

MICROTEACHING TECHNIQUES UTILIZED BY
INDUSTRIAL ARTS TEACHER EDUCATION
PROGRAMS

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CHAPTER I

INTRODUCTION

Teacher preparation programs have been changing in the last few years. New techniques have been and are being tested in many teacher education institutions. An ingredient that has been lacking in teacher education is a safe environment for students to practice the methods that are taught in the professional courses. Some educators will argue that the student preparing for teaching tests these methods in his student teaching experience. This is true. The student teacher does practice his methodology in the student teaching experience, and this is the weak link in the teacher preparation program. This practice that takes place during student teaching is on-the-job practice, and for that reason there are severe limitations. Practice in the normal classroom, by either a student or experienced teacher, creates many problems. Probably the major problem is that students are there to be skillfully taught and not practiced on. Other professions provide an opportunity for safe practice. Some examples are as follow: the law student and his moot court; the medical student and his cadaver; the pilot and his link trainer; the actor and his rehearsals.

Microteaching is a scaled-down teaching encounter whereby the student is required to teach a brief lesson to a small group of students (12). Many teacher preparation programs are utilizing some type of

microteaching encounter to provide the student teacher a safe place to practice.

In an effort to improve teacher preparation programs, industrial arts educators have displayed a great deal of interest in the implementation of microteaching. This interest in microteaching by industrial arts teacher educators is witness to the feeling that microteaching can improve the preparation of industrial arts teachers. The extent of utilization of microteaching by industrial arts teacher education has not been identified. The lack of this type of information makes it difficult to determine where to put the emphasis on the implementation of microteaching.

Statement of the Problem

Microteaching can provide student teachers with a safe setting for the practice and testing of the techniques and skills of their profession. The implementation of microteaching provides immediate reinforcement and relevance to educational methodology. Microteaching can be a valuable tool in building effective teacher preparation programs.

The present status of microteaching in the preparation of industrial arts teachers has not been identified. Information relating to the utilization, organization, problems, value, purposes, and procedures of microteaching would be valuable to those programs presently utilizing microteaching in the preparation of industrial arts teachers. This sharing of information and ideas could also be used by industrial arts teacher preparation programs that are planning to include microteaching in the future.

Purpose of the Study

The purpose of this study is to identify the present status of the utilization of microteaching in industrial arts teacher preparation programs. An attempt will be made to identify the following: (1) extent of utilization of microteaching; (2) organizational elements of microteaching; (3) major problems related to the initial introduction and operation of a microteaching program; (4) the value placed on microteaching; (5) the purposes for which microteaching is being used; and (6) procedures that are being used in the execution of microteaching.

Objectives of the Study

The following objectives have been established to carry out the purpose of the study:

1. To provide industrial arts educators with an appraisal of the extent of utilization of microteaching in industrial arts teacher preparation programs.
2. To identify organizational elements of microteaching that are utilized by industrial arts educators.
3. To identify the major problems related to the initial introduction and operation of a microteaching program into a teacher preparation program in industrial arts.
4. To identify the value placed on microteaching by industrial arts teacher educators.
5. To identify the purposes for which microteaching is being used in industrial arts teacher preparation programs.
6. To identify the procedures that are being used in the execution of microteaching in industrial arts teacher preparation programs.

Need for the Study

Education is plagued or blessed with fads, innovations, and new developments. Observers of professional education may have difficulty determining whether educators are moving ahead and making worthwhile progress or if they are just trying every "in thing" that comes along and discarding it when the novelty wears off. New ideas often encourage educators to move away from the traditional procedures and practices to try new approaches and strategies. Once microteaching was a new idea, but it is no longer considered to be an innovation. Some educators feel that microteaching is a valuable technique when used in the preparation of teachers and the improvement of teaching.

Industrial arts teacher educators have been using microteaching and components of microteaching for several years. Many of these educators have included microteaching as a vital part of the teacher education program. Use of microteaching does not connote success, but if the utilization of microteaching is increasing and sustained use of microteaching is evident, this would seem to indicate some degree of acceptance. If industrial arts teacher educators feel that microteaching improves the preparation of their future teachers, their ideas should be shared. A study that would identify how and why microteaching is being used in the preparation of industrial arts teachers is needed because it might be helpful to those industrial arts educators presently utilizing microteaching and to those who have not worked with the technique.

Scope of the Study

The study will include institutions in the United States that

prepare teachers in industrial arts education. The institutions will be limited to those that are recognized by the American Council on Industrial Arts Teacher Education.

Assumptions

The following assumptions underlie the study:

1. That the professional educators in industrial arts education have identified the programs that prepare industrial arts teachers.
2. That the responses by the industrial arts teacher educators will express their true opinions.

Definition of Terms

For the purpose of this study, the following terms are offered.

Critique: A review and criticism of the student's performance in the teaching cycle.

Critique supervisor: The individual assigned the task of reviewing and evaluating the teaching cycle.

Feedback: The method of recording the teaching cycle.

Initial Teach: The first micro-lesson taught by the student teacher in a microteaching encounter.

Micro-class: A small class of three to ten students to whom a micro-lesson is taught.

Micro-lesson: A scaled-down lesson usually four to twenty minutes in length.

Microteaching: A scaled-down exercise in teaching whereby the student is required to teach brief lessons to a small group of students.

Model: An example of a microteaching lesson provided for the student teacher.

Peer student: A college student participating as a member of a micro-class.

Real student: A junior or senior high school student participating as a member of a micro-class.

Reteach: A repeat of the lesson after the critique.

Student teacher: Teacher trainee presenting the micro-lesson.

Teach-critique-reteach-critique cycle: A microteaching encounter including the following sequence of events: teach, critique, reteach, critique.

Teaching skill: Specific teacher behaviors designed to influence learners in a predetermined direction.

CHAPTER II

REVIEW OF LITERATURE

The purpose of this chapter is to present a review of the research and observations pertinent to the area of microteaching included in this study. The review is presented in three major areas: history and development of microteaching, status of microteaching in teacher education, and microteaching in industrial arts education.

History and Development of Microteaching

In an effort to justify the need for microteaching, educators often speculated on the conditions in teacher education at the time that microteaching was developed. Education courses were described as being verbal, abstract, and vague. The courses did not seem to provide prospective teachers with the knowledge and sensitivity needed to understand classroom interaction. Student teachers had difficulty handling classroom situations because they had not been equipped with the proper skills and behavior strategies (20). Ciampa (7) pointed out another condition that exists in many teacher preparation programs:

It seems that the educational foundations and methods course are all irrelevant to the student until he has some suitable laboratory experience in the field which enables him to synthesize his previous experiences into meaningful 'teacher readiness' factor.

Many educators agreed that these conditions did in fact exist just prior to the development of microteaching.

The inception of microteaching took place in 1963 at Stanford University, Palo Alto, California (9). This technique identified as microteaching developed from an examination of teacher education and the invention of a portable video tape recorder. Bush and Allen of Stanford University had received a grant from the Ford Foundation to examine those experiences which might be relevant for teaching interns in an innovative teacher education program. The project of the research was a teacher education curriculum for interns. Included in the curriculum was a reduced teaching exercise called "demonstration teaching" (19).

Cooper and Allen (9) described the "demonstration teaching" exercise in a paper titled "Microteaching: History and Present Status." The exercise involved the interns in a demonstration lesson, where they taught a game to a group of four students. The students were instructed to role play stereotyped students: slowpoke, couldn't-care-less, eager, and know-it-all. This rigged situation was designed to provide the interns with a lesson in humility and impress upon them the need to learn instructional techniques. Professors and interns agreed that the experience was an over-dramatized, anxiety-producing session that was of little value to anyone. From this artificial situation developed the concept of microteaching.

Another important aspect in the development of microteaching was the recording of the demonstration lesson with a video tape recorder. This approach was suggested in 1961 by Acheson, a doctoral candidate at Stanford University. A newspaper article about a German scientist who had invented a video tape recorder gave Acheson the idea that would provide immediate feedback to the intern. This feedback could then be used as a common frame of reference between the intern and the

supervisor (19). The video tape recorder is not required as a feedback method of microteaching, but the video tape recorder is the most dynamic method of feedback. Some educators seem to identify microteaching as being only short video-taped lessons.

The artificial situation of "demonstration teaching" was altered by having the students prepare a short lesson of their own choosing in their subject matter area. This was definitely an improvement, but the procedure still seemed to lack direction. The missing ingredient was the teaching techniques dimension. The "how-to-teach" had not been provided for the beginning teachers. These teachers were going into the microteaching event with an emphasis on teaching content and with little concern for methodology. This was remedied by Aubertine when he gave the beginners specific instruction in the performance of a teaching skill. The skill that he worked with dealt with beginning a lesson. The practice of focusing on a single skill at a time evolved and proved to be quite successful (9).

Microteaching developed from the different factors that have been highlighted in this brief history. The technique is a real teaching situation scaled down in terms of time and numbers of students. Usually the lesson was four to twenty minutes in length, and in most cases three to ten students were involved. Scaling down the lesson reduced some of the complexities of the teaching act, thus permitting the teacher to focus on selected aspects of teaching. A model is usually presented to the student before the microteaching encounter. Models could be a written description or a filmed, taped, or live demonstration of a specific skill. Often a microteaching episode includes teaching a lesson and immediate feedback on the teacher's strengths and weaknesses.

The feedback can come from video or audio tape recordings, supervisors, pupils, colleagues, or from the teacher's self-perceptions. Micro-teaching has several variable aspects that include lesson length, type of supervision, recording technique, number of reteaches, and number and types of pupils (23).

Allen (1) stated that microteaching at Stanford University was developed "to serve two purposes, (1) as preliminary experiences and practice in teaching and (2) as a research vehicle to explore training effects under controlled conditions." Since the initial development microteaching has been exposed to many different areas and research settings. After an extensive review of articles and research dealing with microteaching, Doty (10) stated,

Microteaching is being used for teacher, counselor, therapist, teacher coordinator and supervisor education, research, prediction and selection of teachers and evaluation of behavior change.

Cooper and Allen (9) report that research in microteaching has been carried out in the following areas: preservice training, in-service training, Peace Corps training, micro-counseling, supervisor training, training college teachers. They attempt to summarize the research findings:

It is extremely difficult to summarize research findings with different objectives, subjects, conditions, and other variables. However, some generalizations about microteaching and the teaching skills approach can be made.

1. Using a microteaching format, teach-critique/ reteach-critique, positive changes in teacher behavior can be achieved which result in a larger repertoire of teaching behaviors.
2. Performance in a microteaching situation can accurately predict subsequent classroom performance.

3. Trainee acceptance of microteaching as a relevant training procedure is high.
4. The feedback dimension of microteaching is probably the crucial one in terms of changing the trainee's behavior.
5. This feedback can come from several sources, but the most powerful combination seems to be one that utilizes supervisory comments, video-tape recordings, and pupil comments.
6. Contrary to previous research evidence, the immediacy of feedback (using videotapes and supervisors) is not crucial to the acquisition of some behaviors.
7. A perceptual model that demonstrates positive instances of the desire behavior, rather than a mixture of both positive and negative, is more powerful in enhancing the trainee's ability to acquire the skill in a transfer task.
8. For certain skills, a perceptual model is preferred over a written description of the skill, while for other skills the evidence is inconclusive.

As microteaching began to spread to other institutions minor changes in the format began to take place. Some teacher education programs felt that the teaching skills approach model was not realistic and forced the student teacher to push for artificial reactions from the students. Some teachers felt that the microteaching experience was too "gimmicky," that the television was more a toy than an aid to good teaching (13). In just a short number of years researchers were testing many aspects of microteaching in an attempt to improve and refine the process.

Not only the format but the types of students that were taught could be altered. Johnson and Pancrazio (16) worked with three different types of students to investigate the student teacher's performance in a different student environment. They worked with peers, university freshmen, and high school students. They found that it was easier to

obtain desired training effects when peers were used as students, but these effects do not seem to transfer to student teaching. Student teachers who used high school students in their microteaching experiences were associated with superior performance at the conclusion of student teaching.

Besides the conventional types of feedback, different methods were utilized to analyze and evaluate the student teacher's performance. Perlberg, Tinkham, and Nelson (22) point out that there is a growing trend to combine interaction analysis systems and microteaching techniques in preservice and in-service teacher education. Amidon (5) states that interaction analysis is a system for describing and analyzing teacher-pupil verbal interaction. This description indicates that interaction analysis could be used as an effective feedback method.

Allen and Ryan (3) reflect on the application and potential of the microteaching technique:

To train teachers initially--and then to maintain their professional skill through a lifetime of service--is a tremendously complex task. Microteaching is hardly the entire answer, but it is a part of the whole, yet-to-emerge answer. The microteaching idea is basically a flexible one, and it could have a key place amid an array of training resources.

Status of Microteaching in Teacher Education

The primary objective of this study is to identify the status of microteaching in industrial arts teacher education and the following portion of the review of literature includes descriptions of the present status of microteaching in the area of teacher education.

In 1967 Johnson (15) conducted "A National Survey of Student Teaching Programs" that identified 1,110 teacher preparation institutions. This survey provides an indication of the acceptance of

microteaching in the area of teacher education. In the section of the survey dealing with innovations, 44 percent of the respondents reported that their institutions were using some form of microteaching. This percentage breaks down into the following categories: 28 percent used microteaching a small amount; 12 percent used microteaching a good deal; 4 percent used microteaching extensively; 1 percent used microteaching but did not identify the amount of use.

