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To the Graduate Council:

I am submitting herewith a thesis written by Richard H. Lambert, entitled "Educational Practices and Teaching Techniques Related to Disadvantaged Vocational Students." I recommend that it be accepted in partial fulfillment of the requirements for the degree of Master of Science, with a major in Agriculture Education.

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EDUCATIONAL PRACTICES AND TEACHING TECHNIQUES RELATED TO DISADVANTAGED VOCATIONAL STUDENTS

A Thesis

Presented to

the Graduate Council of

The University of Tennessee

In Partial Fulfillment

of the Requirements for the Degree

Master of Science

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by

Richard H. Lambert

August 1971

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ABSTRACT

The purpose of the study was to determine what educational practices and teaching techniques would be identified as significantly different when comparisons were made between teachers of programs for disadvantaged students and teachers of programs for regular students.

Educational practices and teaching techniques selected for inclusion within the survey instrument were considered as representative of the teaching methods employed by secondary vocational education teachers. The sample for the study included teachers of programs for disadvantaged students and teachers of programs for regular students. Vocational service areas represented in the study were vocational agriculture, trades and industrial education, vocational office education, and vocational improvement programs. The responses of teachers were tested by analysis of variance and, when appropriate, Duncan Multiple Range Test according to classification of programs (disadvantaged or regular), vocational service areas, years of experience in teaching disadvantaged students, and professional training in teaching disadvantaged students.

Upon analysis of teacher responses it was found that within each of the tests conducted significant differences occurred. Specific findings were that teachers of programs for disadvantaged students considered the following educational practices and teaching techniques less important than teachers of regular programs: work with students in out-of-school activities; use the school norm in assigning grades; require good discipline in the classroom; use role playing as a teaching

technique; ask many factual questions; make use of the chalkboard, overhead projector, and slide film projector; review tests with students after grading; use models and representations in the instruction of skills; use students' own experiences in class discussions; and require students to maintain a notebook. Teachers of programs for disadvantaged students considered involving students in setting the rules and regulations for the class more important than teachers of regular students. Teachers who had taken courses related to teaching disadvantaged students rated the following practices and techniques significantly higher than teachers who had not taken these courses: counsel with students; plan a course of study in consultation with other teachers; develop teaching materials supplemental to texts or other references; select remedial materials and teaching techniques; correlate mathematics, science, English, etc., with vocational subjects; and make use of visual materials.

General conclusions made were: (1) diversity of vocational service areas were such that specific recommendations of educational practices and teaching techniques relative to teaching disadvantaged students should be adapted to specific service areas rather than to programs for disadvantaged students in general, (2) teachers of programs for disadvantaged students were more likely to change their attitudes toward the importance of specific practices and techniques after having taught these students for one year, and (3) the effect of courses related to teaching disadvantaged students resulted in a greater difference between the responses of teachers than the effect of conferences and seminars related to teaching disadvantaged students.

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CHAPTER I

INTRODUCTION

Prior to the passage of the Vocational Education Act of 1963, the major premise of vocational education was to prepare youth in school for an occupation and to upgrade the vocational competencies of persons in the labor force (27, p. 49). This concept was changed and exemplified by the recommendations made by the President's Panel of Consultants on Vocational Education of 1961-62--that new programs in vocational education should emphasize service to the individual needs of people (11, p. 50). The Eighty-Eighth Congress, acting on the report of the Panel of Consultants by enacting the Vocational Education Act of 1963, provided a major stimulus to the development of vocational education. Among "new" concepts which were proposed, one involved the directive to vocational educators to provide programs oriented to the needs of people instead of being directed at rigid categories in a limited number of occupations (1, p. 5).

The concept of vocational education's responsibility to individual educational needs was further limited to identify the role of vocational education for students having academic, socio-economic or other handicaps and made federal funds available for programs for such students (1, p. 5). Specifically, the role of vocational education was expanded to provide instructional assistance for persons possessing characteristics which retarded their ability to participate effectively in regular vocational programs. The Act of 1963 required each state to use no less than 10 percent of its funds for design and implementation of vocational programs to

meet the needs of youth who were enrolled in vocational education programs and could be identified as having "special needs" or as being "disadvantaged" (35, sec. 4).

Based on the recommendations of the Advisory Council on Vocational Education, which was provided for by the Act of 1963, the 1968 Vocational Education Amendments expanded the provision related to programs for disadvantaged persons. This legislation required each state to use no less than 15 percent of the basic federal allotment for continuation and expansion of these programs (3, sec. 102).

Relative to disadvantaged persons, the federal legislation previously cited has intended that programs for this population be integrated into the existing vocational education framework rather than special programs and classes outside the realm of vocational education. The purpose has been to prevent tracking students into lower levels of vocational education and to prevent any "stigma" being attached to students because of their special needs (1, p. 5). As a result, the center of attention has been directed toward the existing vocational education program within the secondary school. Implementation of educational programs assisting the disadvantaged student within this framework has resulted in curriculum and instructional designs that have attempted to relate vocational instruction to the students' achievement level and prepare such students to function at a "higher" achievement level. This direction of attention on the individual and the circumstances surrounding his learning difficulties has formally presented an additional responsibility to the vocational educator.

The State of Tennessee Department of Education is presently

operating 178 secondary vocational education programs designated as being specifically for students who have been identified as disadvantaged. These programs have been located within schools in areas of the state where there exists a high concentration of youth unemployment and school dropouts and where the student population exhibits characteristics which relate to a disadvantaged condition (32, Part II, p. 49).

In Tennessee three types of vocational education programs for disadvantaged students exist on the secondary school level. The first type, the redirected program, includes programs in vocational agriculture, vocational trades and industries, vocational home economics, and vocational office occupations.

The second type of program, the vocational improvement program, differs in that student participants are enrolled in at least one other vocational education program within the school. Students enrolled in these programs which are designed to support and complement the existing vocational programs are individually identified as being disadvantaged.

The third type of program, the vocational advancement program, exists in secondary schools where there is a high incidence of vocational students who possess some physical or mental handicap.

I. STATEMENT OF THE PROBLEM

What educational practices and teaching techniques are rated as being of "more importance" in teaching secondary vocational students when comparisons are made among the following factors: (1) classification of teachers, (2) number of years of teaching experience of teachers, and (3) amount of professional training of teachers in teaching the disadvantaged.

II. SIGNIFICANCE OF THE PROBLEM

Enactment and implementation of the Vocational Education Act of 1963, and later the 1968 Vocational Education Amendments have resulted in a new area of activities within the framework of vocational education. The concept of responding to the individual needs of persons and specifically the needs of disadvantaged persons has charged vocational educators with a new and "ill defined" responsibility.

As funds under this category have provided for research and experimentation, as well as implementation of programs, existing literature on the subject reflects the growing interest and research activities in this area. Primarily, the related literature has dealt with the identification of such persons, their unique life styles, and the personal characteristics and attitudes of teachers which are advantageous or necessary in order to successfully teach this group of students. Gordon stated:

> Although the literature on the disadvantaged is extensive, we are not yet able to draw from that literature definitive guidelines for educational planning. . . .we are able to identify characteristics frequently encountered but are shy about interpreting these characteristics and their implications for educational intervention (15, p. 96).

Support is lent to this concept by Todd, who noted:

> Much emphasis has been given toward identifying the disadvantaged in our society. This is a necessary activity, but extra effort should be expended toward programs and methods for these individuals. It is futile to merely identify persons needing special educational assistance without supplying the necessary media through which the help can be given (34, p. 17).

In addition, Foley stated:

> For over a decade we have been bombarded with psychological, sociological, and cultural-anthropological analysis

> of the "why" of his behavior. But, as in the case of the research on teaching, few recommendations in the form of specific practices to alter the attitudes, values and beliefs of these children have come forth (14, p. 94).

In discussing which classroom methodology to employ when teaching disadvantaged students, Passo stated, "Relative little research has sought to pin-point methods that reach culturally disadvantaged youth" (24, p. 349). Taba and Elkins also stated, "It is recognized rather generally that conventional instruction does not reach adolescents with cultural and educational deficits. . ." (31, p. 65).

In Carpenter and Rogers' review of research on teaching methods in agricultural education, the importance of the teacher's methodology in all vocational education classes was supported by the statement,

> Some teachers find relative more success with certain methods than others. This points up the need to consider subject matter, students enrolled and the teacher involved in selecting a method or methods to use in teaching a course (7, p. 19).

It was the purpose of this study to identify and assess the importance of selected educational practices and teaching techniques, as identified by vocational teachers, which may be used successfully when teaching disadvantaged students whether these students be enrolled in vocational education classes for disadvantaged students or regular vocational education classes. As teachers tend to use those instructional methods which they can employ successfully, an assessment of the importance of selected practices and techniques would identify differences in the practices and techniques which are being used by teachers.

The results of such a study would provide data to base teacher education and in-service programs to orient vocational education

teachers to the practices and techniques which have been identified as being used more successfully by vocational teachers of disadvantaged students. Projections incorporated into the Tennessee State Plan for Vocational Education indicate the presence of plans for additional secondary vocational programs for disadvantaged students and, consequently, increases the number of student enrollees (32, Part II, p. 38). These projections imply that additional teachers will be involved in teaching within these programs, thus requiring additional teacher education and in-service activities related to teaching disadvantaged students.

III. ASSUMPTIONS

The following assumptions were made:

1. In nearly all secondary vocational education classes, there are students who would be classified as being disadvantaged.

2. The classes for disadvantaged students will have a greater number of disadvantaged students than classes for regular students.

3. The teachers of classes for disadvantaged students are more aware of the presence of disadvantaged students than teachers of classes for regular students.

4. Teachers will rate the items listed in the survey instrument according to their experiences in teaching.

5. Teachers will use those educational practices and teaching techniques which they can employ successfully and to their satisfaction.

6. Teachers included in the study are representative of vocational teachers in their respective service areas.

7. The students of teachers included in the study are

representative of all secondary vocational students throughout the geographic limitations of the study.

8. Teachers selected for inclusion into the study will cooperate by completing and returning the survey form.

9. Teachers will give "higher ratings" to those practices and techniques which they can employ successfully.

10. Teachers will respond to the survey form as based on their experiences and association with secondary (high school) students.

