
<thead>
<tr>
<th>PRESENT EMPLOYER:</th>
<th>NAME</th>
</tr>
</thead>
</table>

<table>
<thead>
<tr>
<th>PRESENT POSITION</th>
<th>ADDRESS</th>
<th>HIGHEST DEGREE HELD</th>
</tr>
</thead>
</table>

- ELEMENTARY TEACHER
- SECONDARY TEACHER
- ELEMENTARY ASSISTANT, PRINCIPAL
- SECONDARY ASSISTANT, PRINCIPAL
- ELEMENTARY PRINCIPAL
- SECONDARY PRINCIPAL
- GRADUATE STUDENT (FULL-TIME)
- UNDERGRADUATE STUDENT
- OTHER (EXPLAIN)

<table>
<thead>
<tr>
<th>TYPE OF SCHOOL IN WHICH YOU ARE PRESENTLY EMPLOYED</th>
<th>SCHOOL ENROLLMENT</th>
<th>SETTING</th>
<th>STUDENT SOCIOECONOMIC BACKGROUND</th>
</tr>
</thead>
<tbody>
<tr>
<td>ELEMENTARY</td>
<td>0-200</td>
<td>URBAN</td>
<td>UPPER</td>
</tr>
<tr>
<td>JR. HIGH</td>
<td>201-400</td>
<td>SUBURBAN</td>
<td>MIDDLE</td>
</tr>
<tr>
<td>SR. HIGH</td>
<td>401-600</td>
<td>RURAL</td>
<td>LOWER</td>
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</table>

(CHECK ANY COMBINATION WHICH APPLIES)

<table>
<thead>
<tr>
<th>SCHOOL ENROLLMENT</th>
<th>SETTING</th>
<th>STUDENT SOCIOECONOMIC BACKGROUND</th>
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<tr>
<td>601-800</td>
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</tr>
<tr>
<td>801-1000</td>
<td>SUBURBAN</td>
<td>MIDDLE</td>
</tr>
<tr>
<td>1001-1200</td>
<td>RURAL</td>
<td>LOWER</td>
</tr>
<tr>
<td>1201 up</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

ANY FURTHER DESCRIPTION OF THE SCHOOL: 

NUMBER OF YEARS YOU HAVE HAD AS A CLASSROOM TEACHER

IF YOU ARE PRESENTLY IN AN ADMINISTRATIVE POSITION, HOW LONG HAVE YOU BEEN IN YOUR PRESENT POSITION

NUMBER OF YEARS YOU HAVE BEEN IN EDUCATIONAL ADMINISTRATION
PHASE I

Phase I contains the following two parts:

Part I—Opinionnaire for the audio modular instructional unit, "Staff Development: The Basic Elements of Communication."

Part II—Opinionnaire for the audio modular instructional approach.

Directions:

When completing the multiple choice questions, place a check-mark on the line next to the statement that most appropriately answers the question or completes the sentence. When answering the open-ended questions, write your answers in brief form.

Please complete Phase I before beginning Phase II.
PHASE I

Part I

Opinionnaire for the audio modular instructional unit, "Staff Development: The Basic Elements of Communication."

Directions: When completing the multiple choice questions, place a check-mark on the line next to the statement that most appropriately answers the question or completes the sentence. When answering the open-ended questions, write your answers in brief form.

1. I found participating in the audio instructional module, "Staff Development: The Basic Elements of Communication",
   
   ___ a) very interesting.
   
   ___ b) somewhat interesting.
   
   ___ c) somewhat boring.
   
   ___ d) very boring.

2. I found participating in the audio instructional module, "Staff Development: The Basic Elements of Communication",
   
   ___ a) a very valuable learning experience.
   
   ___ b) a learning experience of some value.
   
   ___ c) an experience which is neither valuable nor worthless as far as my own learning.
   
   ___ d) an experience somewhat worthless.
   
   ___ e) an experience which was completely worthless.

3. What was the major strength of this specific audio instructional module?

4. What was the major weakness of this specific audio instructional module?
5. Which of the following responses represents the total time you spent participating in the module?

   a) 30 - 40 minutes
   b) 45 - 60 minutes
   c) 60 - 75 minutes
   d) 75 - 90 minutes
   e) 90 - 105 minutes
   f) 105 - 120 minutes
   g) over 2 hours
   h) over 2.5 hours

6. I feel that the experience I gained from participating in this module

   a) was definitely worth this amount of time.
   b) was probably worth this amount of time.
   c) may or may not have been worth this amount of time.
   d) was probably not worth this amount of time.
   e) was definitely not worth this amount of time.