Ward (26) conducted "A Survey of Microteaching in Secondary Education Programs of All NCATE Accredited Colleges and Universities"; this survey was completed in 1969. The survey included 442 NCATE accredited colleges and universities and 141 of these institutions reported the use of microteaching in their secondary education programs. In general, the trend has been to condense the course content in the subject and general methods courses to make room for microteaching. The majority of the microteaching programs were on a relatively small scale, including only a few encounters and serving a small number of students. Several well-established programs were identified, and they involved a large number of students in several encounters. In most cases programs were conducted in the education and audio-visual departments and "peer" pupils were used in the micro-classes. Campus schools and public schools were used in some programs, and in these programs "real" pupils were used in the micro-class. The complete teach-critique, reteach-critique cycle was used in many of the larger, more mature microteaching programs. Six or fewer students were used in the micro-classes by most institutions. The student teacher, supervising professor, and pupils of the micro-class were actively engaged in the critique. There seemed to be a lack of knowledge about the technical teaching skills, and less than 33

percent of the programs utilized written rationale, video-taped or filmed models of any of the technical skills. Many educators observed that microteaching contributed to an improvement in their attitude and their students' attitudes toward education. Improvements in their own teaching and in the teaching abilities of their students were also observed. The survey indicated that 54 educators had used microteaching in the in-service education of the state in which they were located.

Ward identified many modifications made in the microteaching process to facilitate its incorporation into the numerous teacher training programs. The two studies indicate an acceptance of microteaching as a technique for the training of teachers.

Microteaching in Industrial Arts Education

Educators in industrial arts started working with the media that is often utilized in microteaching before 1963. As early as 1962, in an article directed at the application of closed-circuit television as an instructional aid in industrial education, Manchak (17) suggested that closed-circuit television could be used for teacher self-analysis in student teaching and in-service training. Barnard (6), at the University of Wisconsin-Stout, discussed the potential of closed-circuit television in an article titled "Audio-Visuals" in January, 1963.

In 1966 Allen (2) in an article titled "New Dimensions in Trade and Technical Teacher Education" recommended that trade and technical teacher education ought to consider some of the new alternatives in practical experience now being developed. Allen presented microteaching as an example of one of the alternatives.

In 1967 Tucker (25) reported that industrial arts educators at State University College of New York at Oswego were providing simulated teaching experiences for future teachers in a methods laboratory. Although these simulated experiences were not identified as micro-teaching, they included many of the same components. The activities carried out in the methods laboratory provide numerous opportunities for the student to obtain an accurate picture of his teaching characteristics. Both audio and video recorders can be used to record the teaching experiences. The student's presentation is then critiqued by the instructor and the other participating students.

At the University of Wisconsin-Stout in 1967 the American Industry Project began to use microteaching in the training of teachers for their project. Sedgwick and Misfeldt (24) reported that the microteaching sequences were carried out in a professional teacher education laboratory staffed by an educational methodologist, a television technician, and eight junior high school students.

Perlberg (21), at the University of Illinois, attempted to evaluate the contribution of microteaching techniques to the training of student teachers. The following hypotheses indicate the purpose of the study as it applied to student teaching:

- (1) the augmentation of methods courses before the student teaching period with practice in the college micro-teaching laboratory utilizing video recording would provide students with a realistic teaching experience and ease the anxieties of their induction into student teaching;
- (2) the use of micro-teaching techniques and video recordings by the student teacher and cooperating teacher during the student teaching period would better prepare the student teacher for his role; . . .

Perlberg states his results as follows:

The study results indicate that a thorough knowledge of the media and techniques and an intensive, structured practice

in the Teaching Techniques Laboratory during the methods course, facilitate their effective use during the student teaching period. This practice will ease many of the tensions inherent in student teaching.

Although it did not involve microteaching, Miller (18) conducted a pilot project at the University of Missouri-Columbia that included recording techniques and feedback methods often utilized in microteaching. The objective of the project was to improve the supervision of student teaching and the effectiveness of student teachers in industrial arts. To meet the objective a very precise look at the student teacher's performance in the classroom was obtained through the utilization of video taping and Flanders Interaction Analysis. When the student teacher was presenting lectures and demonstrations, a video recording was made of the class. Then the supervisor coded the teaching sessions from the video recordings and developed a Flanders' matrix. After the supervisor completed his review and analysis, a conference was set up with the student. During the conference the student and supervisor viewed the video tape together and discussed the content of the Flanders' matrix. By using both the Flanders' technique and video recordings the supervisor is able to point out the strong and weak points of the lesson and also make suggestions for the next teaching presentation. Miller states that this project is a step toward an objective and systematic means of improving student teaching effectiveness.

Effectively presenting new subject matter to experienced teachers can be a difficult task and often a more difficult task is involved in equipping these teachers with the teaching skills that should accompany this subject matter. Microteaching provides an ideal medium for the development of new teaching techniques. The Appalachia Educational

Laboratory, Inc., sponsored institutes at East Tennessee State University at Johnson City and West Virginia Institute of Technology at Montgomery which were designed to encourage industrial arts teachers to include occupational-guidance information in their programs. Eggers (11) reported that the guidelines for microteaching were not followed completely. The major deviations from the guidelines included the use of peers as pupils and a large class size of 28. Three microteaching encounters were included in the institute as the lessons were recorded on video tape. The encounters included a teach session and an evaluation session. The evaluation session included a videotape playback of the teach session, and this playback formed the basis for a meticulous critique. The institute was being evaluated, but the testing program was still in progress when the report was made. Eggers observed that if "participant enthusiasm could be used as a measure of success, then the institutes would have to be considered successful."

Cochran and Wolansky (8) used microteaching as a method for refining selected lessons in an Experienced Teacher Fellowship Program at Wayne State University. The project was directed at up-grading the experienced teachers in teaching skills and presenting new content. The participating teachers presented and evaluated new curriculum materials in either the industrial materials and processes cluster or the energy and propulsion systems cluster. The microteaching experiences included the following phases: (1) establish set, (2) teach session, (3) critique, (4) reteach session, and (5) evaluation. Cochran and Wolansky observed that the most effective improvement in teaching skills resulted from the teacher's self-evaluation and appraisal. As the project progressed, enthusiasm and interest were generated when participants were

able to view outstanding examples of microteaching sessions given by their colleagues. Cochran and Wolansky felt that microteaching was an excellent technique for testing new curriculum materials and refining teacher competence.

In the early reports and articles on microteaching many authors implied that the development of a portable video recorder contributed to the enthusiasm for exploring the microteaching technique. Hoerner (14) feels that as microteaching was popularized and refined a reverse of this emphasis occurred, and microteaching began to give impetus to the value of the video recorder. The video recorder used in the early years of microteaching was portable but not compact. Hoerner implies that the complexity of the equipment and the size contributed to the utilization of an on-campus microteaching laboratory. When the video recorder was used in the on-campus situation, the problems related to movement and set up were minimal. Now that equipment is more compact and easier to set up, Hoerner suggests that vocational educators ". . . must go on from the microteaching setting into the real classroom and actually see if the teacher is carrying on what he has learned."

At the University of Wisconsin-Stout microteaching is utilized as a preliminary teaching experience and has become a part of the teaching methods course in industrial education. Wiehe (27) points out that student teachers are adequately prepared for the microteaching lessons. Early in the methods course time is devoted to content analysis and behavioral objectives. The student teachers are required to microteach two psychomotor and three cognitive type lessons. In the content analysis discussions the student teacher learns how to select topics for these lessons. The following lesson titles indicate the teaching skills

that will be practiced: (1) Introduction, (2) Questioning, (3) Variation of Stimulus, (4) Summarizing, and (5) Final Lesson. During the final lesson the student teachers attempt to use all the skills from the preceding lessons. Each lesson has a list of criteria and student teachers' performances must meet the mastery level for the applicable set of criteria. In most cases peer students are used in the microteaching lessons, but junior high and high school students were used when an evaluation of peer versus real students was being carried out. During this evaluation, student teachers stated that they felt less pressure when they worked with the real students than they experienced with the peer students. The microteaching experiences were enthusiastically endorsed by the student teachers when an opinionnaire was used to evaluate the program. After the student teachers had completed the nine weeks off-campus teaching they were again asked to evaluate the microteaching experiences. Over 75 percent of the student teachers felt that microteaching helped them work more effectively with students while off-campus.

Summary

The first section of this review of literature briefly states the history and development of microteaching. Educators reporting on the early development of microteaching implied that this technique grew out of a period that was characterized by a dissatisfaction with teacher training. Microteaching developed from a simulation exercise for teaching interns at Stanford University in 1963. The simulation experience evolved to what might candidly be described as a real teaching situation. Different feedback methods could be used, but the development and

accessibility of the video tape recorder gave a boost to the expansion and application of the microteaching technique. The originators described microteaching as a real teaching situation scaled down in terms of time and the number of students. Lessons were four to twenty minutes in length, and they involved three to ten students. As other institutions began to adapt the technique to their own situations, slight changes were often made to the form. Microteaching was applied to a number of different research situations.

The use of microteaching by student teaching programs was identified in 1967 by Johnson (15). In his national study of student teaching programs he found that 44 percent of the respondents indicated that they used microteaching to some extent. In 1969 Ward (26) conducted a study of NCATE accredited colleges and universities that was specifically directed at microteaching. His survey included 442 colleges and universities, and 141 of these institutions reported the use of microteaching in the secondary education programs. The information contained in both studies indicates the acceptance of microteaching by teacher educators.

Industrial arts educators started to work with components of microteaching before 1963, and the use of them in industrial arts teacher preparation programs has expanded markedly since those early ventures. The use of closed-circuit television as an instructional aid gave industrial arts educators an early introduction to the equipment that would be utilized as an important recording method in microteaching. The potential of the video tape recorder in the area of student teaching for self-analysis was quickly pointed out by these industrial arts educators. In 1967 Tucker (25) reported on simulated teaching

experiences that had the same characteristics as microteaching but were not identified as such. At approximately the same time, microteaching was being used in the American Industry Project (24). Industrial educators at several universities began to use microteaching in areas of research, teacher preparation, and graduate teacher education. Microteaching was often used in combination with the introduction of new materials and innovative curricula.

This review attempts to record the progress of microteaching from an innovation to an established technique that is recognized as an integral part of teacher education. In company with this description is a presentation of the mix of industrial arts teacher education and microteaching.

CHAPTER III

METHODOLOGY

Introduction

The purpose of this study was to identify the present status of the utilization of microteaching in industrial arts teacher preparation programs. The study was designed to identify the (1) extent of utilization of microteaching, (2) organizational elements of microteaching, (3) major problems related to the initial introduction and operation of a microteaching program, (4) value placed on microteaching, (5) purposes for which microteaching is being used, and (6) procedures that are being used in the execution of microteaching. This chapter is a description of the methodology used in the study, and it includes the following: feasibility survey, design of the study, instrumentation, population, collection of data, analysis of data.

Feasibility Survey

Before approving the proposal for this study the doctoral advisory committee recommended that a feasibility survey be conducted to determine the extent of utilization of microteaching in industrial arts. The committee suggested that ten directors of industrial arts program be contacted by phone and that the directors be polled on their use of microteaching. The choice of institutions was left to the discretion of the author. The institutions included in the survey are listed in

Appendix A. The directors were first asked, "Do you utilize micro-teaching in the preparation of industrial arts teachers?" If the directors answered "Yes," they were asked, "Is it (microteaching) provided within the department or outside the department?" The responses to the first question were as follows: Yes, Nine; No, One. The responses to the second question were as follows: Within the Department, Six; Outside the Department, Three. After being presented with the results of the survey, the committee approved the proposed study.

Design of the Study

The nature of the research in the study was descriptive. This survey type study included the collection of information that identifies the status of microteaching in industrial arts teacher education programs.

Instrumentation

In the development of the instrument a sustaining effort was made to insure that the process would produce an instrument that would contribute to the objectives of the study and also be concise and clear. Specific items were designed and written to contribute to the accomplishment of each objective. This resulted in an objective-item breakdown (see Appendix B). From this breakdown the items were combined and organized into the proposed questionnaire. The cover letter, proposed questionnaire, and the objective-item breakdown were presented to the doctoral committee for their appraisal. The committee functioned as a panel of consultants in the evaluation of the instrument. The first discussion of the instrument took place between one member of the

committee and the author. During this session the cover letter was discussed in detail and suggestions were offered for its improvement. An item by item appraisal and revision was made of the questionnaire. The results of this discussion were presented to the other members of the committee. The cover letter was discussed and recommendations were made for its refinement. Another appraisal and revision of the questionnaire was made with attention given to each item and order of the items. The end product of the process was a cover letter (see Appendix C) and a 26-item questionnaire (see Appendix D) that included both open and closed items.

A limited number of comments were received from the respondents that tend to indicate their reaction to the composition of the cover letter and the design of the questionnaire. These comments are recorded in Appendix E.

Population

The population for this study includes the institutions in the United States that prepare teachers in industrial arts education. The Industrial Teacher Education Directory (4) lists the public and private colleges and universities that prepare industrial arts teachers. The directory is under the joint sponsorship of the American Council on Industrial Arts Teacher Education and the National Association of Industrial Teacher Educators. Degrees granted in the area of industrial education are listed with the institutions and personnel. This made the identification of the programs with majors in industrial arts possible. A list of 205 colleges and universities was identified as offering majors in industrial arts. The institutions included in the study are listed in Appendix F.

Collection of Data

The cover letters and questionnaires were mailed to the directors of the programs that were identified in the population. The cover letters were programmed and typed on an IBM magnetic tape typewriter. By using the magnetic tape typewriter each director received a personally addressed and typed letter. The letters were mailed on the same date, and after five weeks 64.9 percent of the questionnaires had been returned. A followup cover letter (see Appendix G) making a plea for the return of the remaining 72 questionnaires was completed, individually typed, and mailed with another copy of the questionnaire. The second mailing increased the return to 88.3 percent.

Analysis of Data

The data from the questionnaires was compiled and tabulated so that it would contribute to the fulfillment of the purpose and objectives of the study. A portion of the data in this study was nominal in nature and was presented in, or divided into, categories. The trends for programs favoring one category or a group of categories were described in the actual number of programs and the percent of consensus of the entire group. Other data in the study lend itself to measures of central tendency. The mean, median, and mode were expressed when applicable.