IV. HYPOTHESIS

H_1: There is a significant difference between ratings of importance given to educational practices and teaching techniques by teachers according to their classification as teaching in programs designated as being for disadvantaged students or in regular programs, the vocational service area in which teachers are employed, the number of years of experience in teaching disadvantaged students, and the professional training received related to teaching disadvantaged students.

Sub-Hypothesis 1. There is a significant difference between ratings of importance given to educational practices by teachers of programs for disadvantaged students and teachers of programs for regular students.

Sub-Hypothesis 2. There is a significant difference between ratings of importance given to teaching techniques by teachers of programs for disadvantaged students and teachers of programs for regular students.

Sub-Hypothesis 3. There is a significant difference between ratings of importance of educational practices and teaching techniques according to the vocational service area in which teachers are employed.

Sub-Hypothesis 4. There is a significant difference between ratings of importance of educational practices and teaching techniques according to the number of years of experience in teaching in programs for disadvantaged students.

Sub-Hypothesis 5. There is a significant difference between ratings of importance of educational practices and teaching techniques according to the professional training of teachers related to teaching disadvantaged students.

Sub-Hypothesis 6. There is a significant difference between ratings of importance of educational practices and teaching techniques according to the conferences and seminars, which were attended by teachers, related to teaching disadvantaged students.

The null hypothesis or hypothesis of no difference was used in testing the hypothesis and sub-hypotheses as stated. Multivariate analysis of variance was used to test the hypotheses at the $\leq$ .05 level of significance.

V. LIMITATIONS

The generalizations which can be made from this study are limited by the factors listed below. These factors must be taken into account in interpreting the results of the study.

1. The sample for the study was comprised of 120 secondary vocational education teachers in Tennessee. The sample was equally

divided between teachers of vocational programs designated for disadvantaged students and teachers of regular vocational education programs.

2. The vocational service areas represented by the teachers of programs for disadvantaged students were vocational agriculture, trades and industrial education, vocational office education and vocational improvement programs.

3. The vocational service areas represented by teachers of regular vocational education programs were vocational agriculture, trades and industrial education and vocational office education.

4. The study included teachers of secondary (high school) vocational education programs in which students would be classified in either the 9th, 10th, 11th or 12th grade level and representative of an age group of 14 to 18.

5. An obvious limitation of the study was the educational practices and teaching techniques selected for inclusion within the survey form. These practices and techniques are to be considered representative rather than conclusive of the methods employed by secondary vocational education teachers.

6. Additionally, the study was limited by the attitudes and professional activities of the teachers selected for the study. These teachers' attitudes toward teaching vocational students, either disadvantaged or regular students, and their professional activities in the selection and participation in courses, conferences, and seminars would affect their response to the practices and techniques listed in the survey instrument.

VI. DEFINITION OF TERMS

The following list of terms is an attempt to define the terminology used in this study.

Disadvantaged Persons: Individuals who possess one or more of the following characteristics:

Academically Disadvantaged: Individuals whose school records indicate frequent absences without apparent cause, consistent failure of school subjects, and which include test scores indicating difficulties in reading, writing, and speaking (32, Part I, p. 30).

Culturally Disadvantaged: Individuals whose chances of achieving their potentials are limited because of such factors as minority group status, membership in the lower class stratum of society, and isolation brought about by poverty and meagerness of intellectual resources in the home and community (32, Part I, p. 30).

Handicapped Persons: Individuals who are mentally retarded, hard of hearing, speech impaired, visually handicapped, seriously emotionally disturbed, crippled, or whose health is otherwise impaired (32, Part I, p. 30).

Socioeconomically Disadvantaged: Individuals whose social and economic advancement has been impaired by such factors as low family income (usually less than $3000.00 annually), family dependence upon social assistance agencies for support, and/or the principal wage earner being under-employed or unemployed (32, Part I, p. 30).

Educational Practice: An activity employed by a teacher in the educational process which supports teaching by contributing to pedagogical principles and objectives. These practices are identified from

teaching techniques by involving activities other than specific skills or methods used in the process of teaching. Examples of educational practices are: making visits to students' homes, assigning homework, counseling students, and utilizing student assistance in developing a course of study.

Redirected Vocational Program: Existing programs in vocational agriculture, vocational trade and industrial education, vocational office education and vocational home economics which have a high percentage of disadvantaged enrollees. These programs attempt to redirect the curriculum and instruction so that emphasis is placed on helping the disadvantaged student to succeed in the program.

Secondary Vocational Education Program: An instructional program or class for students who are enrolled in the secondary school and for the purpose of education and training which is designed to prepare persons to enter into gainful employment in any recognized occupation.

Teaching Technique: The employment of a specific educational skill for the purpose of directing the learning process. These skills are used by the teacher in the process of teaching pupils. Examples of teaching techniques are: presenting demonstrations, using small group or individualized instruction and using role playing.

Vocational Advancement Program (VAP): A modified vocational education program designed to assist secondary vocational students who cannot succeed in a regular vocational education program by reason of their handicapped condition such as: mental retardation, serious emotional disturbances, speech impairment, hearing loss, visual impairment, crippled conditions, or whose health is otherwise impaired.

Vocational Improvement Program (VIP): A vocational program designed to assist students who are currently enrolled in regular vocational programs and are having severe difficulties with the traditional academic curriculum. Enrollees are given individualized instruction at their own achievement level in academic areas which are related to the vocational preference of the student. Instruction is directed toward communication and mathematic skills. This program is not related to a specific service area but supports all vocational service areas.

Vocational Service Area: A specific instructional area included within vocational education which prepares persons for entry into a group of related occupations. Examples are vocational agriculture, vocational trade and industrial education, and vocational office education.

VII. METHODS OF PROCEDURE

The problem was confronted by comparing the responses of vocational teachers to educational practices and teaching techniques used when teaching secondary vocational students. The procedures followed were:

1. A systematic review of the existing literature was completed for the purpose of identifying educational practices and teaching techniques generally recommended in teaching classes for disadvantaged students.

2. Items chosen for inclusion in the survey instrument were selected to reflect a general philosophy of vocational education and to represent the educational practices and teaching techniques employed by secondary vocational teachers. Some concepts were divided and listed as

two or more items for the purpose of clarity or to present opposing viewpoints clearly and precisely.

3. The source of data for this study was the responses of 120 secondary vocational education teachers. The sample was evenly divided between teachers of programs for disadvantaged students and teachers of regular vocational programs. Using a table of random numbers, random sampling was employed in the selection of each of the samples from the populations (11, pp. 328-329). The lists of teachers included in the survey were obtained from the State of Tennessee, Department of Education (10, pp. 11-113).

4. Teacher responses consisted of the assignment of ratings to 64 items on a Likert-type scale. For each item a rating of one (1) indicated no importance; two (2) slight importance; three (3) moderate importance; four (4) considerable importance; and five (5) major importance.

5. A field test was conducted for the purpose of evaluating the content of the survey instrument. Twenty secondary vocational teachers, evenly divided between teachers of programs for disadvantaged students and teachers of programs for regular students, were asked to complete the survey instrument and make suggestions relative to the appropriateness of the content of the instrument. It was found that misinterpretation resulted from the wording of various items. The survey instrument was then revised, incorporating changes and making deletions from the previous instrument.

6. The revised survey instrument was mailed to the 120 teachers selected for the study. An introductory letter and cover letter was

enclosed with the survey instrument. A follow-up letter was mailed to non-respondents ten days after the first mailing. The introductory letter, cover letter, survey instrument, and follow-up letter are found in Appendixes A, B, C and D, respectively.

7. The statistical procedure involved the application of analysis of variance to test the hypothesis as divided into six sub-hypotheses. In each of the sub-hypotheses it was necessary to make comparisons of teachers in relation to each of the 64 variables.

To test sub-hypotheses 1 and 2, comparisons were made of the responses of teachers of programs for disadvantaged students and teachers of regular programs. Sub-hypothesis 3 required that teachers be divided into their respective vocational service areas and tested. Testing sub-hypothesis 4 required that teachers of programs for disadvantaged students be divided into groups according to the number of years teaching experience in these programs.

Two-way analysis of variance was used in testing sub-hypotheses 5 and 6. Sub-hypothesis 5 involved testing each group of teachers according to whether courses related to teaching disadvantaged students had or had not been taken. Sub-hypothesis 6 involved testing each group of teachers according to whether conferences and seminars related to teaching disadvantaged students had or had not been attended.

The Duncan's Multiple Range Test was used to locate differences, as identified by the analysis of variance, related to sub-hypotheses 3, 4, 5 and 6.

The results of these statistical procedures indicated whether or not the null hypothesis should be accepted or rejected at the .05 level of significance.

VIII. ORGANIZATION OF THE STUDY

This study consists of four chapters, bibliography and appendixes.

Chapter I presents an introduction to the problem, the problem, the problem's significance, the assumptions, the hypothesis, definition of terms, the limitations, and methods of procedure.

The review of related literature is presented in Chapter II. Literature relative to methods, techniques and practices for teaching disadvantaged students is shown.

An analysis of the results of the study are shown in Chapter III.

Chapter IV includes a discussion of the conclusions and recommendations.

CHAPTER II

RELATED LITERATURE

During recent years economic, political and social factors have combined to bring to public attention the conditions of underdevelopment among certain groups of people in our society (16, p. 1). As public education has been conceptualized as an instrument of society the public schools have been burdened with the blame for this situation and given the responsibility for alleviating the problem (16, p. 1). This responsibility has been perpetuated and supported by the federal government as evidenced by the nature of recent legislation concerning public education and "disadvantaged persons". This support has been intended to reach all areas of public education but specific attention has been directed toward vocational education.

Federal legislation related to vocational education has outlined specific directives in the interest of individuals who require special assistance in participating effectively in regular education programs because of various conditions of academic, economic or social deprivation (3, Sec. 102) (35, Sec. 4). As this new direction has placed emphasis on the increased efficiency in the disadvantaged student's ability to learn, the responsibility of efficiency in teaching has become of prime concern to the vocational educator (15, p. 102).