7. It it was discovered that this module was too time consuming, and you were involved in revising it, what portion would you definitely keep in the module?

   What portion would you remove?
8. Now that I know what the module is like, if I had had the choice I would
   _____ a) have definitely participated in the module.
   _____ b) have probably participated in the module.
   _____ c) not know whether I would or would not have participated in the module.
   _____ d) have probably not participated in the module.
   _____ e) have definitely not participated in the module.

9. How excited would you be in recommending to a fellow administrator that he/she participate in this module?
   _____ a) very excited
   _____ b) somewhat excited
   _____ c) no feeling either way
   _____ d) would be reluctant to recommend it
   _____ e) definitely would not recommend it

10. Briefly state what you feel you have learned from this module.

What other existing instructional method would you have preferred to participate in, in order to learn this?
11. The following items focus on the technical aspects of the audio instructional module, "Staff Development: The Basic Elements of Communication." Please circle the numeral at the right of the statement which best represents your evaluation of the particular aspect mentioned in the statement. Use the following scale:

1. Outstanding
2. Good
3. Average
4. Needs improving
5. Very poor

a) The general appearance of the module .................................................. 1 2 3 4 5
b) The clarity of the module instructions .................................................. 1 2 3 4 5
c) The statement of objectives ................................................................. 1 2 3 4 5
d) The appearance of the pages in the text portion ..................................... 1 2 3 4 5
e) The quality of the cassette tape ........................................................... 1 2 3 4 5
f) The synchronization between the text and the audio portion .................. 1 2 3 4 5
g) The ease and convenience with which the materials (exercises, cassette tape, extra guidebook, etc.) can be utilized .................. 1 2 3 4 5

12. Complete the following statements:

a) The discussion questions in this module ..............................................

b) The exercise in which you participated in this module .........................

c) The diagrams in this module ..............................................................

d) The variety of voices in this module ...................................................

e) One change that I would make in this module ......................................

f) One aspect of this module which should definitely remain the same .........
11. The following items focus on the technical aspects of the audio instructional module, "Staff Development: The Basic Elements of Communication." Please circle the numeral at the right of the statement which best represents your evaluation of the particular aspect mentioned in the statement. Use the following scale:

1. Outstanding
2. Good
3. Average
4. Needs improving
5. Very poor

a) The general appearance of the module
b) The clarity of the module instructions
c) The statement of objectives
d) The appearance of the pages in the text portion
e) The quality of the cassette tape
f) The quality of the filmstrip
g) The synchronization between the text, audio portion, and filmstrip
h) The ease and convenience with which the materials (exercises, cassette tape, filmstrip, extra guidebooks, etc. can be utilized

12. Complete the following statements:

a) The discussion questions in this module
b) The exercise in which you participated in this module
c) The diagrams in this module
d) The filmstrip in this module
e) The variety of voices in this module
f) One change that I would make in this module
g) One aspect of this module which should definitely remain the same
13. In the back pages of the modular guidebook are provided a number of activities and exercises which could be used with the staff. How excited are you in trying to use some of these suggested activities and exercises?

____ a) very excited
____ b) somewhat excited
____ c) no feeling either way
____ d) would be reluctant to try any
____ e) definitely would not try any

Part II
Opinionnaire for the audio modular instructional approach.

Directions: When completing the multiple choice questions, place a check-mark on the line next to the statement that most appropriately answers the question or completes the sentence. When answering the open-ended questions, write your answers in brief form.

14. If you had the opportunity would you participate in additional modules?

____ a) yes, definitely
____ b) yes, probably
____ c) I don't know
____ d) probably not
____ e) definitely not
15. Suppose you were given the time and the money to participate in the following in-service educational programs. Assuming they would be equal in cost and the amount of time required, rank the following approaches in the order of your preference. Start with the numeral one for your highest preference; numeral two as second, and so on.

   ___a) attend an administrative conference to listen to speakers.
   ___b) attend an administrative conference involving a number of seminars.
   ___c) purchase a professional level book and read it.
   ___d) visit a neighboring school district.
   ___e) participate in an audio modular instructional unit.
   ___f) have a discussion group session with other administrators from my district.

   (Below add any more in-service educational program approaches you might choose as an alternative.)