CHAPTER IV

PRESENTATION OF THE DATA

Introduction

The primary purpose of this study was to identify the present status of the utilization of microteaching in industrial arts teacher preparation programs. A national survey of industrial arts teacher preparation programs was conducted, and this chapter presents the information recorded on the 181 questionnaires that were returned in the survey. This return represents 88.3 percent of the 205 programs included in the study. The primary purpose of the study was to be accomplished by identifying the (1) extent of utilization of microteaching, (2) organizational elements of microteaching, (3) major problems related to the initial introduction and operation of a microteaching program, (4) value placed on microteaching, (5) purposes for which microteaching is being used, and (6) procedures that are being used in the execution of microteaching. These specific areas serve as topic headings in this chapter, and the applicable items from the questionnaire make up the content of the topics. Essentially, the chapter is arranged in the same order as the objectives of the study and the objective-item breakdown described in the instrumentation.

Extent of Utilization of Microteaching

The extent of utilization of microteaching reported by the

directors of the programs that responded to the survey was 102 utilizing microteaching and 79 not utilizing microteaching. Table I indicates that 56.4 percent of the programs represented in this return use microteaching in the preparation of industrial arts teachers.

TABLE I
INDUSTRIAL ARTS TEACHER EDUCATION PROGRAMS UTILIZING
MICROTEACHING IN THE PREPARATION OF INDUSTRIAL
ARTS TEACHERS

Use of Microteaching	Programs	
	Number	Percent
Microteaching utilized	102	56.4
Microteaching not utilized	79	43.6
Total	181	100.0

The years of utilization of microteaching in industrial arts teacher education programs span from less than two years to nine years and over. Table II presented the years of utilization of microteaching in two-year intervals. The mean of 6.57 years, median of 4.95 years, and mode of 5.00 years all are close to or within the 5-6 years interval. Thirty-two programs were included in the 5-6 year interval, and this was 31.4 percent of the programs utilizing microteaching. The next largest

concentration of programs was in the 3-4 years interval with 28 programs or 27.5 percent of the programs. These two intervals include over half of the programs. The highest interval, 9 and over years, with 15 programs (14.7 percent) was almost equal to the lowest interval with 14 programs (13.7 percent).

TABLE II
YEARS OF UTILIZATION OF MICROTEACHING IN INDUSTRIAL
ARTS TEACHER EDUCATION PROGRAMS

Number of Years	Programs Utilizing Microteaching	
	Number	Percent
0 - 2	14	13.7
3 - 4	28	27.5
5 - 6	32	31.4
7 - 8	9	8.8
9 and over	15	14.7
No response	4	3.9
Total	102	100.0

MEAN: 6.57 years

MEDIAN: 4.95 years

MODE: 5.00 years

The prospects of more programs using microteaching are not overly enthusiastic; however, of the programs presently not using microteaching

12 plan to include it next year. Table III shows that this represents about 15.2 percent of the 79 programs.

TABLE III
PLANS FOR FUTURE UTILIZATION OF MICROTEACHING FOR
PROGRAMS NOT PRESENTLY USING MICROTEACHING

Plans	Programs Not Utilizing Microteaching	
	Number	Percent
Plan to include microteaching next year	12	15.2
Do not plan to include microteaching next year	62	78.5
Undecided about future use of microteaching	5	6.3
Total	79	100.0

Organizational Elements of Microteaching

The basic differences in the organizational aspects of providing microteaching for industrial arts teachers were reported in the area of the organizational location of the microteaching program. This involved where the microteaching was being provided or who was providing it. The respondents were placed into one of three groups when responding to the item relating to the location of the microteaching program. Of the 102

the programs reported as outside the department were 58, providing 56.9 percent of the total. Within the department only, 24 programs were reported, providing 23.5 percent of the total. Outside the department, 20 programs were reported, providing 19.6 percent of the total. The remaining 19.6 percent of the total, representing 20 programs, were reported as being provided by the department outside the department.

TABLE IV ORGANIZATION OF THE MICROTEACHING PROGRAM

ORGANIZATION OF THE MICROTEACHING PROGRAM

	Number	Percent	Number	Percent	Number	Percent
Department only	58	56.9	58	56.9	58	56.9
Outside the department	24	23.5	24	23.5	24	23.5
Department and outside the department	20	19.6	20	19.6	20	19.6
Total	102	100.0	102	100.0	102	100.0

... organizational distance... probably include...

TABLE V
PLANS FOR INCLUDING MICROTEACHING IN
DEPARTMENTS IN THE FUTURE

Plans	Programs Utilizing Microteaching Outside the Department Only	
	Number	Percent
Plan to include microteaching in the department next year	7	29.2
Do not plan to include micro- teaching in the department next year	14	58.3
No response	3	12.5
Total	24	100.0

Data presented in Table VI identifies the departments providing microteaching for industrial arts education programs. This item only included responses from the outside department only group and the within and outside department group. In most cases education departments and divisions were listed as providing the microteaching. The education departments and divisions were listed 29 times, and this was 58.0 percent of the responses. Audio-visual departments were listed six times (12.0 percent), and curriculum and instruction departments were listed five times (10.0 percent).

TABLE VI
DEPARTMENTS PROVIDING MICROTEACHING FOR
INDUSTRIAL ARTS EDUCATION PROGRAMS

Departments	Programs Utilizing Microteaching Outside the Department Only and Microteaching Within and Outside Department	
	Number	Percent
Education Departments and Divisions	29	58.0
Audio-Visual Departments and Studios	6	12.0
Curriculum and Instruction Departments	5	10.0
Learning and Teaching Centers	2	4.0
Library	2	4.0
No Response	6	12.0
Total	50	100.0

The courses including microteaching experiences required of majors in industrial arts teacher preparation programs are listed in Table VII. The three different groups of programs using microteaching differ somewhat in the courses that were listed. In the within department only group 48 of the course listings were methods of teaching industrial arts or education, and this represented 56.5 percent of the course listings in this group. There was an absence of courses in the general methods

TABLE VII

COURSES INCLUDING MICROTEACHING EXPERIENCES REQUIRED OF MAJORS IN
INDUSTRIAL ARTS TEACHER PREPARATION PROGRAMS

Courses	Course Listings in Programs Utilizing Microteaching							
	Within Dept. Only		Outside Dept. Only		Within and Outside Dept.		All Programs Combined	
	No.	%	No.	%	No.	%	No.	%
Methods of Teaching Industrial Arts or Industrial Education	48	56.5	9	25.0	16	35.6	73	44.0
General Methods of Teaching	0	--	16	44.4	15	33.3	31	18.7
Technology, Materials, or Industrial Studies	11	12.9	3	8.3	6	13.3	20	12.1
Curriculum, Methods, and Orientation	9	10.6	1	2.8	1	2.2	11	6.6
Internship, Practicum, or Student Teaching	5	5.9	1	2.8	2	4.4	8	4.8
Microteaching	0	--	4	11.1	0	--	4	2.4
Vocational-Technical Education	0	--	2	5.6	2	4.4	4	2.4
Audio-Visual Aids	2	2.4	0	--	1	2.2	3	1.8
Tool Maintenance and Shop Planning	2	2.4	0	--	0	--	2	1.2

TABLE VII-- (CONTINUED)

Courses	Course Listings in Programs Utilizing Microteaching							
	Within Dept. Only		Outside Dept. Only		Within and Outside Dept.		All Programs Combined	
	No.	%	No.	%	No.	%	No.	%
Others*	2	2.4	0	--	2	4.4	4	2.4
Not Applicable	6	7.1	0	--	0	--	6	3.6
Total	85	100.2	36	100.0	45	99.8	166	100.0

*Included courses that were only listed once.

MODE: Methods of Teaching Industrial Arts or Industrial Education

of teaching category. Eleven courses (12.9 percent) were listed that were in the technology, materials, and industrial studies category. The other listing of any size was nine courses (10.6 percent) in the curriculum, methods and orientation category. The outside department only group showed a marked increase in the general methods of teaching category with 16 courses (44.4 percent) listed and only nine courses (25.0 percent) listed as methods of teaching industrial arts or industrial education. The within and outside department group presented a more balanced distribution between the methods of teaching industrial arts or industrial education course listings with 16 (35.6 percent) and the general methods of teaching course listings of 15 (33.3 percent). When all programs were combined, 73 courses (44.0 percent) were listed under methods of teaching industrial arts or industrial education. General methods of teaching courses included 31 listings (18.7 percent), and 20 courses (12.1 percent) were listed in the technology, materials, or industrial studies category.

The credit hours of courses that include microteaching experiences in industrial arts teacher preparation programs are displayed in Table VIII. The course listings for the three different groups of programs utilizing microteaching show a very high concentration of three credit hour courses. When all programs are combined, the mean credit hours for all courses were 3.25 credit hours. The median was 3.03 credit hours, and the mode was 3.00 credit hours. There were 103 courses listed with three hours of credit, and this represented 57.9 percent of all courses. The next notable listings were two and four credit hour courses.

TABLE VIII

CREDIT HOURS OF COURSES THAT INCLUDE MICROTEACHING EXPERIENCES
IN INDUSTRIAL ARTS TEACHER PREPARATION PROGRAMS

Course Credit Hours	Course Listings in Programs Utilizing Microteaching							
	Within Dept. Only		Outside Dept. Only		Within and Outside Dept.		All Programs Combined	
	No.	%	No.	%	No.	%	No.	%
1	1	1.1	0	--	0	--	1	0.6
2	20	22.5	6	14.6	4	8.3	30	16.9
3	51	57.3	19	46.3	33	68.8	103	57.9
4	7	7.9	10	24.4	7	14.6	24	13.5
5	2	2.3	1	2.4	2	4.2	5	2.8
6	3	3.4	3	7.3	1	2.1	7	3.9
7 and over	2	2.3	0	--	1	2.1	3	1.7
Not Applicable	3	3.4	1	2.4	0	--	4	2.3
No Response	0	--	1	2.4	0	--	1	0.6
Total	89	100.2	41	99.8	48	100.1	178	100.2

MEAN: 3.25 credit hours

MEDIAN: 3.03 credit hours

MODE: 3.00 credit hours

Table IX presents the level of course offerings that include micro-teaching experiences in industrial arts teacher preparation programs. The proportion of course offerings for juniors and seniors is about the same throughout the three groups of programs. One major difference can be noted in the outside department only group, which has a greater percentage of courses offered on the freshman and sophomore levels than the other two groups. This group had five courses (10.6 percent) listed under both the freshman and sophomore levels. The within and outside department group had the highest percentage of courses offered on the graduate level with five courses listed, or 8.9 percent. All the programs combined showed a high concentration at the junior and senior level. The senior level included the greatest number of offerings with 9.9 course listings (48.3 percent), while the junior level included 62 course listings (30.2 percent).

The directors of industrial arts teacher preparation programs were asked to report the approximate number of students involved in micro-teaching on either the semester system or the quarter system. Table X lists the approximate number of students involved in microteaching on the semester system. The three groups of programs using microteaching differed only slightly with the main variations being reported in the summer term. The within and outside department group reported the highest percentage of student involvement during the summer term with 17.8 percent. The outside department only group reported 12.2 percent, and the within department only group reported 6.4 percent student involvement during the summer term. When all programs were combined, 1,754 students (45.9 percent) were reported in the fall term; 1,674 students (43.9 percent) were reported during the spring term; and 395

TABLE IX

LEVEL OF COURSE OFFERINGS THAT INCLUDE MICROTEACHING EXPERIENCES
IN INDUSTRIAL ARTS TEACHER PREPARATION PROGRAMS

Level	Course Listings for Programs Utilizing Microteaching							
	Within Dept. Only		Outside Dept. Only		Within and Outside Dept.		All Programs Combined	
	No.	%	No.	%	No.	%	No.	%
Freshman	4	3.9	5	10.6	1	1.8	10	4.9
Sophomore	8	7.8	5	10.6	5	8.9	18	8.8
Junior	31	30.4	14	29.8	17	30.4	62	30.2
Senior	51	50.0	20	42.6	28	50.0	99	48.3
Graduate	7	6.9	3	6.4	5	8.9	15	7.3
In-Service	1	1.0	0	--	0	--	1	0.5
Total	102	100.0	47	100.0	56	100.0	205	100.0

MODE: Senior level

TABLE X

APPROXIMATE NUMBER OF STUDENTS INVOLVED IN MICROTEACHING
IN INDUSTRIAL ARTS TEACHER PREPARATION PROGRAMS
ON THE SEMESTER SYSTEM

Students in Programs Utilizing Microteaching									
Semester	Within Dept. Only		Outside Dept. Only		Within and Outside Dept.		All Programs Combined		
	No.	%	No.	%	No.	%	No.	%	
Fall	1071	47.5	231	43.4	452	43.1	1754	45.9	
Spring	1028	45.8	236	44.4	410	39.1	1674	43.9	
Summer	144	6.4	65	12.2	186	17.8	395	10.3	
Total	2243	99.7	532	100.0	1048	100.0	3823	100.1	

students (10.3 percent) were reported in the summer term. Table XI lists the approximate number of students involved in microteaching on the quarter system. There were some differences between the three groups of programs using microteaching. The greatest variation was again reported in the summer term with the within department only group reporting the highest percentage of student involvement with 15.0 percent. The within and outside department group was next with 13.0 percent, and the outside department only group reported a low of 1.7 percent student involvement during the summer term. All groups reported a slightly higher student involvement during the fall and winter terms than in the spring term; this is reflected in the combined program breakdown. When all programs were combined, 926 students (30.6 percent) were reported in the fall term; 915 students (30.2 percent) in the winter term; 745 students (24.6 percent) in the spring term; and 433 students (14.6 percent) in the summer term.