In attempts to identify the successful teacher for the disadvantaged learner the literature suggests a variety of characteristics which have been found to be advantageous in teaching this group. A report by

the National Committee on Employment of Youth characterized the teacher of the disadvantaged as one who should have competence in his subject area, familiarity with modern teaching methods and the ability to communicate with students but added that the ability to relate to and understand the disadvantaged is even more significant (1, p. 11).

De Young identified the teacher of the disadvantaged in the following manner:

> Schools need teachers who are capable of respecting and understanding socially and culturally handicapped children, teachers who can sense whatever ability and value the children have and who can nourish it, teachers with a strong dedication to the underprivileged (8, p. 279).

The Gordon and Wilkerson study found that teachers who were identified as being successful in teaching the disadvantaged were those who had developed sensitivity to the special needs, the variety of learning patterns and the learning strengths and weaknesses of their students (16, p. 179). Also this study found that these teachers employed a wide variety of instructional techniques and methodologies (16, p. 179).

In a more recent publication, Gordon questioned the concept which was noted in the Gordon and Wilkerson study that there is a need for teachers to understand and appreciate the conditions which relate to the deprivation of their students (15, p. 103). Gordon stated:

> The evidence is not convincing that efficient teaching comes necessarily from understanding the life conditions of the persons being taught. Successful teaching is more likely to develop from successful work with these students (15, p. 103).

In addition Gordon suggested that these teachers, in order to be successful, must be masters of the content which is to be taught and have the ability to move freely within that content in order to present

it in a variety of ways and relate it to a variety of problems and circumstances to accommodate the individual learning styles of the students (15, p. 103).

While not recommending specific practices, Gordon noted the need for teachers being highly artistic and eclectic in working with the disadvantaged (15, p. 104). He related that some teaching methods are found to work with some students while other methods are not as successful (15, p. 104). Watkins supported this concept by stating:

> There has been an over-emphasis on teaching methodology, with the implication that a given method is applicable to any and all learning situations. The function of the teacher is to stimulate, direct and aid the learning process and there is not one method for the application of any given learning to other human beings (36, p. 237).

As writers and researchers have suggested that there exists a difference in the methodology which can be used more successfully with disadvantaged students, it can be surmised that this difference is a result of characteristics of these students which differ significantly from regular students. Gowan and Demo have offered a general description of this group of students by stating, "They are from the lower socio-economic groups in the community and they are notably deficient in cultural and academic strengths" (17, p. 44).

Webster offered the following as characteristics which tend to create a negative effect on the learning abilities of disadvantaged students (37, p. 477). These were identified as: (1) concern for the here and now, (2) concrete and functional as versus the abstract, (3) difficulties in seeing relationships, and (4) active learning versus contemplative learning (37, p. 477).

Of significant use to the educator are the characteristics listed by Gordon which were identified as being important when developing educational programs specifically for disadvantaged persons (15, p. 99). He identified this group as:

> 1. One which has a history of academic and intellectual functional levels which are lower than those observed in more privileged segments of the general population.
>
> 2. One which shows a higher incidence of learning disabilities than the general population.
>
> 3. One which may be more significantly influenced by variations in individual stylistic and temperamental aspects of learning behavior.
>
> 4. One in which hierarchy of behavior reinforcers may differ significantly from those educators are accustomed to using.
>
> 5. One for which most critical levers for upgrading educational achievement may be outside the domain of formal education (15, p. 99).

It has generally been accepted that one factor which impairs the academic success of the disadvantaged student is a lack of self motivation. Taba and Elkins reported that research on motivational patterns shows futility in emphasizing external rewards and related that a sense of "belonging" in school life enhances learning and influences these students to remain in school (31, p. 16). In addition to the importance of a feeling of belonging, the relevancy of the course content and the methods used to present this content was presented by Taba and Elkins as being essential to motivation on the part of the disadvantaged student (31, p. 66).

The previously cited literature has indicated that educational programs for disadvantaged youth, in order to be successful, require

certain criteria which differ from regular educational programs. The personal characteristics and pedagogical competencies of the teacher have been cited as being important factors in teaching these students. Additionally, the literature has shown that the characteristics of the students require that these programs be unique in comparison with traditional education programs.

Relative to the identification of methodology which can be employed when teaching disadvantaged students, Knapp reported that when teachers who were judged by fellow teachers as being successful in teaching the disadvantaged were asked to identify their successful teaching practices, the following list was formulated:

1. Using various forms of grouping.

2. Setting up special courses in "basic reading" and using materials on various reading levels.

3. Going the "second mile" in patience and continued perseverance.

4. Involving class groups in setting up rules and regulations and then insisting that they be followed.

5. Commendation.

6. Being sensitive to the humor in classroom situations.

7. Being flexible with teaching procedures.

8. Acceptance of students.

9. Creating positive images by inviting successful people from the same race or ethnic group to visit the class.

10. Getting to know the parents or guardians of students.

11. Being acquainted with a wide range of relevant subject matter (19, p. 263).

Knapp also reported that this group of teachers responded that they learned more from their experiences and from other teachers than through in-service programs and college courses (19, p. 263).

In addition to the methods presented by Knapp, the Taba and Elkins text added that teachers of disadvantaged students should:

1. Ask questions which permit a variety of levels of response.

2. Use techniques which involve individual and small group instruction, including the use of differentiated materials.

3. Avoid the use of abstract illustrations.

4. Use teaching technological aids, i.e. media, machines, etc.

5. Help students to teach other students.

6. Produce their own teaching aids (31, Chap. 13).

In reviewing the practices and techniques related specifically to teaching disadvantaged vocational students, Phipps supported previous references in the practices of knowing and working with the parents of students and using students to teach other students (25, p. 130). Phipps added that vocational teachers should:

1. Know and understand the language of the disadvantaged.

2. Use problem solving and role playing techniques.

3. Use para-professional personnel.

4. Teach for employment in service area occupations rather than for production occupations.

5. Integrate vocational education with general education.

6. Be able to diagnose learning difficulties and plan educational experiences accordingly.

7. Know how to motivate learners by promoting self competition (25, p. 131).

Todd noted that many of the methods presently being used in vocational education are well adapted to the learning styles of the disadvantaged student (33, p. 1). He cited the following as examples of these methods and techniques:

1. Problem solving techniques.
2. Teaching of manipulative skills.
3. Small group and individualized study.
4. Use of demonstrations and field trips.
5. Supervised occupational experience programs.
6. Relating instruction to individual needs and abilities (33, p. 2).

The use of para-professional personnel and team teaching are methods reported by the Gordon and Wilkerson study as practices related more to the effective use of personnel rather than effective methods of handling disadvantaged students (16, p. 169). One exception held was that these practices may be considered advantageous when they lower the pupil-teacher ratio, thus releasing teachers to work more closely with individual students (16, p. 169). One source of para-professional personnel recommended as particularly advantageous to disadvantaged students was recruitment of these people from the ranks of the disadvantaged (1, p. 13).

Intra-class grouping is a practice generally supported as being effective with disadvantaged students. Implementation of this practice, taking the forms of individualized instruction, small group instruction

and role playing was supported by Gordon (13, p. 104), Taba and Elkins (31, p. 278) and Phipps (25, p. 131). In addition, Hutson noted that for individualized and small group instruction to be effective individual differences must be provided for and be reflected through differentiated assignments, methodology, materials and evaluation (18, p. 236).

The use of role playing techniques, suggested by Phipps, are generally supported as techniques which can be used effectively with disadvantaged students (25, p. 131). Requiring a permissive classroom atmosphere, role playing usually focuses on real life situations which attract the attention of students and provide concrete illustrations (31, p. 84).

In discussing program development for disadvantaged students in agriculture education, Dawson offered an explanation of the following instructional methods:

> 1. Individualized Instruction. Use this method to accomplish the performance objectives while bridging the gap between classroom instruction and the initial job.
>
> 2. Multiple-Media Approach. A variety of visual aids usually arouse interest, especially if they represent real life situations and are adapted to the unit.
>
> 3. The System Approach. The students are required to master one performance objective before moving on to the next objective. . . .
>
> 4. The Four-Step Method. The teacher (1) motivates the students, (2) demonstrates the skills, (3) lets the students practice, and (4) checks to determine the degree of proficiency attained. This method considers the strengths and weaknesses of the students and guides them through the procedure at a suitable pace. . . .
>
> 5. The Whole Method. This method allows the instructor to use a quick run-through technique giving the students an idea of how each part fits together into the whole.

6. The Part Method. The instructor takes the whole method and divides it into parts, with each part being taught separately and in steps. The system approach should be used with the part method (9, p. 243).

In addition, Dawson noted that the use of positive reinforcement, placement of emphasis on the concrete, and provisions for individual differences were important techniques in the application of the methods of instruction previously listed (9, p. 243).

While recommending a correlated or integrated approach to teaching the disadvantaged, Todd suggested that as a part of lesson planning, teachers should identify mathematical problems, list vocabulary and spelling words, and identify discussion and theme subjects which would contribute to other disciplines where there may be less interest and motivation on the part of the student (34, p. 18).

In determining instructional strategies to use when teaching disadvantaged students, Elkins recommended the extensive use of diagnosis of the learning abilities of the students in determining the curriculum and instructional procedures (12, p. 169). The non-verbal characteristics and short attention span of the disadvantaged student have made it necessary that instructional materials be divided into concepts which could be presented in small, short lessons (12, p. 176).

Presentation of instructional materials by use of audio-visual aids was recommended by many writers. This method of presentation was accredited with creating interest in the instructional material which results in a greater speed in learning and provides a concrete approach to otherwise abstract materials (23, p. 41).

Recognizing the communication inabilities of disadvantaged students, Barge suggested the extensive use of non-verbal devices such as films, filmstrips, charts, models, specimen, slides and pictures (5, p. 140). Barge was supported by a study conducted by the Educational Media Council which recommended the use of these materials and equipment (2). This study identified the following guidelines which should be followed when selecting or developing instructional materials:

1. Materials should reflect more than one culture or race.

2. Content should be realistic and identifiable to disadvantaged children.

3. Content should deal with the emotional reality of the child as well as with his physical reality.

4. Materials should require greater participation by pupils and should elicit more responses.

5. More materials could be developed with the help of the disadvantaged students rather than having someone else develop these materials for them.