   ___g) __________________________________________
   ___h) __________________________________________

16. For the following question place an X between the : : which best represents your feelings.

   During your "typical" workweek how much priority would you give to taking time out to participate in an audio modular instructional unit:

17. The major **strengths** of the audio modular instructional approach as an in-service technique are:

18. The major **weaknesses** of the audio modular instructional approach as an in-service technique are:

19. Please complete the following statements:

   a) I would spend time participating in an audio modular instructional unit only if___________________________

   b) I would definitely not spend time participating in an audio modular instructional unit if___________________________

   c) For anyone to develop any more audio modular instructional units would___________________________

   d) If I were to receive an audio modular instructional unit on a Monday of a "typical" work-week I would___________________________
20. What kinds of skills and knowledge do you think could be learned through the use of audio modular instruction?

21. What additional topics might be adapted to audio modular instruction?

22. Any additional comments.
Phase II contains the following three parts:

Part I-Semantic Differential

Part II-Achievement Test for the audio modular instructional unit, "Staff Development: The Basic Elements of Communication."

Part III-Semantic Differential

Directions: When completing the multiple choice questions, place a check-mark on the line next to the statement that most appropriately answers the question or completes the sentence. When answering the open-ended questions, write your answers in brief form.
Part I

FIRST SEMANTIC DIFFERENTIAL INSTRUCTIONS

The purpose of this study is to measure the meanings of certain things to various people by having them judge them against a series of descriptive scales. In completing this scale, please make your judgments on the basis of what these things mean to you. You will find two concepts to be judged and beneath them a set of scales. You are to rate the concept on each of these scales in order.

Here is how you are to use these scales: If you feel that the concept at the top of the page is very closely related to one end of the scale, you should place your check-mark as follows:


If you feel that the concept is quite closely related to one end of the scale or the other (but not extremely), you should place your check-mark as follows:


If the concept seems only slightly related to one side as opposed to the other side (but is not really neutral), then you should check as follows:


The direction toward which you check, of course, depends upon which of the two ends of the scale seem most characteristic of the thing which you are judging. If you consider the concept to be neutral on the scale, both sides of the scale equally associated with the concept, or if the scale is completely irrelevant, unrelated to the concept, then you should place your check-mark in the middle space.


Be sure to check every scale for every concept --- do not omit any.
For the following concept, place an X between the : : : near the word which most nearly represents your feeling about the concept. The closer you place the X to the word, the more the word represents your feeling.

**AUDIO MODULAR INSTRUCTION AS ONE ALTERNATIVE APPROACH FOR IN-SERVICE EDUCATION FOR SCHOOL ADMINISTRATORS (CONCEPT)**

<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
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<td>RELAXED</td>
</tr>
<tr>
<td>-----------------</td>
<td>---------</td>
<td>---------</td>
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<tr>
<td>NON-THREATENING</td>
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</tr>
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<td>INFERIOR</td>
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</tbody>
</table>
Part II
Achievement Test for the audio modular instructional unit, "Staff Development: The Basic Elements of Communication."

Directions: When completing the multiple choice questions, place a check-mark on the line next to the statement that most appropriately answers the question or completes the sentence.

1. The term "communication," as it is derived from its Latin origin, conveys which of the following ideas:
   __ a) to share information through speaking
   __ b) to share information through written correspondence
   __ c) to come to a common agreement
   __ d) to make common
   __ e) to provide information to another person

2. One-way communication, as opposed to two-way communication, is
   __ a) more efficient.
   __ b) usually faster.
   __ c) very seldom appropriate in the school setting.
   __ d) very seldom used by school administrators.
   __ e) very appropriate in the classroom setting.

3. The use of feedback in communication
   __ a) assures the accuracy with which a message is received.
   __ b) makes the receiver more frustrated.
   __ c) increases the receiver's confidence.
   __ d) speeds up the communication process.
   __ e) usually has no detectable effect on the communication process.
4. Sally is sitting in class looking out the window and daydreaming. The teacher says to the class, "Students, take out a clean sheet of notebook paper." Sally sits there without moving a muscle while the rest of the class takes out a sheet of paper. Which of the following general hazards would be the cause of this communication breakdown?

___ a) The information which is to be transmitted is vague, or inaccurate.
___ b) The message is poorly encoded.
___ c) There is a failure to transmit a well-coded message.
___ d) The receivers decode a message other than the source had intended.
___ e) Any of the above-mentioned general hazards could have been the cause of this communication breakdown.