The number of microteaching experiences required of students in industrial arts teacher preparation programs can be noted in Table XII. The majority of the programs were reported as requiring four microteaching experiences or less. There were differences in the three groups of programs utilizing microteaching. The mode of the within department only group was two microteaching experiences with 20 programs (34.5 percent) reported as requiring two experiences. The outside department only group's mode was also two microteaching experiences with six programs (25.0 percent) reported, and the mode for the within and outside department group was three experiences with four programs (20.0 percent) reported. When all programs were combined, the mode was 2.00 microteaching experiences; the median was 2.72 microteaching experiences;

TABLE XI

APPROXIMATE NUMBER OF STUDENTS INVOLVED IN MICROTEACHING
IN INDUSTRIAL ARTS TEACHER PREPARATION PROGRAMS
ON THE QUARTER SYSTEM

Students in Programs Utilizing Microteaching									
Quarter	Within Dept. Only		Outside Dept. Only		Within and Outside Dept.		All Programs Combined		
	No.	%	No.	%	No.	%	No.	%	
Fall	849	30.6	22	37.9	55	28.5	926	30.6	
Winter	823	29.6	25	43.1	67	34.7	915	30.2	
Spring	689	24.8	10	17.2	46	23.8	745	24.6	
Summer	417	15.0	1	1.7	25	13.0	443	14.6	
Total	2778	100.0	58	99.9	193	100.0	3029	100.0	

TABLE XII

MICROTEACHING EXPERIENCES REQUIRED OF STUDENTS IN INDUSTRIAL ARTS
TEACHER PREPARATION PROGRAMS

Number of Microteaching Experiences	Programs Utilizing Microteaching							
	Within Dept. Only		Outside Dept. Only		Within and Outside Dept.		All Programs Combined	
	No.	%	No.	%	No.	%	No.	%
1	6	10.3	5	20.8	1	5.0	12	11.8
2	20	34.5	6	25.0	3	15.0	29	28.4
3	8	13.8	4	16.7	4	20.0	16	15.7
4	9	15.5	2	8.3	3	15.0	14	13.7
5	2	3.5	1	4.2	1	5.0	4	3.9
6	3	5.2	1	4.2	0	--	4	3.9
7	1	1.7	0	--	1	5.0	2	2.0
8	0	--	1	4.2	2	10.0	3	2.9
9 and over	4	6.9	0	--	1	5.0	5	4.9
No Response	5	8.6	4	16.7	4	20.0	13	12.8
Total	58	100.0	24	100.1	20	100.0	102	100.0

MEAN: 4.41 experiences

MEDIAN: 2.72 experiences

MODE: 2.00 experiences

and the mean was 4.41 microteaching experiences. The mean was pulled up by a few programs reporting an extremely high number of experiences being required in the nine and over category.

Table XIII shows the personnel involved in carrying out microteaching in industrial arts education programs. The within department only group involved 102 faculty members (71.8 percent), 17 graduate assistants (12.0 percent), and 19 audio visual technicians (13.4 percent). The outside department only group involved 41 faculty members (51.3 percent), 18 graduate assistants (22.5 percent), and 15 audio visual technicians (18.8 percent). In the within and outside department group another high percentage of faculty involvement can be noted with 39 faculty members (65.0 percent), 11 graduate assistants (18.3 percent), and 8 audio visual technicians (13.3 percent). When all programs were combined, 182 faculty members (64.5 percent) were involved in carrying out microteaching; 46 graduate assistants (16.3 percent); and 42 audio visual technicians (14.9 percent).

The total number of personnel included in a microteaching program is described in Table XIV. Although there were differences between the three groups that utilize microteaching, the majority of the programs were reported to involve from one to three people in their microteaching programs. The mode in the within department only group was one person per microteaching program with 23 programs (39.7 percent) reporting that one person carried out their microteaching program. The outside department only group's mode was three persons per program with six programs (25.0 percent) in that category. The within and outside department group's mode was one person per program with eight programs (40.0 percent) in that category. All the programs combined had a mode of one

TABLE XIII

PERSONNEL INVOLVED IN CARRYING OUT MICROTEACHING IN
INDUSTRIAL ARTS TEACHER EDUCATION PROGRAMS

Type of Personnel	Programs Utilizing Microteaching							
	Within Dept. Only		Outside Dept. Only		Within and Outside Dept.		All Programs Combined	
	Individuals		Individuals		Individuals		Individuals	
	No.	%	No.	%	No.	%	No.	%
Faculty	102	71.8	41	51.3	39	65.0	182	64.5
Graduate Assistant	17	12.0	18	22.5	11	18.3	46	16.3
Audio Visual Technician	19	13.4	15	18.8	8	13.3	42	14.9
Others	4	2.8	6	7.5	2	3.3	12	4.3
Total	142	100.0	80	100.1	60	99.9	282	100.0

TABLE XIV

TOTAL NUMBER OF PERSONNEL INCLUDED IN A MICROTEACHING PROGRAM

Number of Personnel Per Program	Programs Utilizing Microteaching							
	Within Dept. Only		Outside Dept. Only		Within and Outside Dept.		All Programs Combined	
	No.	%	No.	%	No.	%	No.	%
1	23	39.7	4	16.7	8	40.0	35	34.3
2	16	27.6	5	20.8	1	5.0	22	21.6
3	8	13.8	6	25.0	3	15.0	17	16.7
4	5	8.6	2	8.3	2	10.0	9	8.8
5	4	6.9	1	4.2	1	5.0	6	5.9
6	1	1.7	1	4.2	2	10.0	4	3.9
7	0	--	1	4.2	1	5.0	2	2.0
8	0	--	0	--	0	--	0	--
9	1	1.7	0	--	1	5.0	2	2.0
10 and over	0	--	2	8.3	0	--	2	2.0
No Response	0	--	2	8.3	1	5.0	3	2.9
Total	58	100.0	24	99.9	20	100.0	102	100.1

MODE: 1 Person per Program

person per program with 35 programs (34.3 percent) reporting that one person carried out their microteaching. Twenty-two programs (21.6 percent) reported two persons per program and 17 programs (16.7 percent) reported three persons per program.

By examining Table XV one can see the variety of combinations of individuals or groups of individuals present during the lesson critique in a microteaching session. The three groups of programs utilizing microteaching were similar in their choice of critique groups. Over half of the programs utilized a critique group of student, college supervisor, and pupils of the micro-class. The within department only group lists 39 programs (67.2 percent) in this category; the outside department only group lists 15 programs (62.5 percent); and the within and outside departments list 11 programs (55.0 percent). All the programs combined listed 65 programs (63.7 percent) with the student, college supervisor, and pupils of the micro-class critique group. The other notable critique group was made up of the student and college supervisor. Fourteen programs (13.7 percent) utilized this type of a critique group.

Major Problems Related to the Initial Introduction and Operation of a Microteaching Program

The data presented in Table XVI deals with the major problems related to the initial introduction and operation of a microteaching program. The three groups of programs utilizing microteaching were similar in reporting problems related to equipment and time. The within department only group listed 16 problems (21.3 percent) that were

TABLE XV

INDIVIDUALS OR GROUP OF INDIVIDUALS PRESENT DURING THE LESSON
CRITIQUE IN A MICROTEACHING SESSION

	Programs Utilizing Microteaching							
	Within Dept. Only		Outside Dept. Only		Within and Outside Dept.		All Programs Combined	
	No.	%	No.	%	No.	%	No.	%
Individuals or Groups of Individuals								
Student, college supervisor, and pupils of the micro-class	39	67.2	15	62.5	11	55.0	65	63.7
Student & college supervisor	9	15.5	1	4.2	4	20.0	14	13.7
Student and pupils of the micro-class	3	5.2	1	4.2	0	--	4	3.9
College supervisor and pupils	2	3.5	0	--	2	10.0	4	3.9
College supervisor	1	1.7	2	8.3	1	5.0	4	3.9
Student	2	3.5	1	4.2	0	--	3	2.9
Student, college supervisor, pupils of the micro-class, and others	1	1.7	1	4.2	1	5.0	3	2.9
Student, pupils of the micro-class, and others	1	1.7	1	4.2	0	--	2	2.0
Pupils	0	--	0	--	1	5.0	1	1.0
No Response	0	--	2	8.3	0	--	2	2.0
Total	58	100.0	24	100.1	20	100.0	102	99.9

TABLE XVI

MAJOR PROBLEMS RELATED TO THE INITIAL INTRODUCTION OF MICROTEACHING
TO INDUSTRIAL ARTS TEACHER PREPARATION PROGRAMS

Problems Related To:	Programs Utilizing Microteaching							
	Within Dept. Only		Outside Dept. Only		Within and Outside Dept.		All Programs Combined	
	Problems		Problems		Problems		Problems	
	No.	%	No.	%	No.	%	No.	%
Equipment	16	21.3	5	19.2	9	37.5	30	24.0
Time	19	25.3	3	11.5	3	12.5	25	20.0
Organization, Preparation, and Administration	10	13.3	3	11.5	1	4.2	14	11.2
Scheduling	5	6.7	3	11.5	3	12.5	11	8.8
No Problems	4	5.3	3	11.5	4	16.7	11	8.8
Acceptance and Ethnusiiasm of Students and Faculty	7	9.3	0	--	3	12.5	10	8.0
Funds	7	9.3	1	3.9	1	4.2	9	7.2
Not Applicable	2	2.7	0	--	0	--	2	1.6
No Response	5	6.7	8	30.8	0	--	13	10.4
Total	75	99.9	26	99.9	24	100.1	125	100.0

related to equipment; the outside department only group listed five equipment problems (19.2 percent); and the within and outside department group listed nine equipment problems (37.5 percent). The within department only group listed 19 problems (25.3 percent) related to time; the outside department only group listed three time problems (11.5 percent); and the within and outside department group listed three time problems (12.5 percent). The within department only group listed ten problems (13.3 percent) related to organization, preparation, and administration. Eight programs in the outside department only group did not respond to this item. The within and outside department group had four "no problems" listed. When all groups are combined there were 30 problems (24.0 percent) listed relating to equipment; 25 problems (20.0 percent) listed relating to time; and 14 problems (11.2 percent) related to organization, preparation, and administration.

Table XVII lists the major problems encountered after the initial introduction of microteaching to industrial arts preparation programs. The within department only group and the outside department only group both listed "no problems" as the highest number of listings on this item. All three groups showed some consensus on problems related to time, equipment, and scheduling. When all programs were combined, "no problems" was listed 24 times (20.7 percent). Time problems were listed most frequently with 22 problems (19.0 percent). Problems relating to equipment were next with 15 problems (12.9 percent). Scheduling problems were listed ten times at 8.6 percent. There were 29 programs that did not respond to this item.

TABLE XVII

MAJOR PROBLEMS ENCOUNTERED AFTER THE INITIAL INTRODUCTION OF MICROTEACHING
TO INDUSTRIAL ARTS TEACHER PREPARATION PROGRAMS

Problems Related To:	Programs Utilizing Microteaching							
	Within Dept. Only		Outside Dept. Only		Within and Outside Dept.		All Programs Combined	
	Problems		Problems		Problems		Problems	
	No.	%	No.	%	No.	%	No.	%
No Problems	16	23.5	5	19.2	3	13.6	24	20.7
Time	15	22.1	3	11.5	4	18.2	22	19.0
Equipment	8	11.8	3	11.5	4	18.2	15	12.9
Scheduling	5	7.4	3	11.5	2	9.1	10	8.6
Realistic Learning Environment	2	2.9	0	--	1	4.6	3	2.6
Learning System	0	--	2	7.7	1	4.6	3	2.6
Peer Approval	2	2.9	0	--	1	4.6	3	2.6
Lesson Quality	2	2.9	0	--	0	--	2	1.7
Getting Feedback	1	1.5	0	--	1	4.6	2	1.7

TABLE XVII--(CONTINUED)

Problems Related To:	Programs Utilizing Microteaching							
	Within Dept. Only		Outside Dept. Only		Within and Outside Dept.		All Programs Combined	
	Problems		Problems		Problems		Problems	
	No.	%	No.	%	No.	%	No.	%
Faculty Interest and Overload	2	2.9	0	--	0	--	2	1.7
Funds	1	1.5	0	--	0	--	1	0.9
No Response	14	20.6	10	38.5	5	22.7	29	25.0
Total	68	100.0	26	99.9	22	100.2	116	100.0

Value Placed on Microteaching

The directors of industrial arts teacher education programs utilizing microteaching were asked if they planned to continue their microteaching program next year. All responses to this item were "yes."

The directors were also asked to rate the effect that microteaching had on their teacher education programs. The rating scale ran from No Effect (1) to Significantly Improved the Program (5). Table XVIII shows that the mode for each group of programs was 4.00. The within department only group rated the effect of microteaching the highest. The rating given microteaching by the within and outside department group was the lowest of the three groups. When all programs were combined, the mean was 4.05; the median was 4.10; and the mode was 4.00.

The last question relating to the value placed on microteaching asked the directors how they would rate the importance of the microteaching phase of their teacher training programs. The rating scale ran from Low (1) to High (5). The mode for the within department only group was 5.00 with 31 programs listing this rating. The within and outside department also had a mode of 5.00 with nine programs listing this rating. The outside department only group's mode was 4.00 with 11 programs listing this rating. When all programs were combined, the mean was 4.22; the median was 4.39; and the mode was 5.00. By examining Table XIX one can see that 82 programs, or 80.4 percent of the programs, listed a rating of 4.00 or better.