6. Materials which are problem centered are desirable (2, p. 10).

Carpenter and Rodgers reported that studies related to the use of programmed learning packages when used in vocational agriculture programs were of significant benefit to students who had low reading abilities (7, p. 18).

Pural conducted a study in which urban disadvantaged youth were used to assist teachers in revising programmed packages while the same packages were revised by teachers working alone (26, p. 68). When two groups of students were taught using these packages it was found that more effective learning resulted from the group who used the packages

revised by the teachers who had been assisted by the disadvantaged youth (26, p. 68). The practice of involving students in planning the instructional program as well as management of the class has been found to be advantageous in keeping the learning realistic and interesting to the students (21, p. 44).

Burn placed strong emphasis on the use of the cooperative education program for disadvantaged students (6, p. 123). He suggested that the cooperative education program can provide the opportunity for disadvantaged youth to see a direct relationship between jobs and school, the inter-relationship that affect success on the job and often provides the youth with a feeling of success and accomplishment that is important in maintaining his interest in the total education program (6, p. 125).

A study by Archer reported that when disadvantaged students were enrolled in agriculture cooperative education programs, they were influenced to remain in school and improve their academic performance as a result of participation in the program (1, p. 247).

The involvement of disadvantaged youth in out-of-class clubs was recommended to be an effective method of working with these students. Shannon stated, "A comprehensive, out-of-class club provides a logical, workable extension to the in-class instruction of a special needs/disadvantaged youth program" (30, p. 248). McMillion, reporting on a study in communication between teachers and disadvantaged vocational agriculture students, recommended that teachers should use out-of-class clubs to provide a vehicle to afford opportunities for leadership for their students (23, p. 73).

Relative to grading of disadvantaged students it was suggested that students be graded according to their individual progress rather than on a scale used for regular students (38, p. 51). Younie suggested that liberal grading creates a negative effect on self images of students as they are aware of the amount of effort they have expended (38, p. 51). He recommended that instruction be planned liberally but that grading should not be done liberally (38, p. 53).

The Gordon and Wilkerson study found little empirical evidence to support homogenous grouping of disadvantaged students (16, p. 169). Suggesting that this practice may provide an "easier" teaching situation, they stated, "It is quite possible that the more difficult teaching situation provided by heterogenous grouping is also the more productive in the total development of the child" (16, p. 169). Lee concluded that grouping into separate classes should be avoided so that disadvantaged students may have maximum contact with regular students (20, p. 251). He suggested the use of intra-class grouping and differentiated instruction as practices which could be employed to avoid segregation of students into separate classes (20, p. 251).

CHAPTER III

PRESENTATION AND ANALYSIS OF DATA

The purpose of this study was to determine whether there was significant differences in the "importance" of selected educational practices and teaching techniques as rated by teachers of programs for disadvantaged students and teachers of regular programs. The present chapter is divided into three parts. Part I involves an analysis of data related to the grouping of the population for the study. Data relative to testing the hypothesis are analyzed in Part II. A discussion of the findings are included in Part III.

All data analyzed in the present chapter were processed by the Computing Center, University of Tennessee, Knoxville, Tennessee.

I. ANALYSIS OF DATA RELATIVE TO GROUPING OF THE POPULATION

The population for this study was composed of secondary vocational education teachers in the State of Tennessee. The survey instrument was mailed to 120 teachers and was equally divided between teachers of vocational programs for disadvantaged students and teachers of regular vocational programs.

Throughout the present chapter teachers conducting programs for disadvantaged students are referred to as Group A (G.A) and teachers of regular programs are referred to as Group B (G.B).

Table 1 shows the total number of programs in the State of Tennessee and the number and percent of the programs selected for the study. As

TABLE 1

DIVISION OF SAMPLE BY VOCATIONAL SERVICE AREA AND PROGRAM CLASSIFICATION

Vocational Service Area	Disadvantaged Programs (Group A)			Regular Programs (Group B)		
	Total Number Programs	Number Programs Sampled	Percent of Total Population Sampled	Total Number Programs	Number Programs Sampled	Percent of Total Population Sampled
Vocational Improvement Program	45	11	24.44	0	0	0.00
Vocational Agriculture	23	10	43.10	242	21	9.00
Trades and Industrial Education	94	31	32.98	357	28	7.80
Vocational Office Occupations	10	8	80.00	121	11	9.99
Marketing (Distributive Education)	0	0	00.00	104	0	0.00
Vocational Home Economics Education	6	0	00.00	555	0	0.00
Health Occupations Education	0	0	00.00	30	0	0.00
Total	178	60		1709	60	

indicated in Table 1 all the listed vocational service areas were not included in the study. Marketing (Distributive Education), Vocational Home Economics Education, and Health Occupations Education were excluded from the sample. This investigator elected not to include these service areas because they contained no or few programs designated for disadvantaged students.

Vocational Improvement Programs were excluded from the regular programs (Group B) because these programs are designated specifically for disadvantaged students. Though listed as a separate vocational service area throughout this study, Vocational Improvement Programs are not to be considered a separate service area, but inclusive of all service areas. In addition, Vocational Advancement Programs were excluded from the study because of the low numbers of such programs.

Shown in Table 2 is the number and percent return of the survey instrument. A total of 97, or 80.8 percent, of the sample selected for the study responded by returning the survey instrument.

The distribution of the years of teaching experience by teachers in programs for disadvantaged students is shown in Table 3. The scale is limited to four years of experience as this is the upper limit of the number of years of the formal existence of this type of program.

Table 4 shows the distribution of the sample relative to courses taken by teachers which related to teaching disadvantaged students. Teachers were grouped according to program classification and to whether courses had or had not been taken.

In Table 5 the distribution of the sample is shown relative to conferences and seminars attended by teachers which were related to

TABLE 2

NUMBER AND PERCENT RETURN OF SURVEY INSTRUMENT BY VOCATIONAL SERVICE AREA

Vocational Service Area	Disadvantaged Programs Group A		Regular Programs Group B	
	Number	Percent	Number	Percent
Vocational Improvement Program	10	90.0	0	00.0
Vocational Agriculture	10	100.0	17	80.9
Trades and Industrial Education	16	51.6	27	96.4
Vocational Office Education	7	80.0	10	90.9
Total	43		54	

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TABLE 3

NUMBER OF YEARS OF TEACHING EXPERIENCE OF TEACHERS IN PROGRAMS FOR DISADVANTAGED STUDENTS (GROUP A)

Years of Teaching Experience	Number of Teachers
0-1	9
1-2	20
2-3	6
3-4	8
Total	43

TABLE 4

DISTRIBUTION OF SAMPLE BY VOCATIONAL SERVICE AREA RELATIVE TO COURSES TAKEN RELATED TO TEACHING DISADVANTAGED STUDENTS

Vocational Service Area	Disadvantaged Programs Group A		Regular Programs Group B	
	Yes	No	Yes	No
Vocational Improvement Program	7	3	0	0
Vocational Agriculture	2	8	2	15
Trades and Industrial Education	7	9	3	24
Vocational Office Education	1	6	0	10
Total	17	26	5	49

TABLE 5

DISTRIBUTION OF SAMPLE BY VOCATIONAL SERVICE AREA RELATIVE TO CONFERENCES AND SEMINARS ATTENDED RELATED TO TEACHING DISADVANTAGED STUDENTS

Vocational Service Area	Disadvantaged Programs Group A		Regular Programs Group B	
	Yes	No	Yes	No
Vocational Improvement Program	10	0	0	0
Vocational Agriculture	10	0	5	12
Trades and Industrial Education	13	3	4	23
Vocational Office Occupations	5	2	1	9
Total	38	5	10	44

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teaching disadvantaged students. These teachers were also grouped according to program classification and to whether they had attended conferences and seminars.

II. ANALYSIS OF DATA RELATIVE TO TESTING THE HYPOTHESIS AND SUB-HYPOTHESES

As the hypothesis was divided into six sub-hypotheses the following interpretation of the data refers specifically to each of the sub-hypotheses.

Sub-hypotheses 1 and 2. Testing sub-hypothesis 1 and sub-hypothesis 2 involved comparisons between teachers on each of the 64 variables listed in the survey instrument (see Appendix C). The data necessary to test sub-hypotheses 1 and 2 were obtained by comparing teachers of programs for disadvantaged students (Group A) with teachers of regular programs (Group B). Analysis of variance was calculated for each variable to determine if there was a significant difference.

Sub-hypothesis 1 stated as the null hypothesis is:

> There is no significant difference between ratings of importance given to educational practices by teachers of programs for disadvantaged students and teachers of programs for regular students.

Table 6 shows the summary of the analysis of variance which includes mean scores and F and P values between teachers of Group A and teachers of Group B on variables 1-26. A significant difference was found to exist between the groups tested on the following variables:

(4) Work with students in out-of-school activities (clubs)

TABLE 6

SUMMARY OF ANALYSIS OF VARIANCE OF MEAN SCORES FOR 26 SELECTED EDUCATIONAL PRACTICES FROM TEACHERS OF DISADVANTAGED (GROUP A) AND REGULAR (GROUP B) VOCATIONAL EDUCATION PROGRAMS

Variable	Group A Mean Scores N=43	Group B Mean Scores N=54	F	P
1. Make visits to students' homes other than supervisory visits	2.883	2.556	2.316	.131
2. Hold conferences with the parents or guardians of students	3.465	3.574	.376	.541
3. Counsel with students	4.535	4.574	.092	.762
4. Work with students in out-of-school activities (clubs)	3.163	3.611	5.272	.024*
5. Plan a course of study with student assistance	2.953	3.093	.447	.505
6. Plan a course of study for students in consultation with other students	3.349	3.037	2.774	.099
7. Assign students to a training center for occupational experiences	3.302	3.741	3.853	.053
8. Use student's suggestions in developing the objectives for each lesson	3.233	3.352	.395	.531
9. Involve students in setting the rules and regulations for the class	3.930	3.426	5.670	.019*
10. Use school facilities for occupational experience	3.907	3.759	.509	.477

TABLE 6 (Continued)

Variable	Group A Mean Scores N=43	Group B Mean Scores N=54	F	P
11. Assign grades to students according to their individual progress	4.326	4.259	.139	.710
12. Assign grades to students according to the school norm (e.g. A 100-95, B 94-85)	2.349	2.815	4.335	.040*
13. Make periodic reports other than numerical or letter grades to parents relative to students' progress	3.093	3.389	1.626	.205
14. Consult with other teachers about the progress of students	3.651	3.574	.167	.684
15. Consult with other teachers about the learning difficulties of students	3.698	3.759	.095	.759
16. Diagnose learning difficulties when they occur	4.209	4.074	.622	.432
17. Develop teaching materials supplementary to texts or other references	4.302	4.407	.522	.472
18. Interpret scores from standardized testing	2.744	2.981	1.132	.290
19. Modify and adapt the existing curriculum to reach the objectives of the program	4.140	4.185	.066	.797
20. Experiment with new materials, techniques and teaching procedures	4.209	4.296	.305	.582
21. Select remedial materials and teaching techniques	3.930	3.630	2.027	.158

TABLE 6 (Continued)

Variable	Group A Mean Scores N=43	Group B Mean Scores N=54	F	P
22. Correlate mathematics, science, English, etc., with vocational subjects	3.953	4.185	1.271	.262
23. Require good classroom discipline as a condition for learning	4.302	4.593	4.156	.044*
24. Be highly permissive with students in the classroom	2.721	2.315	3.895	.051
25. Know and understand the language of the student	4.349	4.111	2.617	.109
26. Use para-professional personnel in teaching (e.g. teacher-aides)	3.093	3.111	.004	.949

*Significant at .05 level.