5. There has been a great amount of research conducted, focusing on the communication process in the classroom setting. The findings from this research indicate that in most elementary and secondary classrooms

___ a) 50 percent of the time, the person doing the talking is the teacher.
___ b) messages are primarily motivational and inspirational in nature.
___ c) someone is talking approximately one-third of the time.
___ d) the teacher talks more than all of the students combined.
___ e) feedback and an open flow of communication is quite common.

6. A significant amount of research has been conducted focusing on the teacher-administration communication process. The findings from this research indicates that

___ a) messages flow primarily from teachers to administrators rather than vice versa.
___ b) insecurity probably keeps teachers from discussing classroom problems with those higher in rank.
___ c) the communication relationship between teachers and administration is generally open and fluid.
___ d) the lack of technical skills in communication keeps teachers from discussing classroom problems with administration
___ e) the messages that flow from teachers to administrators are primarily in the form of written memos.
7. The findings from research indicate that the messages that flow from the administration to teachers

___a) tend to be directive rather than informational in nature.
___b) are in the form of memos which are extremely vague and inaccurate.
___c) are in oral form rather than written form.
___d) tend to be motivational rather than directive in nature.
___e) tend to be informational rather than directive in nature.

8. During a staff meeting a principal explains in detail how he wants the student progress reports filled out. The next week the teachers hand in the student progress report forms. Half of the teachers filled them out correctly, while the other half of the staff filled them out correctly in one way or another. Which of the following general hazards would be the cause of this communication breakdown?

___a) The information which was transmitted was vague, or inaccurate.
___b) The message was poorly encoded.
___c) The receivers decoded the message other than the source had intended.
___d) Any of the above-mentioned hazards could have caused this communication breakdown.
___e) The above-mentioned hazards listed in items a) and c) could have caused this communication breakdown.

9. A teacher pulls out a memo from her mailbox at school. She tears it up and throws it in the waste basket before reading it. Which of the following general hazards would be the cause of this communication breakdown?

___a) The message was poorly encoded.
___b) There was a failure to transmit a well-encoded message.
___c) The receiver decoded a message other than the source had intended.
___d) Any of the above-mentioned hazards could have caused this communication breakdown.
___e) The above-mentioned hazards listed in items b) and c) could have caused this communication breakdown.
10. The most significant barriers to understanding among persons are those pertaining to
   ___ a) differences in word usage.
   ___ b) errors in grammatical form.
   ___ c) emotional and social considerations.
   ___ d) lack of verbal facility.
   ___ e) errors in encoding the message.

11. Two-way communication as opposed to one-way communication is
   ___ a) more efficient.
   ___ b) faster.
   ___ c) more accurate.
   ___ d) less frustrating for the sender.
   ___ e) used more often in school settings.

12. The statement "Education is Communication" is correct when viewed in
    ___ a) technical terms.
    ___ b) psychological terms.
    ___ c) social terms.
    ___ d) social psychological terms.
13. Before a message has meaning to the receiver he must
   _____a) encode the message.
   _____b) decode the message.
   _____c) transmit the message.
   _____d) hear the message.
   _____e) interpret the message as the sender had intended.

14. The communication phenomena is
   _____a) in reality, very simple.
   _____b) extremely complex and broad in scope.
   _____c) not understood very well.
   _____d) the selling of ideas to others.
   _____e) essentially decoding and encoding messages.

15. From reading the research in the communication process utilized in most
    school systems, one could conclude that
   _____a) there is too much reliance upon the one-way communication process.
   _____b) there is a heavy reliance upon the two-way communication process.
   _____c) there is a sufficient balance between the one-way and two-way
       communication process.
   _____d) one-way communication is relied upon more heavily at the
       classroom level (between student and teacher) than at any other
       level of the school organization.
   _____e) written communication is more predominate than oral communication.
Part III

SECOND SEMANTIC DIFFERENTIAL

Instructions on page 1.
**Part III**

For the following concept, place an X between the : : near the word which most nearly represents your feeling about the concept. The closer you place the X to the word, the more the word represents your feeling.

**IN-SERVICE EDUCATIONAL PROGRAMS FOR ADMINISTRATORS IN WHICH YOU HAVE PARTICIPATED (EXCLUDING THE AUDIO MODULAR INSTRUCTIONAL APPROACH) (CONCEPT)**

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