Purposes for Which Microteaching Is Being Used

The level or levels of utilization of microteaching in industrial arts teacher education programs are presented in Table XX. All

TABLE XVIII

EFFECT OF MICROTEACHING ON INDUSTRIAL ARTS
TEACHER PREPARATION PROGRAMS

Rating From <u>No Effect</u> (1) to <u>Significantly Improved the</u> <u>Program</u> (5)	Programs Utilizing Microteaching							
	<u>Within</u> <u>Dept. Only</u>		<u>Outside</u> <u>Dept. Only</u>		<u>Within and</u> <u>Outside Dept.</u>		<u>All Programs</u> <u>Combined</u>	
	No.	%	No.	%	No.	%	No.	%
1	0	--	0	--	0	--	0	--
2	2	3.5	1	4.2	2	10.0	5	4.9
3	4	6.9	4	16.7	4	20.0	12	11.8
4	30	51.7	12	50.0	7	35.0	49	48.0
5	18	31.0	3	12.5	6	30.0	27	26.5
No Response	4	6.9	4	16.7	1	5.0	9	8.8
Total	58	100.0	24	100.1	20	100.0	102	100.0

MEAN: 4.05

MEDIAN: 4.10

MODE: 4.00

TABLE XIX

IMPORTANCE OF THE MICROTEACHING PHASE OF INDUSTRIAL ARTS
TEACHER PREPARATION PROGRAMS

Ratings From <u>Low</u> (1) to <u>High</u> (5)	Programs Utilizing Microteaching							
	<u>Within Dept. Only</u>		<u>Outside Dept. Only</u>		<u>Within and Outside Dept.</u>		<u>All Programs Combined</u>	
	No.	%	No.	%	No.	%	No.	%
1	1	1.7	0	--	0	--	1	1.0
2	0	--	2	8.3	2	10.0	4	3.9
3	7	12.1	3	12.5	3	15.0	13	12.8
4	19	32.8	11	45.8	6	30.0	36	35.3
5	31	53.5	6	25.0	9	45.0	46	45.1
No Response	0	--	2	8.3	0	--	2	2.0
Total	58	100.1	24	99.9	20	100.0	102	100.1

MEAN: 4.22

MEDIAN: 4.39

MODE: 5.00

TABLE XX

LEVEL OR LEVELS OF UTILIZATION OF MICROTEACHING IN INDUSTRIAL
ARTS TEACHER EDUCATION PROGRAMS

Level or Levels of Utilization	Levels Listed by Programs Utilizing Microteaching							
	Within Dept. Only		Outside Dept. Only		Within and Outside Dept.		All Programs Combined	
	No.	%	No.	%	No.	%	No.	%
Undergraduate teacher training	58	67.4	23	76.7	20	66.7	101	69.2
Graduate teacher education	13	15.1	2	6.7	5	16.7	20	13.7
In-service	10	11.6	4	13.3	3	10.0	17	11.6
Research	4	4.7	0	--	1	3.3	5	3.4
Others	1*	1.2	0	--	1**	3.3	2	1.4
No Response	0	--	1	3.3	0	--	1	0.7
Total	86	100.0	30	100.0	30	100.0	146	100.0

MODE: Undergraduate Teacher Training

*Advising

**Adult

directors responding to this item indicated that microteaching was utilized at the undergraduate level. When all programs were combined, 101 programs were reported to be using microteaching at the undergraduate level; 20 programs were reported to be using microteaching at the graduate teacher education level; 17 programs were reported to be using microteaching for in-service. Only five programs were reported to be using microteaching for research.

The purposes for which microteaching is being used in industrial arts teacher preparation programs are listed in Table XXI. In all three groups of programs utilizing microteaching the mode was purposes related to teaching skills development. The within department only group listed 39 purposes (47.0 percent) in this category; outside department only group listed 15 purposes (45.5 percent); and within and outside department only group listed 13 purposes (50.0 percent). When all programs are combined, 47.2 percent of the purposes listed were related to teaching skills development. There were 29 purposes (20.4 percent) listed as relating to self-evaluation. Purposes related to preparation for teaching a lesson were listed nine times (6.3 percent). Purposes related to group evaluation were listed eight times (5.6 percent).

Procedures That Are Being Used in the Execution of Microteaching

The directors of industrial arts teacher preparation programs were asked to indicate the teaching method practiced during microteaching encounters. Table XXII presents the data that identifies the teaching methods or combination of teaching methods practiced during microteaching encounters. The demonstration was the mode in all three groups.

TABLE XXI

PURPOSES FOR WHICH MICROTEACHING IS BEING USED IN
INDUSTRIAL ARTS TEACHER PREPARATION PROGRAMS

Purposes Related To:	Purposes Listed by Programs Utilizing Microteaching							
	Within Dept. Only		Outside Dept. Only		Within and Outside Dept.		All Programs Combined	
	No.	%	No.	%	No.	%	No.	%
Teaching skills development	39	47.0	15	45.5	13	50.0	67	47.2
Self-evaluation	18	21.7	9	27.3	2	7.7	29	20.4
Preparation for teaching a lesson	5	6.0	2	6.1	2	7.7	9	6.3
Group evaluation	5	6.0	1	3.0	2	7.7	8	5.6
Individualized instruction to work with special needs	4	4.8	0	--	1	3.9	5	3.5
Pre-student teaching experience	3	3.6	0	--	0	--	3	2.1
Use of instructional media	0	--	2	6.1	1	3.9	3	2.1
Other*	3	3.6	0	--	0	--	3	2.1
Not applicable	2	2.4	1	3.0	1	3.9	4	2.8
No response	4	4.8	3	9.1	4	15.4	11	7.8
Total	83	99.9	33	100.1	26	100.2	142	99.9

MODE: Teaching Skills Development

*Includes: research, Flander's interaction analysis; working with small groups.

TABLE XXII

TEACHING METHODS PRACTICED DURING MICROTEACHING ENCOUNTER IN INDUSTRIAL
ARTS TEACHER PREPARATION PROGRAMS

Teaching Methods of Combination of Teaching Methods	Programs Utilizing Microteaching							
	Within Dept. Only		Outside Dept. Only		Within and Outside Dept.		All Programs Combined	
	No.	%	No.	%	No.	%	No.	%
Demonstration	34	58.6	13	54.2	9	45.0	56	54.9
Demonstration, Discussion, and Lecture	6	10.4	2	8.3	4	20.0	12	11.8
Demonstration and Lecture	5	8.6	2	8.3	4	20.0	11	10.8
Demonstration and Discussion	4	6.9	2	8.3	2	10.0	8	7.8
Lecture	4	6.9	2	8.3	0	--	6	5.9
Discussion	2	3.5	1	4.3	0	--	3	2.9
Discussion and Lecture	1	1.7	0	--	0	--	1	1.0
Others	2	3.5	0	--	0	--	2	2.0
No Response	0	--	2	8.3	1	5.0	3	2.9
Total	58	100.1	24	100.0	20	100.0	102	100.0

MODE: Demonstration

The within department only group listed 34 programs (58.6 percent) using demonstration. The outside department only group had a slightly lower percentage of usage of the demonstration with 54.2 percent. The within and outside department group included nine programs using the demonstration at 45.0 percent. When all programs were combined, the demonstration was favored above all other methods by including 54.9 percent of the programs. The next two categories close to it were combinations that included the demonstration. Twelve programs indicated a preference for a combination of demonstration, discussion, and lecture; and this was 11.8 percent of the programs. Eleven programs preferred a combination of the demonstration and lecture which included 10.8 percent of the programs.

Models are usually presented to the students before they prepare for a microteaching encounter. Table XXVIII displays the methods or combinations of methods used in presenting models of microteaching to student teachers in industrial arts. The mode for the within department only group was to present the model live. Twenty programs (34.5 percent) listed live model as the preferred method. The outside department only group's most frequently used method was the video-taped model with eight programs (33.3 percent) favoring it. The within and outside department group split with 25.0 percent for the video-taped model and 25.0 percent for the live model. The mode for all programs combined was the live model with 31 programs (30.4 percent). The video-taped model was the next highest with 30 programs (29.4 percent). The next category was a combination of the live and video-taped model, and it included 12 programs (11.9 percent).

TABLE XXIII

METHODS USED IN PRESENTING MODELS OF MICROTEACHING TO STUDENT TEACHERS
IN INDUSTRIAL ARTS TEACHER PREPARATION PROGRAMS

Methods of Combinations of Methods Used	Programs Utilizing Microteaching							
	Within Dept. Only		Outside Dept. Only		Within and Outside Dept.		All Programs Combined	
	No.	%	No.	%	No.	%	No.	%
Live	20	34.5	6	25.0	5	25.0	31	30.4
Video taped	17	29.3	8	33.3	5	25.0	30	29.4
Live and video taped	5	8.6	3	12.5	4	20.0	12	11.9
Video taped and written	3	5.2	2	8.3	0	--	5	4.9
Written	3	5.2	1	4.2	0	--	4	3.9
Live, video taped, and audio taped	0	--	2	8.3	1	5.0	3	2.9
Video taped and audio taped	2	3.5	0	--	1	5.0	3	2.9
Live and written	3	5.2	0	--	0	--	3	2.9
Live and audio taped	1	1.7	0	--	1	5.0	2	2.0
Others*	4	6.9	0	--	1	5.0	5	4.9
No Response	0	--	2	8.3	2	10.0	4	3.9
Total	58	100.1	24	99.9	20	100.0	102	100.0

MODE: Live

*Includes combinations that were only used by one program.

Microteaching encounters often follow a sequence that includes the following: teaching a lesson; having it critiqued; reteaching the lesson; and having it critiqued again. Table XXIV shows the use of the reteach phase of the teach-critique, reteach-critique cycle. Directors of industrial arts teacher preparation programs were asked to indicate their use of the reteach phase by responding to one of the following: sometimes reteach; never reteach; and always reteach. There was a reasonable degree of similarity in all three of the groups of programs utilizing microteaching except in the always reteach category. The outside department only group did not list any programs in the always reteach category. This group did have a higher percentage of programs listed under the sometimes reteach category. After all programs were combined, 66 programs (64.7 percent) were listed as sometimes using the reteach. Nineteen programs (18.6 percent) were reported as never reteaching, and 12 programs (11.8 percent) were reported as always reteaching.

Microteaching can be recorded by audio tape, video tape, or written report. In Table XXV the recording methods utilized during microteaching encounters are displayed. Video tape had the highest frequency of use by the majority of the programs in all three groups. Three programs, or 15.0 percent, of the within and outside department group used audio tape the majority of the time. Six programs, or 10.4 percent, of the within department only group used the written method in most encounters. Seventy-two programs, or 70.6 percent of all the programs combined, utilized the video tape in most encounters. Only nine programs (8.8 percent) utilized the audio tape for the majority of their encounters, and seven programs (6.9 percent) utilized the written method the majority of the time.

TABLE XXIV

USE OF THE RETEACH PHASE OF THE TEACH-CRITIQUE, RETEACH-CRITIQUE CYCLE DURING
MICROTEACHING ENCOUNTER IN INDUSTRIAL ARTS TEACHER PREPARATION PROGRAMS

During Microteaching Encounters Students:	Programs Utilizing Microteaching							
	Within Dept. Only		Outside Dept. Only		Within and Outside Dept.		All Programs Combined	
	No.	%	No.	%	No.	%	No.	%
Sometimes reteach	35	60.4	19	79.2	12	60.0	66	64.7
Never reteach	12	20.7	3	12.5	4	20.0	19	18.6
Always reteach	10	17.2	0	--	2	10.0	12	11.8
No response	1	1.7	2	8.3	2	10.0	5	4.9
Total	58	100.0	24	100.0	20	100.0	102	100.0

TABLE XXV

RECORDING METHOD UTILIZED DURING MICROTEACHING ENCOUNTERS IN
INDUSTRIAL ARTS TEACHER PREPARATION PROGRAMS

Recording Methods and Combinations of Recording Methods	Programs Utilizing Microteaching							
	Within Dept. Only		Outside Dept. Only		Within and Outside Dept.		All Programs Combined	
	No.	%	No.	%	No.	%	No.	%
Video tape	42	72.4	18	75.0	12	60.0	72	70.6
Audio tape	5	8.6	1	4.2	3	15.0	9	8.8
Written	6	10.4	0	--	1	5.0	7	6.9
Video and audio tape	0	--	2	8.3	2	10.0	4	3.9
Video tape and written	2	3.5	1	4.2	0	--	3	2.9
Others*	3	5.2	0	--	0	--	3	2.9
No response	0	--	2	8.3	2	10.0	4	3.9
Total	58	100.1	24	100.0	20	100.0	102	99.9

MODE: Video tape

*Includes combinations that were only used by one program.

Table XXVI shows the recording method for microteaching encounters favored by industrial arts teacher educators. When asked "which recording method do you feel is best," the respondents favored the video tape. The within and outside department group had three programs that favored audio tape, and the within department only group had three programs that favored audio tape, and the within department only group had three programs that preferred the written method. When all three programs were combined, 84 programs were reported as favoring video tape; this was 82.4 percent of all the programs.

The directors of industrial arts teacher preparation programs were asked to list the approximate percentage of college students (peers), high school pupils, junior high school pupils, and others used as pupils in micro-classes. Table XXVII includes the directors' responses. Although there were numerous combinations of these types of pupils, the college student was used the majority of the time either exclusively or in combination with other students. Seventy-four of the programs used college students exclusively; this was 72.6 percent of all the programs. The combinations show that there is some use of high school and junior high school students, but their use is limited. Comments listed in Appendix E will help explain this limited use of "real" students.

The number of pupils, peer or real, utilized to make up a micro-class in industrial arts teacher preparation programs is recorded in Table XXVIII. The three groups of programs utilizing microteaching show a concentration of programs in the first four categories; this would include from 1 to 20 pupils. When all programs are combined, the mean was 12 to 13 pupils; the median was 11 pupils; and the mode was 6-10 pupils. Sixty-four of all the programs are included in the first three categories, which would include 1 to 15 pupils.