(9) Involve students in setting the rules and regulations for the class

(12) Assign grades to students according to the school norm

(23) Require good classroom discipline as a condition for learning

Mean scores indicate that variables 4, 12, and 23 were given higher ratings by teachers of Group B than teachers of Group A. Variable 9 was rated higher by teachers of Group A, as shown by mean scores.

As four variables were found to be significantly different, the null sub-hypothesis was rejected and the sub-hypothesis accepted.

Stated as the null sub-hypothesis, sub-hypothesis 2 is:

> There is no significant difference between the ratings of importance given to teaching techniques by teachers of programs for disadvantaged students and teachers of programs for regular students.

Table 7 shows the summary of analysis of variance which includes mean scores F and P values between teachers of Group A and teachers of Group B on variables 27-64. A significant difference was found to exist between the groups tested on the following variables:

(33) Use role playing as a teaching technique

(41) Ask many factual questions

(44) Make use of chalkboard, overhead projector, slide film projector, etc.

(47) Discuss test questions with students after grading

(54) Use models and representations in instruction of skills

(55) Make use of students' own experiences during class discussion

TABLE 7

SUMMARY OF ANALYSIS OF VARIANCE OF MEAN SCORES FOR 37 SELECTED TEACHING TECHNIQUES FROM TEACHERS OF DISADVANTAGED (GROUP A) AND REGULAR (GROUP B) VOCATIONAL EDUCATION PROGRAMS

Variable	Group A Mean Scores N=43	Group B Mean Scores N=54	F	P
27. Involve students in teaching other students	3.837	4.037	1.754	.189
28. Use the problem solving approach in teaching	4.032	4.037	.010	.920
29. Make use of the lecture method in teaching	2.698	2.778	.202	.655
30. Use demonstrations in teaching	4.442	4.556	.818	.368
31. Utilize "individualized" instruction	4.163	4.315	.828	.365
32. Utilize "small group" instruction	4.093	4.148	.098	.755
33. Use role playing as a teaching technique	2.907	3.370	5.413	.022*
34. Use a team teaching approach to teaching	2.814	3.093	1.459	.230
35. Involve resource people in teaching	3.721	4.054	3.562	.062
36. Make use of field trips	3.837	3.944	.341	.561
37. Use programmed instruction	3.209	3.278	.107	.745
38. Use simulated experiences in teaching	3.791	3.759	.037	.848
39. Teach mainly for manipulative skills	3.326	3.444	.512	.476
40. Ask many thought provoking questions	3.814	4.037	1.520	.221

TABLE 7 (Continued)

Variable	Group A Mean Scores N=43	Group B Mean Scores N=54	F	P
41. Ask many factual questions	3.140	3.685	6.994	.010**
42. Teach for knowledge of facts	3.140	3.470	1.662	.200
43. Teach for understanding of knowledge	4.442	4.315	.794	.375
44. Make use of chalkboard, overhead projector, slide film projector, etc.	4.186	4.519	4.055	.047*
45. Make use of movies, record players, reading machines, television, etc.	3.651	4.056	3.555	.062
46. Use displays and exhibits in teaching	3.860	4.037	1.242	.268
47. Discuss test questions with students after grading	4.074	4.481	8.059	.006**
48. Review materials with students before testing (review for examinations)	3.791	4.167	3.327	.071
49. Use student constructed projects as aids to teaching	3.767	3.852	.218	.642
50. Use word lists in teaching which are relevant to employment in a specific occupation	3.744	3.741	.000	.987
51. Relate instruction to employment in a group of occupations	3.767	4.074	3.174	.078
52. Relate instruction to employment in a specific occupation	3.930	3.852	.213	.646

TABLE 7 (Continued)

Variable	Group A Mean Scores N=43	Group B Mean Scores N=54	F	P
53. Use actual tools, equipment, and machines as teaching aids in development of skills	4.302	4.593	2.126	.148
54. Use models and representations in instruction of skills	3.628	4.037	5.146	.026*
55. Make use of student's own experiences during class discussions	4.000	4.315	7.122	.009**
56. Use procedures inducing reinforcement from previous lessons	3.977	4.148	1.047	.309
57. Use texts as reference books	3.581	3.741	.793	.376
58. Assign homework	2.047	2.407	3.257	.074
59. Require students to maintain a notebook	2.791	3.398	5.576	.020
60. Encourage students to use their own initiative in planning for occupational experiences	3.977	4.167	1.272	.262
61. Relate current news events to class instruction	3.744	3.815	.120	.730
62. Continually remind students of their academic deficiencies	1.791	2.074	1.710	.194
63. Relate school success with future employment	3.907	3.852	.067	.796
64. Use student progress charts	3.512	3.278	.917	.341

*Significant at .05 level.

**Significant at .01 level.

On each of the variables found to be significantly different in testing sub-hypothesis 2, teachers of Group A showed a lower mean score than teachers of Group B. In addition, variable 55 was significantly different at the .01 level.

As six variables were found to be significantly different, the null sub-hypothesis was rejected and the sub-hypothesis accepted.

Sub-hypothesis 3. Testing sub-hypothesis 3 involved dividing teachers of programs for disadvantaged students (Group A) and teachers of regular programs (Group B) into their respective vocational service areas. Analysis of variance and Duncan Multiple Range Test were used in testing sub-hypothesis 3.

Sub-hypothesis 3 stated as the null sub-hypothesis is:

> There is no significant difference between ratings of importance of educational practices and teaching techniques by teachers according to the vocational service area in which teachers are employed.

Table 8 shows the summary of data resulting from the statistical tests for sub-hypothesis 3. The summary of analysis of variance, Duncan Multiple Range Test results, and F and P values for significantly different variables are included in this table. Complete lists of the variables compared in the testing of sub-hypothesis 3 are found in Appendix C. In Table 8 the divisions of the vocational service areas included in the tests of sub-hypothesis 3 are listed as groups. Service areas listed as Group A (G.A) are Vocational Improvement Programs (VIP), Vocational Agriculture (Vo Ag), Trades and Industrial Education (T&I), and Vocational Office Education (VOE). Divisions of service areas listed as

TABLE 8

SUMMARY OF ANALYSIS OF VARIANCE OF EDUCATIONAL PRACTICES AND TEACHING TECHNIQUES BETWEEN VOCATIONAL SERVICE AREAS INCLUDING DUNCAN MULTIPLE RANGE TEST RESULTS

Variable		Duncan Multiple Range Test Results							F	P
1. Make visits to student's homes other than supervisory visits		T&I (G.A)	Vo Ag (G.B)	Vo Ag (G.A)	VOE (G.A)	T&I (G.B)	VIP (G.A)	VOE (G.B)		
	$\bar{X}$	3.188	2.941	2.900	2.714	2.630	2.500	1.700	2.547	.025*
21. Select remedial materials and teaching techniques		VIP (G.A)	VOE (G.A)	VOE (G.B)	T&I (G.A)	T&I (G.B)	Vo Ag (G.B)	Vo Ag (G.A)		
	$\bar{X}$	4.700	4.286	4.100	3.750	3.556	3.471	3.200	3.075	.009**
22. Correlate mathematics, science, English, etc. with vocational subjects		VIP (G.A)	VOE (G.B)	T&I (G.B)	Vo Ag (G.A)	VOE (G.A)	T&I (G.A)	Vo Ag (G.B)		
	$\bar{X}$	4.800	4.300	4.185	4.118	3.875	3.875	3.300	2.331	.039*
27. Involve students in teaching other students		VOE (G.A)	T&I (G.A)	VOE (G.B)	VIP (G.A)	T&I (G.B)	Vo Ag (G.B)	Vo Ag (G.A)		
	$\bar{X}$	4.286	4.222	4.100	4.000	3.813	3.706	3.400	2.440	.031*
30. Use demonstrations in teaching		VOE (G.A)	T&I (G.B)	T&I (G.A)	VOE (G.B)	Vo Ag (G.B)	VIP (G.A)	Vo Ag (G.A)		
	$\bar{X}$	4.857	4.667	4.625	4.500	4.412	4.300	4.000	2.357	.037*
31. Utilize "individualized" instruction in teaching		VOE (G.B)	VIP (G.A)	T&I (G.B)	T&I (G.A)	VOE (G.A)	Vo Ag (G.B)	Vo Ag (G.A)		
	$\bar{X}$	4.700	4.600	4.370	4.250	4.143	4.000	3.600	2.454	.030*

TABLE 8 (Continued)