TABLE XXVI

RECORDING METHOD FOR MICROTEACHING ENCOUNTERS FAVORED BY
INDUSTRIAL ARTS TEACHER EDUCATORS

Recording Methods and Combinations of Recording Methods	Programs Utilizing Microteaching							
	Within Dept. Only		Outside Dept. Only		Within and Outside Dept.		All Programs Combined	
	No.	%	No.	%	No.	%	No.	%
Video tape	49	84.5	21	87.5	14	70.0	84	82.4
Audio tape	2	3.4	0	--	3	15.0	5	4.9
Written	3	5.2	0	--	0	00	3	2.9
Video tape, audio tape, and written	2	3.5	0	--	0	--	2	2.0
Video and audio tape	1	1.7	1	4.2	0	--	2	2.0
Video tape and written	1	1.7	0	--	0	--	1	1.0
No response	0	--	2	8.3	3	15.0	5	4.9
Total	58	100.0	24	100.0	20	100.0	102	100.1

MODE: Video tape

TABLE XXVII

TYPES OF STUDENTS USED AS PUPILS IN MICRO-CLASSES DURING MICROTACHING
ENCOUNTERS IN INDUSTRIAL ARTS TEACHER PREPARATION PROGRAMS

Approximate Percentage of Types of Students	Programs Utilizing Microteaching							
	Within Dept. Only		Outside Dept. Only		Within and Outside Dept.		All Programs Combined	
	No.	%	No.	%	No.	%	No.	%
100% College	43	74.1	19	79.2	12	60.0	74	72.6
95% College, 5% High School	1	1.7	0	--	0	--	1	1.0
90% College, 10% High School	1	1.7	0	--	0	--	1	1.0
90% College, 8% High School, and 2% Junior High School	0	--	0	--	1	5.0	1	1.0
90% College, 2% High School, and 8% Others	1	1.7	0	--	0	--	1	1.0
90% College, 10% Junior High School	0	--	0	--	2	10.0	2	2.0
80% College, 20% High School	2	3.5	1	4.2	0	--	3	2.9
80% College, 10% High School, and 10% Junior High School	1	1.7	0	--	0	--	1	1.0
80% College, 20% Others	0	--	1	4.2	0	--	1	1.0

TABLE XXVII--(CONTINUED)

Approximate Percentage of Types of Students	Programs Utilizing Microteaching							
	Within Dept. Only		Outside Dept. Only		Within and Outside Dept.		All Programs Combined	
	No.	%	No.	%	No.	%	No.	%
75% College, 25% High School	1	1.7	0	--	0	--	1	1.0
66% College, 34% Others	0	--	0	--	1	5.0	1	1.0
66% College, 9% High School, and 25% Junior High School	1	1.7	0	--	0	--	1	1.0
60% College, 40% High School	0	--	0	--	1	5.0	1	1.0
60% College, 20% High School, and 20% Junior High School	1	1.7	0	--	0	--	1	1.0
50% College, 50% High School	0	--	1	4.2	2	10.0	3	2.9
60% High School, 40% Junior High School	1	1.7	0	--	0	--	1	1.0
100% Junior High School	2	3.5	0	--	0	--	2	2.0
Not Applicable	3	5.2	0	--	0	--	3	2.9
No Response	0	--	2	8.3	1	5.0	3	2.9
Total	58	99.9	24	100.1	20	100.0	102	100.2

MODE: 100% College Students

TABLE XXVIII

NUMBER OF PUPILS, PEER OR REAL, UTILIZED TO MAKE UP A MICRO-CLASS IN
INDUSTRIAL ARTS TEACHER PREPARATION PROGRAMS

Pupils, Peer or Real	Programs Utilizing Microteaching							
	Within Dept. Only		Outside Dept. Only		Within and Outside Dept.		All Programs Combined	
	No.	%	No.	%	No.	%	No.	%
1 - 5	14	24.2	3	12.5	2	10.0	19	16.6
6 - 10	16	27.6	5	20.8	6	30.0	27	26.5
11 - 15	7	12.1	5	20.8	6	30.0	18	17.6
16 - 20	12	20.7	3	12.5	1	5.0	16	15.7
21 - 25	2	3.4	1	4.2	2	10.0	5	4.9
26 - 30	3	5.2	2	8.3	0	--	5	4.9
Over 30	2	3.4	2	8.3	2	10.0	6	5.9
Not Applicable	0	--	2	8.3	1	5.0	3	2.9
No Response	2	3.4	1	4.2	0	--	3	2.9
Total	58	99.9	24	99.9	20	100.0	102	99.9

MEAN: 12 to 13 pupils

MEDIAN: 11 pupils

MODE: 6 to 10 pupils

Only three programs that utilized microteaching reported that they paid their micro-class pupils. In the within department only group one program paid pupils at a rate of \$2.00 an hour; in the outside department only group one program paid pupils at a rate of \$1.75 an hour; and in the within and outside department group one program paid pupils at a rate of \$2.10 an hour.

Table XXIX displays the breakdown on the length of time for a microteaching lesson in industrial arts teacher preparation programs. The three groups of programs utilizing microteaching have the majority of their programs included in the 5-10 and 10-15 minute categories. The outside department only group includes five programs in the 15-20 minutes category. The mode for all programs combined is 5-10 minutes with 51 programs in this category, to 50.0 percent of all programs. The 10-15 minute category includes 26 programs, or 25.5 percent. The median was 9.5 minutes.

TABLE XXIX

LENGTH OF TIME FOR A MICROTEACHING LESSON IN INDUSTRIAL ARTS
TEACHER PREPARATION PROGRAMS

Minutes	Programs Utilizing Microteaching							
	Within Dept. Only		Outside Dept. Only		Within and Outside Dept.		All Programs Combined	
	No.	%	No.	%	No.	%	No.	%
5 - 10	32	55.2	10	41.7	9	45.0	51	50.0
10 - 15	13	22.4	4	16.7	9	45.0	26	25.5
15 - 20	3	5.2	5	20.8	1	5.0	9	8.8
20 - 30	3	5.2	1	4.2	0	--	4	3.9
30 - 40	2	3.4	0	--	1	5.0	3	2.9
40 - 50	1	1.7	2	8.3	0	--	3	2.9
50 and over	2	3.4	0	--	0	--	2	2.0
No Response	2	3.4	2	8.3	0	--	4	3.9
Total	58	99.9	24	100.0	20	100.0	102	99.9

MEDIAN: 9.5 minutes

MODE: 5-10 minutes

CHAPTER V

SUMMARY, CONCLUSIONS, AND RECOMMENDATIONS

Summary

The identification of the present status of the utilization of microteaching in industrial arts teacher preparation programs was the primary purpose of this study. Objectives were established to give direction to the accomplishment of the purpose. The objectives pointed to the identification of the (1) extent of utilization of microteaching, (2) organizational elements of microteaching, (3) major problems related to the initial introduction and operation of a microteaching program, (4) value placed on microteaching, (5) purposes for which microteaching is being used, and (6) procedures that are being used in the execution of microteaching. The study included colleges and universities in the United States that prepare teachers in industrial arts education.

The review of literature attempted to record the progress of microteaching from an innovation to an established technique that is recognized as an integral part of teacher education. In company with this description the mix of industrial arts teacher education and microteaching was presented.

A feasibility survey involving a small sample of industrial arts education programs was conducted to determine the extent of utilization of microteaching in industrial arts. The results of the feasibility survey indicated that industrial arts teacher education was utilizing

microteaching.

The nature of the research in the study was descriptive, and a survey was used to collect the data. A questionnaire was developed that contained 26 items designed to contribute to the objectives of the study. The questionnaire was mailed to the directors of industrial arts education programs in 205 colleges and universities recognized by the American Council on Industrial Arts Teacher Education. After a second mailing, the final return made up 88.3 percent of the 205 institutions in the study.

The data from the questionnaires was compiled and organized into tables and a descriptive narrative. Percentages, means, medians, and modes were used to aid in the description of the data. In the presentation of the data the programs that were included in the return were placed into groups that were established by the organizations location of their microteaching programs. The three groups were identified as programs utilizing microteaching within their own departments only, outside their departments only, and within and outside their departments. In the presentation of the data major differences between the groups were pointed out in the narrative.

Findings and Conclusions

The following is a restatement of the objectives of the study and the respective findings and conclusions provided by the data collected in the study.

Objective 1: To provide industrial arts educators with an appraisal of the extent of utilization of microteaching in industrial arts teacher preparation programs.

Of the 181 programs that were included in the return, 102 programs were reported as using microteaching; this represented 56.4 percent of the programs. On the average these programs have been using microteaching for 6.57 years. Some 15.2 percent of the programs included in the study that do not currently utilize microteaching plan to do so next year. If these programs do implement microteaching next year, 62.9 percent of the programs would be using microteaching in the preparation of industrial arts teachers. This would indicate a high degree of utilization of microteaching in industrial arts education programs.

Based upon the information relative to current and project utilization of microteaching, it is concluded that microteaching is an accepted and established technique used in the preparation of industrial arts teachers.

Objective 2: To identify organizational elements of microteaching that are utilized by industrial arts educators.

Fifty-eight programs, or 56.9 percent of the programs, provided microteaching within their departments only. In 24 programs, or 23.5 percent of the programs, microteaching was provided outside the department only. The remaining 20 programs utilized microteaching within and outside the department; this was 19.6 percent of the programs. This organizational distribution will probably change next year because 29.2 percent of the respondents in the outside department only group reported that they will include microteaching in their departments next year. Of the programs utilizing microteaching 76.5 percent either provide all or a part of the microteaching within their own department. When microteaching is provided outside the department, the education department and division was indicated as providing the microteaching in 58.0 percent of the responses.

Methods of teaching industrial arts or industrial education made up 44.0 percent of the listings of courses including microteaching experiences required of industrial arts majors. General methods comprised 18.7 percent of the listings; and technology, materials, or industrial studies courses made up 12.1 percent of the listings. Over 75.0 percent of the courses were offered on the junior and senior level, with 48.3 percent on the senior level. Methods courses are typically junior or senior level courses. The majority of these courses were three credit hour courses; 57.9 percent of the courses listed were three credit hour courses.

In programs operating on the semester system, the majority of the microteaching took place during the fall and spring semesters with only 10.3 percent of the students being involved in the summer. On the quarter system the majority of the microteaching took place during the fall, winter, and spring quarters with only 14.6 percent of the students being involved during the summer quarter.

The mode for the number of microteaching experiences required of students in industrial arts was 2.00 experiences. The mean of 4.41 microteaching experiences was pulled up by a few programs reporting an extremely high number of experiences being required of their majors. The median of 2.72 microteaching experiences would probably be the best indicator of consensus. This low number of microteaching experiences would lead to the conclusion that the majority of the students involved are practicing a limited number of teaching skills and the full potential of microteaching is not being utilized.

The majority of the personnel involved in carrying out the microteaching were faculty members. They comprised 74.5 percent of all the

personnel involved with the remaining support being provided by graduate assistants and audio visual technicians. The number of people involved in 34.3 percent of the programs was just one person; and in 21.6 percent of the programs only two people were involved. This might lead one to conclude that in many of the programs one faculty member is carrying out the microteaching phase of the teacher preparation program.

During the critique of the microteaching encounter in 63.7 percent of the programs the student teacher, college supervisor, and pupils of the micro-class were present.

The data leads to the conclusion that there is no common organizational pattern for the utilization of microteaching in the preparation of industrial arts teachers. It would appear that the organizational pattern is influenced by the perceived needs and limitations of each institution.

Objective 3: To identify the major problems related to the initial introduction and operation of a microteaching program into a teacher preparation program in industrial arts.

During the initial introduction of microteaching to industrial arts teacher preparation programs 24.0 percent of the problems listed were related to equipment and 20.0 percent of the problems listed were related to time. After the initial introduction of microteaching to industrial arts teacher preparation programs, 19.0 percent of the problems listed were related to time and 12.9 percent of the problems listed were related to equipment. Some 20.7 percent of the listings were statements indicating that no problems were experienced.

It is concluded that the major problems encountered in the utilization of microteaching were related to time and equipment.

Objective 4: To identify the value placed on microteaching by industrial arts teacher educators.

All programs presently using microteaching intend to continue their use of it next year. When rating the effect of microteaching on their teacher training programs, directors rated microteaching at 4.05 (mean) on a rating scale that ran from No Effect (1) to Significantly Improved the Program (5). When rating the importance of the microteaching phase of their teacher preparation program, directors rated microteaching at 4.22 (mean) on a rating scale that ran from Low (1) to High (5).

This data would lead to the conclusion that industrial arts teacher educators feel that microteaching can improve a teacher preparation program and that it is considered an important phase of that program.

Objective 5: To identify the purposes for which microteaching is being used in industrial arts teacher preparation programs.

All programs, except one that did not respond to the item, used microteaching in their undergraduate teacher training. Twenty programs were also utilizing microteaching in the graduate teacher education program. Teaching skills development represented 47.2 percent of the purposes that were listed. Purposes related to self-evaluation made up 20.4 percent of the listings.

It is concluded that microteaching is presently used in undergraduate programs to assist with teaching skills development and self-evaluation.

Objective 6: To identify the procedures that are being used in the execution of microteaching in industrial arts teacher preparation programs.

Of the teaching methods practiced during a microteaching encounter, demonstrations were reported to be practiced by 54.9 percent of the programs. Live and video-taped models were used by the majority of the programs. Preference for the live and video-taped model was almost equal, and when combined they were preferred by 71.7 percent of the programs.

The use of the reteach phase of the teach-critique, reteach-critique cycle by programs was very limited, with only 11.8 percent of the programs using it during every encounter. Sixty-six programs (64.7 percent) used the reteach sometimes. This item was poorly stated on the questionnaire and resulted in a limited use of the data.

In most microteaching encounters the programs utilized video tape when recording the micro-lesson. Video tape was reported as being utilized in most encounters by 70.6 percent of the programs. Video tape was preferred as a recording method by 82.4 percent of the programs.

College students or peer students were used as pupils of the micro-class in 72.6 percent of the programs. There was some use of high school and junior high school students, but it was very limited. The average micro-class size was 12 to 13 pupils, with 26.5 percent of the programs using 6 to 10 pupils.

Fifty percent of the programs used a micro-lesson from 5 to 10 minutes in length, and 25.5 percent of the programs used a lesson of 10 to 15 minutes in length. The lesson lengths reported above were within the range recommended for microteaching.

It is concluded that the live and video-taped models are the popular modes for presenting an example of a micro-lesson to students. Since teaching involves all senses, written and audio-taped models are

not felt to be as effective. Even though video tape recorders are not considered a requirement for recording microteaching encounters, one could conclude that the video tape is felt to be the most effective and efficient form of recording method by the industrial educators involved in microteaching. It is concluded that the large micro-class size was due to the use of peer students who are enrolled in the class that requires the microteaching. If real students were used, the class size would probably have been lower. One could conclude that programs using longer lessons would probably have a higher number of problems relating to time than those using the shorter lesson length.

Implications

The following section contains the implications that involve the data collected in the study, the review of literature, and the writer's experience in industrial arts education.

1. The average number of years of utilization of micro-teaching by programs was 6.57 years. A more realistic measure of central tendency would be the mode of 5.00 years because there were several very long periods of use in the nine years and over category that tended to pull the mean up. These long periods of use may include some of the components of microteaching, but they might not be microteaching as it is defined today.

2. In most cases the area providing microteaching for industrial arts departments was the education departments and divisions. The 58.0 percent that represented their utilization was probably inaccurate because of semantics and organization. The categories listed as audio-visual departments and studios, curriculum and instruction departments,

and learning and teaching centers may in some cases all be under an education division.

3. The breakdown of courses including microteaching tended to support the organizational location of the microteaching program. The within department only group's course listings did not include any general methods of teaching, while the outside department only group was reported to have 44.4 percent of its course listings in general methods of teaching. The within and outside department group was about equally split between general methods of teaching and methods of industrial arts of industrial education.

4. The high proportion of junior and senior level courses including microteaching was expected by the writer but is somewhat discouraging. The writer feels that freshmen and sophomores need some experiences that would help them develop a better understanding of what is involved in teaching. Microteaching could be one of these experiences.

5. The high degree of student involvement in microteaching during the academic year would tend to support the high use of microteaching at the undergraduate level. The writer feels that microteaching has a great deal to offer on the graduate level, but use on the graduate level was rather limited. Industrial arts teachers at the graduate level still need to spend some time in the area of teaching skills development.

6. After three years of experience with microteaching the writer would concur with the findings that the major problems are in the area of time and equipment. The preparation for a student's first microteaching encounter often involves a considerable amount of individualized instruction that can be worthwhile but time consuming. If the video tape equipment is being used as an instructional aid in other areas, equipment related problems are unavoidable.

7. The fact that the demonstration was practiced the majority of the time in microteaching encounters by those programs utilizing microteaching outside the department was surprising. The writer's personal experience with microteaching programs in the education department or division leads him to expect a high use of discussions in those groups. If microteaching is to be provided outside the department, the industrial arts educators should control the types of teaching methods that will be practiced.

8. The high use of college (peer) students as pupils in the microteaching class was also reported in Ward's (26) study. The writer feels that in most cases industrial educators have been confronted with too many problems when attempting to use public school students. The college (peer) students are usually easier to obtain.

9. Some of the programs that reported micro-lessons that exceed 30 minutes and classes that include over 15 students were probably out of the realm of microteaching by some educators' standards. The writer did not exclude these from the study, but an attempt was made to point out the data that could have been influenced by them.

Recommendations

The author offers the following recommendations relating to research in the area of microteaching and industrial arts teacher education.

1. The data collected in the study indicates that the majority of the microteaching encounters took place in junior or senior level courses. Keeping this in mind, it is recommended that the value of microteaching on the freshman and sophomore levels should be explored.

Microteaching at these levels could help students decide if teaching was the correct career choice.

2. This study did not include an evaluation of microteaching by the students who have practiced teaching methods in the microteaching encounter. This is an area that should be studied in the future.

SELECTED BIBLIOGRAPHY

- (1) Allen, Dwight W. "Micro-Teaching, A Description." Research in Education. ERIC ED 019 224, 1967.
- (2) Allen, Dwight W. "New Dimensions in Trade and Technical Teacher Education." American Vocational Journal, Vol. 41, No. 5 (May, 1966), 20-22.
- (3) Allen, Dwight W., and Kevin Ryan. Microteaching. Reading, Massachusetts: Addison-Wesley Publishing Co., 1969.
- (4) American Council on Industrial Arts Teacher Education and National Association of Industrial and Technical Teacher Educators. Industrial Teacher Education Directory. Homewood, Illinois: Goodhart Wilcox, Co., 1972-73.
- (5) Amidon, Edmund J., Charles M. Galloway, Dwight W. Allen, Arthur S. Eve, and Donald R. Cruickshank. "A Workshop in the Analysis of Teachers: Interaction Analysis, Nonverbal Communication, Microteaching Simulation." Research in Education. ERIC ED 031 435, 1969.
- (6) Barnard, David P. "Audio-Visuals." Industrial Arts and Vocational Education, Vol. 52, No. 1 (January, 1963), 10, 12, 44, 46.
- (7) Ciampa, B. J. "VTR . . . Education's Benevolent Humility Device." Research in Education. ERIC ED 005 970, 1971.
- (8) Cochran, Leslie H., and William D. Wolansky. "Micro-Teaching for Experienced Teachers." Journal of Industrial Teacher Education, Vol. 6, No. 4 (Summer, 1969), 38-42.
- (9) Cooper, James M., and Dwight W. Allen. "Microteaching: History and Present Status." Research in Education. ERIC ED 036 471, 1970.
- (10) Doty, Charles R. "Micro-Teaching: Applications for Vocational and Technical Teacher Education." Journal of Industrial Teacher Education, Vol. 10, No. 3 (Spring, 1973), 43-53.
- (11) Eggers, Jerry R. "Videotape Micro-Teaching in I-A Teacher Education." School Shop, Vol. 27, No. 8 (April, 1968), 96-97.

- (12) Good, Carter V., Ed. Dictionary of Education. New York: McGraw-Hill Book Company, 1973.
- (13) Guelcher, William, Travis Jackson, and Necheles Fabian. "Microteaching and Teacher Training: A Refined Version." Research in Education. ERIC ED 050 017, 1970.
- (14) Hoerner, James L. "V.T.V. Unrealized Inservice Teacher Education Tool." American Vocational Journal, Vol. 47, No. 1 (January, 1972), 48-49.
- (15) Johnson, James A. "National Survey of Student Teaching Programs, Final Report." Research in Education. ERIC ED 023 643, 1968.
- (16) Johnson, William D., and Sally B. Pancrazio. "The Effectiveness of Three Microteaching Environments in Preparing Undergraduates for Student Teaching." Research in Education. ERIC ED 051 098, 1971.
- (17) Manchak, Paul J. "Closed-Circuit T.V. and Industrial Education." School Shop, Vol. 22, No. 2 (October, 1962), 21-23, 26.
- (18) Miller, W. R. "Supervision of Student Teachers Via Flanders Analysis and Video Tape: A Pilot Project." Journal of Industrial Teacher Education, Vol. 5, No. 4 (Summer, 1968), 34-38.
- (19) Olivero, James L. Micro-Teaching: Medium for Improving Instruction. Columbus, Ohio: Charles E. Merrill Publishing Company, 1970.
- (20) Perlberg, A. "Microteaching Studies in Vocational-Technical Education." Research in Education. ERIC ED 054 390, 1969.
- (21) Perlberg, Arye, Robert A. Tinkham, and Richard Nelson. "Improving Student Teaching. A Pilot Study. Final Report." Research in Education. ERIC ED 128 253, 1967-68.
- (22) Perlberg, Arye, Robert A. Tinkham, and Richard Nelson. "The Use of Portable Video Tape Recorders and Micro-Teaching Techniques to Improve Instruction in Vocational-Technical Programs in Illinois, A Pilot Study. Interim Report." Research in Education. ERIC ED 022 029, 1968.
- (23) Sadker, Myra, and James M. Cooper. "What Do We Know About Microteaching?" Educational Leadership, Vol. 29 (March, 1972), 547-551.
- (24) Sedgwick, Lorry K., and Harlyn T. Misfeldt. "Micro-Teaching: New Tool for a New Program." Industrial Arts and Vocational Education, Vol. 56, No. 6 (June, 1967), 34-35.

- (25) Tucker, C. A. "Video Recordings Implement Teaching." Industrial Arts and Vocational Education, Vol. 56, No. 6 (June, 1967), 37.
- (26) Ward, Blaine Emerson. "A Survey of Microteaching in Secondary Education Programs of All NCATE Accredited Colleges and Universities." (Unpub. Ed.D. dissertation, University of South Dakota, 1969.)
- (27) Wiehe, Theodore E. "Utilizing Video-Tape Lessons in Methods Classes in Industrial Education." Journal of Industrial Teacher Education, Vol. 9, No. 4 (Summer, 1972), 56-61.

APPENDIX A

INSTITUTIONS INCLUDED IN THE
FEASIBILITY SURVEY

The following is a listing of the institutions contacted in the survey.

1. Arizona State University, Tempe
2. University of Arkansas at Pine Bluff
3. University of Northern Colorado, Greeley
4. Illinois State University, Normal
5. Indiana State University, Terre Haute
6. Kansas State Teachers College, Emporia
7. Central Michigan University, Mt. Pleasant
8. Northeast Missouri State University, Kirksville
9. The Ohio State University, Columbus
10. North Texas State University, Denton

APPENDIX B

OBJECTIVE-ITEM BREAKDOWN

OBJECTIVE-ITEM BREAKDOWN

1. To provide industrial arts educators with an appraisal of the extent of utilization of microteaching in industrial arts teacher preparation programs.

Is microteaching used at your institution in the preparation of industrial arts teachers? Yes _____ No _____

How long has microteaching been utilized in your teacher training program? _____ years

Are there plans to include microteaching in your department within the next year? Yes _____ No _____

2. To identify organizational elements of microteaching that are utilized by industrial arts educators.

Is the microteaching provided within your department or outside your department? Within the department _____
Outside the department _____

If microteaching is provided outside the department, please list the department that provides it.

Please list the courses required of your majors that utilize microteaching. Indicate the course title, credit hours, and course level (Fr., So., Jr., Sr., or Grad.).

During the year approximately how many industrial arts students are involved in microteaching? (Fill in as many blanks as apply.)

Semester System
Fall _____ Spring _____ Summer _____

Quarter System
Fall _____ Winter _____ Spring _____ Summer _____

How many total microteaching experiences does your program require of the student? _____ Experiences

How many people other than students are directly involved in carrying out the microteaching in your teacher training program? (Please include part-time people.)

Faculty _____ Graduate Assistants _____ A.V. Technicians _____
Others _____

As the lesson is being critiqued, who is usually present and commenting on the lesson? Indicate as many as necessary.
 The student _____ College supervisor _____
 Pupils of the micro-class _____ Others _____

3. To identify the major problems related to the initial introduction and operation of a microteaching program into a teacher preparation program in industrial arts.

Please list the major problems related to the initial introduction of microteaching into your teacher training program.

Please list any major problems encountered after the initial introduction of microteaching in your teacher training program.

4. To identify the value placed on microteaching by industrial arts teacher educators.

Do you plan to continue your microteaching program next year?
 Yes _____ No _____ If "No" why are you discontinuing it?

What effect has microteaching had on your teacher training program?
No Effect 1 2 3 4 5 Significantly Improved the Program

How would you rate the importance of the microteaching phase of your teacher training program? Circle one.
Low 1 2 3 4 5 High

5. To identify the purposes for which microteaching is being used in industrial arts teacher preparation programs.

At what level or levels is microteaching being utilized?
 Undergraduate teacher training _____ Research _____
 Graduate teacher education _____ In-service _____
 Others (Please list) _____

Please list the purposes for which microteaching is being used in your teacher training program.

6. To identify the procedures that are being used in the execution of microteaching in industrial arts teacher preparation programs.

How is the model for the microteaching encounter presented to the student teacher?
 Audio taped _____ Video taped _____ Written _____ Live _____

In the microteaching encounter which of the following methods is practiced most frequently?

Demonstration _____ Discussion _____ Lecture _____
Other (Please list) _____

In the microteaching encounters do your students complete the teach-critique, reteach-critique cycle?

Always reteach _____ Sometimes reteach _____ No reteach _____

What recording method do you utilize most frequently in your microteaching encounters?

Audio tape _____ Video tape _____ Written _____

Which recording method do you feel is best?

Audio tape _____ Video tape _____ Written _____

Please list the approximate percentage of the following types of micro-class pupils that are used in the encounters.

College students (peers) _____ High school pupils _____
Junior high school pupils _____ Others _____

How many pupils, peer or real, make up the micro-class?

Are pupils paid? Yes _____ No _____

If "Yes" what is the hourly rate? _____

What is the average length of the microteaching lesson?
_____ minutes.

APPENDIX C

COVER LETTER FOR QUESTIONNAIRE

**OKLAHOMA STATE UNIVERSITY • STILLWATER**

School of Occupational and Adult Education
Classroom Building 406
(405) 372-6211, Ext. 6287

74074

January 2, 1974

The purpose of this letter is to request your input to a study related to the use of microteaching in the preparation of industrial arts teachers. Microteaching was developed by Stanford University in 1963, and is described as a scaled-down teaching encounter applying teaching skills to brief lessons taught to a small group of students. There is reliable evidence that industrial arts educators were using similar techniques before 1963. The combination of these techniques and microteaching may have produced a more effective model. The population of this study will include all industrial arts teacher education programs listed in the Industrial Teacher Education Directory. The study will provide industrial arts educators with an accurate appraisal of the utilization of microteaching in industrial arts teacher education.

Your contribution in this survey would be very valuable and it is my hope that all industrial arts teacher education programs will profit from this sharing of ideas and information. The enclosed questionnaire is constructed to provide the information needed and to allow you to present your personal opinion. If you would be interested in the results of this study, I will send them to you on request. Your cooperation in completing and returning this questionnaire will be greatly appreciated.

Sincerely,

Don Cattle
Graduate Student
Oklahoma State University

APPENDIX D

QUESTIONNAIRE

**A SURVEY OF MICROTEACHING TECHNIQUES IN INDUSTRIAL
ARTS TEACHER EDUCATION PROGRAMS**

Introduction: This questionnaire is designed to identify: (1) Organizational elements of microteaching; (2) Major problems related to the initial introduction of a microteaching program; (3) Value placed on microteaching; (4) Purposes for which microteaching is being used; (5) Procedures that are being used in the execution of microteaching.

1. Is microteaching used at your institution in the preparation of industrial arts teachers? Yes _____ No _____
(If your response was "No" please respond to #4 and return the questionnaire.)

2. Is the microteaching provided within your department or outside your department?
 Within the department _____ Outside the department _____
 (If your response was "Within the department" omit #3 and #4 and continue with #5.)