Variable		Duncan Multiple Range Test Results							F	P
33. Use role playing as a teaching technique		VOE (G.B)	VOE (G.A)	VIP (G.A)	T&I (G.B)	Vo Ag (G.B)	Vo Ag (G.A)	T&I (G.A)		
	$\bar{X}$	4.000	3.714	3.300	3.259	3.176	2.700	2.438	4.016	.001**
37. Use programmed instruction in teaching		VIP (G.A)	VOE (G.B)	Vo Ag (G.B)	VOE (G.A)	T&I (G.A)	T&I (G.B)	Vo Ag (G.A)		
	$\bar{X}$	3.900	3.700	3.529	3.286	3.000	2.963	2.800	2.207	.049*
38. Use simulated experiences in teaching		VOE (G.B)	VOE (G.A)	VIP (G.A)	T&I (G.A)	T&I (G.B)	Vo Ag (G.A)	Vo Ag (G.B)		
	$\bar{X}$	4.500	4.286	3.800	3.750	3.704	3.500	2.412	2.207	.010**
39. Teach mainly for manipulative skills		T&I (G.A)	T&I (G.B)	Vo Ag (G.A)	Vo Ag (G.B)	VOE (G.B)	VOE (G.A)	VIP (G.A)		
	$\bar{X}$	3.750	3.519	3.500	3.410	3.300	3.000	2.700	3.352	.037*
41. Ask many factual questions		T&I (G.B)	VOE (G.B)	T&I (G.A)	VOE (G.A)	Vo Ag (G.B)	Vo Ag (G.A)	VIP (G.A)		
	$\bar{X}$	3.815	3.800	3.625	3.429	3.412	3.000	2.300	3.704	.002**
42. Teach for knowledge of facts		T&I (G.B)	T&I (G.A)	VOE (G.A)	VOE (G.B)	Vo Ag (G.B)	Vo Ag (G.A)	VIP (G.A)		
	$\bar{X}$	3.889	3.750	3.286	3.100	2.824	2.800	2.400	5.682	.001**

TABLE 8 (Continued)

Variable		Duncan Multiple Range Test Results							F	P
43. Teach for understanding of knowledge		VOE (G.A)	VIP (G.A)	VOE (G.B)	T&I (G.B)	T&I (G.A)	Vo Ag (G.B)	Vo Ag (G.A)		
	$\bar{X}$	4.857	4.800	4.600	4.313	4.259	4.235	4.000	2.257	.044*
45. Make use of movies, record players, reading machines, television, etc.		VIP (G.A)	Vo Ag (G.B)	T&I (G.B)	VOE (G.B)	VOE (G.A)	T&I (G.A)	Vo Ag (G.A)		
	$\bar{X}$	4.500	4.353	3.926	3.900	3.714	3.313	3.300	2.673	.020*
47. Discuss test questions with students after grading		Vo Ag (G.B)	VOE (G.B)	VOE (G.A)	T&I (G.B)	VIP (G.A)	Vo Ag (G.A)	T&I (G.A)		
	$\bar{X}$	4.588	4.500	4.429	4.407	4.300	4.000	3.750	2.392	.034*
53. Use actual tools, equipment, and machines as teaching aids in development of skills		VOE (G.B)	T&I (G.A)	VOE (G.A)	Vo Ag (G.B)	T&I (G.B)	Vo Ag (G.A)	VIP (G.A)		
	$\bar{X}$	4.900	4.875	4.857	4.529	4.519	4.300	3.000	6.397	.001**
58. Assign homework		VOE (G.A)	VOE (G.B)	T&I (G.B)	Vo Ag (G.B)	T&I (G.A)	Vo Ag (G.A)	VIP (G.A)		
	$\bar{X}$	3.000	2.700	2.407	2.235	2.063	2.000	1.400	2.857	.014*
59. Require students to maintain a notebook		Vo Ag (G.B)	T&I (G.B)	VOE (G.A)	Vo Ag (G.A)	T&I (G.A)	VOE (G.B)	VIP (G.A)		
	$\bar{X}$	4.118	3.222	3.000	3.000	2.875	2.600	2.300	3.296	.006**

TABLE 8 (Continued)

Variable		Duncan Multiple Range Test Results							F	P
60. Encourage students to use their own initiative in planning for occupational experiences		VOE (G.A)	VIP (G.A)	T&I (G.B)	T&I (G.A)	Vo Ag (G.B)	VOE (G.B)	Vo Ag (G.A)		
	$\bar{X}$	4.571	4.300	4.296	4.063	4.059	4.000	3.100	3.768	.002**
61. Relate current news events to classroom instruction		Vo Ag (G.B)	VOE (G.A)	VIP (G.A)	T&I (G.B)	Vo Ag (G.A)	T&I (G.A)	VOE (G.B)		
	$\bar{X}$	4.235	4.143	4.000	3.889	3.700	3.438	2.900	2.817	.015*
62. Continually remind students of their academic deficiencies		T&I (G.B)	T&I (G.A)	Vo Ag (G.B)	Vo Ag (G.A)	VOE (G.A)	VOE (G.B)	VIP (G.A)		
	$\bar{X}$	2.333	2.188	2.059	2.000	1.429	1.400	1.200	2,522	.027*
64. Use student progress charts		VOE (G.A)	T&I (G.A)	T&I (G.B)	VIP (G.A)	VOE (G.B)	Vo Ag (G.B)	Vo Ag (G.A)		
	$\bar{X}$	4.429	3.688	3.556	3.500	3.200	2.882	2.600	2.688	.019*

*Significant at .05 level.

**Significant at .01 level.

Group B (G.B) are Vocational Agriculture, Trades and Industrial Education, and Vocational Office Education.

Duncan Multiple Range Test results are presented as bar graphs within Table 8 to locate significant differences between vocational service areas. Service areas contained in a subset of means, groups connected by the same bar, indicate a non-significant difference between or among such groups. In addition, no difference between means is shown when the two means concerned are both contained in a subset which is non-significant. On the other hand, groups that are not connected by a bar indicate a difference significant at or greater than the .05 level. As an example, variable 1, Table 8, shows that a significant difference existed between Vocational Office Education teachers of Group B and the remainder of the groups. Variable 21, Table 8, shows that Vocational Improvement Program teachers of Group A were significantly different from Trades and Industrial Education and Vocational Agriculture teachers of Groups A and B, and Vocational Office Education teachers of Groups A and B were significantly different from Vocational Agriculture teachers of Group A.

As 22 variables were found to be significantly different, the null sub-hypothesis was rejected and the sub-hypothesis accepted.

Sub-hypothesis 4. Testing sub-hypothesis 4 involved comparing the responses of teachers of programs for disadvantaged students (Group A) on the 64 variables listed in the survey instrument, as based on the number of years of experience in teaching in such programs.

Stated as the null sub-hypothesis, sub-hypothesis 4 is:

There is no significant difference between ratings of

importance of educational practices and teaching techniques according to the number of years of experience in teaching in programs for disadvantaged students.

Table 9 presents a summary of analysis of variance including F and P values on significantly different variables and Duncan Multiple Range Test results. A complete list of the variables included in testing sub-hypothesis 4 are found in Appendix C. As in Table 8, page 44, bar graphs are included in Table 9 to locate areas of significant differences between or among the listed divisions. The divisions listed as a part of the Duncan Multiple Range Test results are years of experience in teaching in programs for disadvantaged students.

As 16 variables were found to be significantly different, the null sub-hypothesis was rejected and the sub-hypothesis accepted.

Sub-hypothesis 5. Testing the data for sub-hypothesis 5 involved the application of two-way analysis of variance to determine the effect of courses taken related to teaching disadvantaged students. As in previous tests in this study, comparisons were made of the responses of teachers to 64 variables listed in the survey instrument (see Appendix C). When interaction between groups (program classification) and courses was found to be significantly different, Duncan Multiple Range Test were used to locate the areas of differences. As in testing the data relative to sub-hypothesis 3 and 4, only significantly different variables are interpreted in the discussion of sub-hypothesis 5.

Stated as the null sub-hypothesis, sub-hypothesis 5 is:

There is no significant difference between ratings of

TABLE 9

SUMMARY OF ANALYSIS OF VARIANCE OF EDUCATIONAL PRACTICES AND TECHNIQUES BETWEEN EXPERIENCE IN TEACHING DISADVANTAGED STUDENTS INCLUDING DUNCAN MULTIPLE RANGE TEST RESULTS

Variable		Duncan Multiple Range Test Results				F	P
16. Diagnose learning difficulties when they occur		3-4 Years	0-1 Years	2-3 Years	1-2 Years		
	$\bar{X}$	4.714	4.400	4.250	3.600	3.606	.022*
19. Modify and adapt the existing curriculum to reach the objectives of the program		0-1 Years	3-4 Years	2-3 Years	1-2 Years		
	$\bar{X}$	4.800	4.286	3.938	3.700	3.287	.031*
21. Select remedial materials and teaching techniques		0-1 Years	3-4 Years	2-3 Years	1-2 Years		
	$\bar{X}$	4.700	4.286	3.750	3.200	5.463	.033**
22. Correlate mathematics, science, English, etc. with vocational subjects		0-1 Years	2-3 Years	3-4 Years	1-2 Years		
	$\bar{X}$	4.800	3.875	3.857	3.300	4.153	.012*
30. Use demonstrations in teaching		3-4 Years	2-3 Years	0-1 Years	1-2 Years		
	$\bar{X}$	4.857	4.625	4.300	4.000	3.445	.026*
33. Use role playing as a teaching technique		3-4 Years	0-1 Years	1-2 Years	2-3 Years		
	$\bar{X}$	3.714	3.300	2.700	2.438	3.482	.025*

TABLE 9 (Continued)

Variable		Duncan Multiple Range Test Results				F	P
39. Teach mainly for manipulative skills		2-3 Years	1-2 Years	3-4 Years	0-1 Years		
	$\bar{X}$	3.750	3.500	3.000	2.700	3.982	.014*
41. Ask many factual questions		2-3 Years	3-4 Years	1-2 Years	0-1 Years		
	$\bar{X}$	3.625	3.429	3.000	2.300	4.777	.006**
42. Teach for knowledge of facts		2-3 Years	3-4 Years	1-2 Years	0-1 Years		
	$\bar{X}$	3.750	3.286	2.800	2.400	5.105	.004**
43. Teach for understanding of knowledge		1-2 Years	0-1 Years	2-3 Years	3-4 Years		
	$\bar{X}$	4.857	4.800	4.313	4.000	3.078	.039*
46. Use displays and exhibits in teaching		0-1 Years	3-4 Years	2-3 Years	1-2 Years		
	$\bar{X}$	4.300	4.286	3.750	3.300	3.449	.026*
53. Use actual tools, equipment, and machines as teaching aids in development of skills		2-3 Years	3-4 Years	1-2 Years	0-1 Years		
	$\bar{X}$	4.875	4.857	4.300	4.000	11.003	.001**
56. Use procedures inducing reinforcement from previous lessons		3-4 Years	0-1 Years	2-3 Years	1-2 Years		
	$\bar{X}$	4.714	4.200	3.813	3.500	4.149	.012*

TABLE 9 (Continued)

Variable		Duncan Multiple Range Test Results				F	P
58. Assign homework		3-4 Years	2-3 Years	1-2 Years	0-1 Years		
	$\overline{X}$	3.000	2.063	2.000	1.400	5.026	.005**
60. Encourage students to use their own initiative in planning for occupational experiences		3-4 Years	0-1 Years	2-3 Years	1-2 Years		
	$\overline{X}$	4.571	4.300	4.065	3.100	6.800	.001**
64. Use student progress charts		3-4 Years	2-3 Yeras	0-1 Years	1-2 Years		
	$\overline{X}$	4.429	3.688	3.500	2.600	3.209	.031*

*Significant at .05 level.
**Significant at .01 level.

importance of educational practices and teaching techniques according to the professional training of teachers related to teaching disadvantaged students.