3. If microteaching is provided outside the department, please list the department that provides it.

4. Are there plans to include microteaching in your department within the next year? Yes _____ No _____

5. How long has microteaching been utilized in your teacher training program?
_____ years

6. Do you plan to continue your microteaching program next year?
Yes _____ No _____ If "No" why are you discontinuing it?

7. At what level or levels is microteaching being utilized?
 Undergraduate teacher training _____ Research _____
 Graduate teacher education _____ In-service _____
 Others (Please list) _____

8. Please list the courses required of your majors that utilize microteaching.

<u>Course Title</u>	<u>Hours Credit</u>	<u>Course Level (Fr., So., Jr., Sr., Grad.)</u>
_____	_____	_____
_____	_____	_____
_____	_____	_____

9. Please list the purposes for which microteaching is being used in your teacher training program.

10. During the year approximately how many industrial arts students are involved in microteaching? (Fill in as many blanks as apply.)

Semester System

Fall _____ Spring _____ Summer _____

Quarter System

Fall _____ Winter _____ Spring _____ Summer _____

11. How many total microteaching experiences does your program require of the student? _____ Experiences
12. How many people other than students are directly involved in carrying out the microteaching in your teacher training program? (Please include part-time people.)
 Faculty _____ Graduate Assistants _____ A.V. Technicians _____
 Others _____
13. In the microteaching encounter which of the following methods is practiced most frequently?
 Demonstration _____ Discussion _____ Lecture _____
 Other (Please list) _____
14. How is the model for the microteaching encounter presented to the student teacher?
 Audio taped _____ Video taped _____ Written _____ Live _____
15. In the microteaching encounters do your students complete the teach-critique, reteach-critique cycle?
 Always reteach _____ Sometimes reteach _____ No reteach _____
16. What recording method do you utilize most frequently in your microteaching encounters?
 Audio tape _____ Video tape _____ Written _____
17. Which recording method do you feel is best?
 Audio tape _____ Video tape _____ Written _____
18. Please list the approximate percentage of the following types of micro-class pupils that are used in the encounters.
 College students (peers) _____ High school pupils _____
 Junior high school pupils _____ Others _____
19. How many pupils, peer or real, make up the micro-class?
 _____ pupils

20. Are pupils paid? Yes _____ No _____
 If "Yes" what is the hourly rate? _____
21. What is the average length of the microteaching lesson?
 _____ minutes.
22. As the lesson is being critiqued, who is usually present and commenting on the lesson? Indicate as many as necessary.
 The student _____ College supervisor _____
 Pupils of the micro-class _____ Others _____
23. Please list the major problems related to the initial introduction of microteaching into your teacher training program.

24. Please list any major problems encountered after the initial introduction of microteaching in your teacher training program.

25. What effect has microteaching had on your teacher training program?

No Effect 1 2 3 4 5 Significantly Improved the Program

26. How would you rate the importance of the microteaching phase of your teacher training program? Circle one.

Low 1 2 3 4 5 High

Please list your name and address below to receive the results of this survey.

APPENDIX E

RESPONDENTS' COMMENTS

Comments by the Respondents on the
Cover Letter and Questionnaire

Referring to the questionnaire:

"Neat and brief questionnaire."

"It is my opinion that this questionnaire should have contained a definition of microteaching."

Author's note: The definition was stated in the cover letter.

Referring to the follow-up cover letter:

"You have a nice manner about your communique."

Comments by the Respondents Pertaining to
the Use of "Real" Students

"We no longer use secondary pupils due to the expense of transportation."

When referring to the use of "peer" students: "Would like to change this if it were possible."

No "real" students "Which angers me. No \$."

"We experimented for a year with junior high students."

Used high school students "Only one summer."

"In using junior high students there was too much confusion to warrant the benefit. Have settled on daytime rather than evening sessions and using peer audiences."

APPENDIX F
COLLEGES AND UNIVERSITIES CONTACTED
FOR THIS STUDY

The following is a listing of the colleges and universities contacted for this study.

Alabama

Alabama A. & M. University, Normal
 Auburn University, Auburn
 Tuskegee Institute, Tuskegee
 University of Alabama, University

Arizona

Arizona State University, Tempe
 Northern Arizona University, Flagstaff

Arkansas

State College of Arkansas, Conway
 University of Arkansas, Fayetteville
 University of Arkansas at Monticello, Monticello
 University of Arkansas at Pine Bluff, Pine Bluff

California

California State Polytechnic University, San Luis Obispo
 California State University, Chico
 California State University, Fresno
 California State University, Humboldt, Arcata
 California State University, Long Beach
 California State University, Los Angeles
 California State University, San Diego
 California State University, San Francisco
 California State University, San Jose
 Pacific Union College, Angwin

Colorado

Adams State College, Alamosa
 Colorado State University, Fort Collins
 Southern Colorado State College, Pueblo
 University of Northern Colorado, Greeley
 Western State College, Gunnison

Connecticut

Central Connecticut State College, New Britain

Florida

Florida A. & M. University, Tallahassee
Florida International University, Miami
Florida State University, Tallahassee
The University of West Florida, Pensacola
University of North Florida, Jacksonville
University of Tampa, Tampa

Georgia

Berry College, Mount Berry
Georgia Southern College, Statesboro
Savannah State College, Savannah
University of Georgia, Athens

Hawaii

The Church College of Hawaii, Laie
University of Hawaii, Honolulu

Idaho

University of Idaho, Moscow

Illinois

Chicago State University, Chicago
Eastern Illinois University, Charleston
Illinois State University, Normal
Northern Illinois University, DeKalb
University of Illinois, Urbana
Western Illinois University, Macomb

Indiana

Ball State University, Muncie
Indiana State University, Terre Haute
Purdue University, West Lafayette

Iowa

Iowa State University, Ames
University of Northern Iowa, Cedar Falls
Westmar College, Le Mars
William Penn College, Oskaloosa

Kansas

Bethel College, North Newton
 Fort Hays Kansas State College, Hays
 Friends University, Wichita
 Kansas State College of Pittsburg, Pittsburg
 Kansas State Teachers College, Emporia
 McPherson College, McPherson
 Wichita State University, Wichita

Kentucky

Berea College, Berea
 Eastern Kentucky University, Richmond
 Kentucky State University, Frankfort
 Morehead State University, Morehead
 Murray State University, Murray
 Western Kentucky University, Bowling Green

Louisiana

Grambling College, Grambling
 Louisiana State University, Baton Rouge
 Northwestern State University, Natchitoches
 Southeastern Louisiana University, Hammond
 Southern University and A. & M. College, Baton Rouge
 University of Southwestern Louisiana, Lafayette

Maine

University of Maine of Portland-Gorham, Gorham

Maryland

University of Maryland, College Park
 University of Maryland-Eastern Shore, Princess Anne

Massachusetts

Fitchburg State College, Fitchburg

Michigan

Andrews University, Berrien Springs
 Central Michigan University, Mt. Pleasant
 Eastern Michigan University, Ypsilanti
 Michigan State University, East Lansing

Michigan, continued

Northern Michigan University, Marquette
Wayne State University, Detroit
Western Michigan University, Kalamazoo

Minnesota

Bemidji State College, Bemidji
Mankato State College, Mankato
Moorhead State College, Moorhead
St. Cloud State College, St. Cloud
University of Minnesota, Minneapolis
University of Minnesota, Duluth, Duluth
Winona State College, Winona

Mississippi

Alcorn Agricultural and Mechanical College, Lorman
Jackson State College, Jackson
Mississippi State University, State College
Mississippi Valley State College, Itta Bena
University of Southern Mississippi, Hattiesburg

Missouri

Central Missouri State University, Warrensburg
Northeast Missouri State University, Kirksville
Northwest Missouri State University, Maryville
Southeast Missouri State University, Cape Girardeau
Southwest Missouri State University, Springfield
University of Missouri, Columbia

Montana

Montana State University, Bozeman
Northern Montana College, Harve
Western Montana College, Dillon

Nebraska

Chadron State College, Chadron
Kearney State College, Kearney
Peru State College, Peru
University of Nebraska, Lincoln
University of Nebraska at Omaha, Omaha
Wayne State College, Wayne

New Hampshire

Keene State College, Keene

New Jersey

Glassboro State College, Glassboro
Montclair State College, Upper Montclair
Newark State College, Union
Trenton State College, Trenton

New Mexico

Eastern New Mexico University, Portales
New Mexico Highlands University, Las Vegas
University of New Mexico, Albuquerque

New York

New York University Washington Square, New York
State University College at Buffalo, Buffalo
State University College at Oswego, Oswego
The City University of New York, New York

North Carolina

Appalachian State University, Boone
East Carolina University, Greenville
Elizabeth City State University, Elizabeth City
North Carolina Agricultural & Technical State University,
Greensboro
North Carolina State University at Raleigh, Raleigh
Western Carolina University, Cullowhee

North Dakota

University of North Dakota, Grand Fork
Valley City State College, Valley City

Ohio

Bowling Green State University, Bowling Green
Central State University, Wilberforce
Kent State University, Kent
Miami University, Oxford
Ohio Northern University, Ada
Ohio University, Athens
The Ohio State University, Columbus
Wilmington College, Wilmington

Oklahoma

Central State University, Edmond
East Central State College, Ada
Langston University, Langston
Northeastern State College, Tahlequah
Northwestern State College, Alva
Oklahoma State University, Stillwater
Panhandle State College, Goodwell
Southeastern State College, Durant
Southwestern State College, Weatherford

Oregon

Oregon State University, Corvallis

Pennsylvania

California State College, California
Cheyney State College, Cheyney
Millersville State College, Millersville
The Pennsylvania State University, University Park
Temple University, Philadelphia

Puerto Rico

University of Puerto Rico, San Juan

Rhode Island

Rhode Island College, Providence

South Carolina

Clemson University, Clemson
South Carolina State College, Orangeburg

South Dakota

Black Hills State College, Spearfish
Dakota State College, Madison
Northern State College, Aberdeen
South Dakota State University, Brookings
The University of South Dakota at Springfield, Springfield

Tennessee

Austin Peay State University, Clarksville
 East Tennessee State University, Johnson City
 Memphis State University, Memphis
 Middle Tennessee State University, Murfreesboro
 Southern Missionary College, Collegedale
 Tennessee State University, Nashville
 Tennessee Technological University, Cookeville
 The University of Tennessee, Knoxville

Texas

Abilene Christian College, Abilene
 East Texas State University, Commerce
 North Texas State University, Denton
 Prairie View Agricultural & Mechanical College, Prairie View
 Sam Houston State University, Huntsville
 Southwest Texas State University, San Marcos
 Southwestern Union College, Keene
 Sul Ross State University, Alpine
 Tarleton State College, Stephenville
 Texas A. & M. University, College Station
 Texas A. & I. University, Kingsville
 Texas Southern University, Houston
 University of Houston, Houston
 West Texas State University, Canyon

Utah

Brigham Young University, Provo
 Southern Utah State College, Cedar City
 Utah State University, Logan

Vermont

University of Vermont, Burlington

Virginia

Hampton Institute, Hampton
 Norfolk State College, Norfolk
 Old Dominion University, Norfolk
 Virginia Polytechnic Institute and State University, Blacksburg
 Virginia State College, Petersburg

Washington

Central Washington State College, Ellensburg
Eastern Washington State College, Cheney
University of Washington, Seattle
Walla Walla College, College Place
Washington State University, Pullman
Western Washington State College, Bellingham

West Virginia

Fairmont State College, Fairmont
West Virginia Institute of Technology, Montgomery
West Virginia State College, Institute
West Virginia University, Morgantown

Wisconsin

University of Wisconsin-Platteville, Platteville
University of Wisconsin-Stout, Menomonie

Wyoming

University of Wyoming, Laramie

APPENDIX G

FOLLOW-UP COVER LETTER TO QUESTIONNAIRE

**OKLAHOMA STATE UNIVERSITY • STILLWATER**

School of Occupational and Adult Education
Classroom Building 406
(405) 372-6211, Ext. 6287

74074

February 14, 1974

Dear

During the first week in January, I mailed you a letter and questionnaire relating to the use of microteaching in the preparation of industrial arts teachers. Microteaching is a scaled-down teaching encounter applying teaching skills to brief lessons taught to a small group of students. The survey should result in an appraisal of the utilization of microteaching in industrial arts teacher education.

I have not received your response and your contribution will be greatly appreciated. If you are not using microteaching please respond to #1 and #4 on the questionnaire and return it. There is a good possibility that your response and this letter crossed in the mail. If you have mailed the questionnaire please dispose of this correspondence. Thank you for your cooperation in this matter.

Sincerely,

Don Cattle
Graduate Student
Oklahoma State University

VITA

Donnell Edgar Cattle

Candidate for the Degree of

Doctor of Education

Thesis: MICROTEACHING TECHNIQUES UTILIZED BY INDUSTRIAL ARTS TEACHER EDUCATION PROGRAMS

Major Field: Vocational-Technical and Career Education

Biographical:

Personal Data: Born at Hannibal, Missouri, June 3, 1935, the son of Mr. and Mrs. Edgar H. Cattle.

Education: Graduated from Hannibal High School, Hannibal, Missouri, in May, 1953; attended Hannibal-LaGrange Junior College, 1953-54; received Bachelor of Science degree in Education from Missouri University in 1957; attended Illinois University in 1960; attended Missouri University, summer 1961; attended Texas Tech University, 1965; received the Master of Education degree in Industrial Arts from Colorado State University in 1968; attended Illinois State University, summer, 1969; attended Utah State University, summers, 1970-71; completed requirements for the Doctor of Education degree at Oklahoma State University in July, 1974.

Professional Experience: Industrial arts instructor, Roosevelt Roads High School, Ceiba, Puerto Rico, 1961-63; Industrial arts instructor, Matthews Junior High School, Lubbock, Texas, 1963-65; Industrial arts instructor, Monterey High School, Lubbock, Texas, 1965-67; Assistant professor of industrial arts, Peru State College, Peru, Nebraska, 1967-72.

Professional Organizations: Epsilon Pi Tau, American Vocational Association, and American Council on Industrial Arts Teacher Education.