The means and standard deviations for significantly different variables related to sub-hypothesis 5 are presented in Table 10. In interpreting Table 10 it is necessary to make comparisons between pairs of means depending on the area of significance found in the tables of two-way analysis of variance. These data are further examined in the following tables related to sub-hypothesis 5.

Table 11 presents the summary of two-way analysis of variance for variable 3. It can be seen that the P value between teachers having courses and teachers not having courses was within the level of significance designated for this study. Means in Table 10 for variable 3 show that teachers of Group A and Group B who had taken courses related to teaching disadvantaged students considered it more important to counsel with students than teachers of each group who had not taken courses.

It is shown in Table 12 that a significant difference occurred from the test between teachers of Group A and Group B on variable 4. Table 10 presents means which indicate that teachers of Group A placed more emphasis on working with students in out-of-school activities than did teachers of Group B.

The summary based on the test of variable 6 is shown in Table 13. Means shown in Table 10 indicate that teachers not having courses considered planning a course of study for students in consultation with other teachers less important than teachers having courses.

TABLE 10

MEANS AND STANDARD DEVIATION OF SIGNIFICANT VARIABLES FOR GROUP A AND GROUP B TEACHERS ACCORDING TO COURSES TAKEN RELATED TO TEACHING DISADVANTAGED STUDENTS

Variable Number	Group A Courses Yes N=17	Group A Courses No N=26	Group B Courses Yes N=5	Group B Courses No N=49
3	4.824 .529	4.246 .689	4.800 .447	4.551 .614
4	3.294 .985	3.077 1.017	3.600 .548	3.612 .953
6	3.765 .752	3.077 .891	3.000 .707	3.041 .957
17	4.471 .624	4.192 .749	5.000 .000	4.347 .723
21	4.294 .920	3.692 1.011	4.000 .707	3.592 1.079
22	4.353 .862	3.692 1.123	4.400 .548	4.163 .986
29	2.471 .717	2.846 .925	2.000 1.000	2.857 .842
33	2.647 1.057	3.077 1.055	3.000 1.000	3.408 .888
41	3.000 1.173	3.231 .908	3.000 1.225	3.755 .969
44	4.588 .507	3.923 1.129	4.600 .894	4.510 .617
45	4.235 .831	3.269 1.282	4.600 .584	4.000 .913
47	4.235 .752	3.923 .891	4.600 .548	4.469 .680

TABLE 10 (Continued)

Variable Number	Group A Courses Yes N=17	Group A Courses No N=26	Group B Courses Yes N=5	Group B Courses No N=49
55	3.941	4.038	4.200	4.327
	.659	.528	.447	.591
58	1.529	2.385	1.600	2.490
	.624	.985	.894	.982
59	2.941	2.692	3.000	3.429
	1.638	1.050	1.225	1.190
60	4.118	3.885	3.200	4.265
	.857	.909	1.095	.670

TABLE 11

SUMMARY OF ANALYSIS OF VARIANCE OF VARIABLE 3[a]
BETWEEN GROUPS AND COURSES

Source of Variation	SS	df	MS	F	P
Between Groups	.037	1	.037	.097	.756
Between Courses	2.460	1	2.460	6.484	.013*
Interaction	.164	1	.164	.433	.512
Error	35.247	93	.379		
Total	37.908	96	3.040		

[a]Variable 3: Counsel with students.

*Significant at .05 level.

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TABLE 12

SUMMARY OF ANALYSIS OF VARIANCE OF VARIABLE 4[a]
BETWEEN GROUPS AND COURSES

Source of Variation	SS	df	MS	F	P
Between Groups	4.811	1	4.811	5.191	.025*
Between Courses	.320	1	.320	.345	.558
Interaction	.166	1	.166	.179	.673
Error	86.211	93	.927		
Total	95.508	96	6.242		

[a]Variable 4: Work with students in out-of-school activities.

*Significant at .05 level.

TABLE 13

SUMMARY OF ANALYSIS OF VARIANCE OF VARIABLE 6[a]
BETWEEN GROUPS AND COURSES

Source of Variation	SS	df	MS	F	P
Between Groups	2.327	1	2.327	2.893	.092
Between Courses	3.199	1	3.199	3.976	.049*
Interaction	1.671	1	1.671	2.077	.153
Error	74.865	93	.805		
Total	82.062	96	8.002		

[a]Variable 6: Plan a course of study for students in consultation with other teachers.

*Significant at .05 level.

Table 14 shows that a significant difference occurred on variable 17 between teachers having courses and teachers not having courses related to teaching disadvantaged students. Teachers having courses rated this variable higher than teachers not having courses as shown by means in Table 10, page 54. The indication is that teachers who had taken courses considered it more important to develop teaching materials supplemental to the texts or other references than did teachers who had not taken courses.

Variable 21 is shown in Table 15 to be significantly different between courses taken by teachers. Table 10, page 54, presents data indicating that teachers having courses were more likely to place a greater importance on selecting remedial materials and teaching techniques than teachers not having courses.

Data obtained from the analysis of variance of variable 22 are shown in Table 16. The area of significance was found to exist between courses taken by teachers. Reference to Table 10, page 54, shows that teachers having courses identified the educational practice of correlating academic subjects with vocational subjects as being more important than teachers not having courses.

Table 17 shows that a significant difference was found to exist on variable 29 between courses taken by teachers. Inspection of means in Table 10, page 54, shows that teachers who had taken courses considered it less important to use the lecture method in teaching than teachers who had not taken courses.

Presented in Table 18 is a summary of the data resulting from the test of variable 33. Means listed in Table 10, page 54, show that teachers

TABLE 14

SUMMARY OF ANALYSIS OF VARIANCE OF VARIABLE 17[a]
BETWEEN GROUPS AND COURSES

Source of Variation	SS	df	MS	F	P
Between Groups	.264	1	.264	.542	.464
Between Courses	2.289	1	2.289	4.691	.033*
Interaction	.442	1	.442	.906	.344
Error	45.384	93	.488		
Total	48.379	96	3.283		

[a]Variable 17: Develop teaching materials supplemental to the texts or other references.

*Significant at .05 level.

TABLE 15

SUMMARY OF ANALYSIS OF VARIANCE OF VARIABLE 21[a]
BETWEEN GROUPS AND COURSES

Source of Variation	SS	df	MS	F	P
Between Groups	2.163	1	2.163	2.076	.153
Between Courses	4.361	1	4.361	4.185	.044*
Interaction	.188	1	.118	.113	.737
Error	96.906	93	1.042		
Total	103.618	96	7.684		

[a]Variable 21: Select remedial materials and teaching techniques.

*Significant at .05 level.

TABLE 16

SUMMARY OF ANALYSIS OF VARIANCE OF VARIABLE 22[a]
BETWEEN GROUPS AND COURSES

Source of Variation	SS	df	MS	F	P
Between Groups	1.285	1	1.285	1.309	.256
Between Courses	4.175	1	4.175	4.252	.042*
Interaction	.566	1	.566	.576	.450
Error	91.326	93	.982		
Total	97.352	96	7.008		

[a]Variable 22: Correlate mathematics, science, English, etc., with vocational subjects.

*Significant at .05 level

TABLE 17

SUMMARY OF ANALYSIS OF VARIANCE OF VARIABLE 29[a]
BETWEEN GROUPS AND COURSES

Source of Variation	SS	df	MS	F	P
Between Groups	.154	1	.154	.211	.647
Between Courses	4.053	1	4.053	5.574	.020*
Interaction	.730	1	.730	1.004	.319
Error	67.611	93	.727		
Total	72.548	96	5.664		

[a]Variable 29: Make use of the lecture method in teaching.

*Significant at .05 level.

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TABLE 18

SUMMARY OF ANALYSIS OF VARIANCE OF VARIABLE 33[a]
BETWEEN GROUPS AND COURSES

Source of Variation	SS	df	MS	F	P
Between Groups	5.140	1	5.140	5.459	.022*
Between Courses	2.654	1	2.654	2.818	.097
Interaction	.001	1	.001	.002	.968
Error	87.606	93	.942		
Total	95.401	96	8.737		

[a]Variable 33: Use role playing as a teaching technique

*Significant at .05 level.

of Group A rated using role playing as a teaching technique lower than teachers of Group B.

Data obtained from the analysis of variable 41 are presented in Table 19. As in Table 18, the area of difference found to exist was between groups of teachers. Table 10, page 54, presents means which indicate that teachers of Group A considered it less important to ask many factual questions than teachers of Group B.

Table 20 shows the area of difference in variable 44 to be between courses taken. Means shown in Table 10, page 54, indicate that teachers having taken courses identified the teaching technique of making use of chalkboard, overhead projector and slide film projector as less important than teachers not having courses.

Table 21 indicates that the area of difference is located between teachers having courses and teachers not having courses on variable 45. Table 10, page 54, shows that teachers having taken courses identified as more important the use of movies, record players, reading machines and television in teaching than teachers not having courses.

Presented in Table 22 is a summary of the test of variable 47. As shown in this table, the area of significance was found to be between groups of teachers. Table 10, page 54, indicates that teachers of Group A considered it more important to discuss test questions with students after grading than teachers of Group B.

Variable 55 presented in Table 23 shows a difference to exist between groups of teachers. It is indicated in Table 10, page 54, that teachers of Group B gave a higher rating than teachers of Group A to the importance of making use of the student's own experiences during class discussions.

TABLE 19

SUMMARY OF ANALYSIS OF VARIANCE OF VARIABLE 41[a]
BETWEEN GROUPS AND COURSES

Source of Variation	SS	df	MS	F	P
Between Groups	7.127	1	7.127	7.076	.009**
Between Courses	2.269	1	2.269	2.252	.137
Interaction	.865	1	.865	.859	.356
Error	93.651	93	1.007		
Total	103.912	96	11.268		

[a]Variable 41: Ask many factual questions.

**Significant at .01 level.

TABLE 20

SUMMARY OF ANALYSIS OF VARIANCE OF VARIABLE 44[a]
BETWEEN GROUPS AND COURSES

Source of Variation	SS	df	MS	F	P
Between Groups	2.646	1	2.646	4.287	.041
Between Courses	3.542	1	3.542	5.739	.019*
Interaction	1.042	1	1.042	1.688	.617
Error	57.381	93	.617		
Total	64.611	96	7.847		

[a]Variable 44: Make use of chalkboard, overhead projector, slide film projector, etc.

*Significant at .05 level.

TABLE 21

SUMMARY OF ANALYSIS OF VARIANCE OF VARIABLE 45[a]
BETWEEN GROUPS AND COURSES

Source of Variation	SS	df	MS	F	P
Between Groups	3.915	1	3.915	3.899	.051
Between Courses	10.805	1	10.805	10.761	.001**
Interaction	.422	1	.422	.420	.518
Error	93.372	93	1.004		
Total	108.514	96	16.146		

[a]Variable 45: Make use of movies, record players, reading machines, television, etc.

**Significant at .01 level.

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TABLE 22

SUMMARY OF ANALYSIS OF VARIANCE OF VARIABLE 47[a]
BETWEEN GROUPS AND COURSES

Source of Variation	SS	df	MS	F	P
Between Groups	4.529	1	4.529	8.052	.006**
Between Courses	.976	1	.976	1.735	.191
Interaction	.104	1	.104	.185	.668
Error	52.266	93	.562		
Total	57.875	96	6.171		

[a]Variable 47: Discuss test questions with students after grading.

**Significant at .01 level.

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TABLE 23

SUMMARY OF ANALYSIS OF VARIANCE OF VARIABLE 55[a]
BETWEEN GROUPS AND COURSES

Source of Variation	SS	df	MS	F	P
Between Groups	2.373	1	2.373	7.009	.010**
Between Courses	.167	1	.167	.494	.484
Interaction	.003	1	.003	.008	.929
Error	31.434	93	.338		
Total	33.977	96	2.881		

[a]Variable 55: Make use of student's own experiences during class discussions.

**Significant at .01 level.

Shown in Table 24 are the results of the test for variable 58. As presented in this table the area of difference is between teachers having taken courses and teachers not having taken courses. Table 10, page 54, presents data indicating that teachers having courses considered it less important for students to be assigned homework than teachers not having courses.

Table 25 presents the results of the test of variable 59. The area of difference shown in Table 25 is between groups of teachers. Table 10, page 54, presents data showing that teachers of Group B gave a higher rating than teachers of Group A to the teaching techniques of requiring students to maintain a notebook.

Presented in Table 26 is a summary of the tests for variable 60. The interaction of groups and courses is shown to be significant. Shown in footnote b is the Duncan Multiple Range Test results. A significant difference is shown to exist between Group A teachers and Group B teachers who had taken courses, and Group A teachers who had not taken courses. Variable 60 dealt with encouraging students to use their own initiative in planning for occupational experiences.

As a significant difference was found to exist on ten variables between teachers who had taken courses and teachers who had not taken courses, the null sub-hypothesis was rejected and the sub-hypothesis accepted.

Sub-hypothesis 6. Testing the data for sub-hypothesis 6 involved the application of two-way analysis of variance to determine the effect of conferences and seminars attended relating to teaching disadvantaged students. Comparisons were made of the responses of teachers to the

TABLE 24

SUMMARY OF ANALYSIS OF VARIANCE OF VARIABLE 58[a]
BETWEEN GROUPS AND COURSES

Source of Variation	SS	df	MS	F	P
Between Groups	3.118	1	3.118	3.632	.060
Between Courses	11.106	1	11.106	12.938	.001**
Interaction	.004	1	.004	.004	.947
Error	79.794	93	.858		
Total	94.022	96	15.086		

[a]Variable 58: Assign homework.

**Significant at .01 level.

TABLE 25

SUMMARY OF ANALYSIS OF VARIANCE OF VARIABLE 59[a]
BETWEEN GROUPS AND COURSES

Source of Variation	SS	df	MS	F	P
Between Groups	8.566	1	8.566	5.514	.021*
Between Courses	.025	1	.025	.016	.898
Interaction	1.445	1	1.445	.930	.337
Error	144.522	93	1.554		
Total	154.558	96	11.590		

[a]Variable 59: Require students to maintain a notebook.

*Significant at .05 level.

TABLE 26

SUMMARY OF ANALYSIS OF VARIANCE OF VARIABLE 60[a] BETWEEN GROUPS AND COURSES INCLUDING DUNCAN MULTIPLE RANGE TEST RESULTS[b]

Source of Variation	SS	df	MS	F	P
Between Groups	.864	1	.864	1.366	.245
Between Courses	.401	1	.401	.635	.428
Interaction	5.306	1	5.306	8.397	.005**
Error	58.776	93	.632		
Total	65.347	96	7.203		

[a]Variable 60: Encourage students to use their own initiative in planning for occupational experiences.

[b]Duncan Multiple Range Test Results:

	Courses Yes (Group B)	Courses No (Group A)	Courses Yes (Group A)	Courses No (Group B)
Mean	4.265	4.118	3.885	3.200

**Significant at .01 level.

64 variables listed in the survey instrument (see Appendix C). Duncan Multiple Range Tests were used to locate areas of differences when interaction of groups (program classification) and conferences and seminars was found to be significant. Only significantly different variables are interpreted in the discussion of sub-hypothesis 5.

Stated as the null sub-hypothesis, sub-hypothesis 6 is:

> There is no significant difference between ratings of importance of educational practices and teaching techniques according to conferences and seminars attended by teachers which were related to teaching disadvantaged students.

Table 27 presents means and standard deviations for significantly different variables related to testing sub-hypothesis 6. In interpreting Table 27 it is necessary to make comparisons between pairs of means depending on the area of significance found in the tables of two-way analysis of variance. These data are further examined in the discussion of the tests of variables for sub-hypothesis 6.

Table 28 shows the results of the two-way analysis of variance for variable 4. As indicated by this table the area of significance is between groups of teachers. Means for variable 4 in Table 27 show that teachers of Group A rated working with students on out-of-school activities as less important than teachers of Group B.

The summary of the test of variable 9 is shown in Table 29. The area of significance shown in Table 29 is between groups of teachers. Table 27 presents data indicating that teachers of Group A rated involving students in setting the rules and regulations for the class higher than teachers of Group B.

TABLE 27

MEANS AND STANDARD DEVIATION OF SIGNIFICANT VARIABLES FOR GROUP A AND GROUP B TEACHERS ACCORDING TO CONFERENCES AND SEMINARS ATTENDED RELATED TO TEACHING DISADVANTAGED STUDENTS

Variable Number	Group A Conferences and Seminars Yes N=38	Group A Conferences and Seminars No N=5	Group B Conferences and Seminars Yes N=10	Group B Conferences and Seminars No N=44
4	3.184	3.000	3.400	3.659
	.982	1.225	.843	.939
9	3.921	4.000	3.600	3.386
	.997	.707	1.265	1.061
12	2.316	2.600	2.900	2.795
	1.141	1.140	1.101	1.069
20	4.342	3.200	4.100	4.341
	.745	.837	.738	.713
22	4.079	3.000	4.500	4.114
	1.050	.707	.707	.993
23	4.263	4.600	4.600	4.591
	.795	.548	.843	.583
31	4.263	3.400	3.900	4.409
	.724	1.342	.876	.757
33	2.947	2.600	3.200	3.409
	1.089	.894	.919	.897
36	3.895	3.400	4.400	3.841
	.894	1.673	.699	.805
41	3.158	3.000	3.200	3.795
	1.053	.707	1.229	.930
44	4.184	4.200	4.600	4.500
	.955	1.304	.699	.629
47	4.000	4.400	4.800	4.409
	.838	.894	.422	.693

TABLE 27 (Continued)

Variable Number	Group A Conferences and Seminars Yes N=38	Group A Conferences and Seminars No N=5	Group B Conferences and Seminars Yes N=10	Group B Conferences and Seminars No N=44
54	3.605	3.800	3.900	4.068
	.855	1.095	1.197	.818
55	4.000	4.000	4.400	4.295
	.569	.707	.699	.553
59	2.763	3.000	3.500	3.364
	1.218	2.000	1.179	1.203

TABLE 28

SUMMARY OF ANALYSIS OF VARIANCE OF VARIABLE 4[a]
BETWEEN GROUPS AND CONFERENCES AND SEMINARS

Source of Variation	SS	df	MS	F	P
Between Groups	4.811	1	4.811	5.203	.025*
Between Conferences and Seminars	.134	1	.134	.145	.704
Interaction	.563	1	.563	.609	.437
Error	86.025	93	.925		
Total	91.533	96	6.433		

[a]Variable 4: Work with students in out-of-school activities.

*Significant at .05 level.

TABLE 29

SUMMARY OF ANALYSIS OF VARIANCE OF VARIABLE 9[a]
BETWEEN GROUPS AND CONFERENCES AND SEMINARS

Source of Variation	SS	df	MS	F	P
Between Groups	6.088	1	6.088	5.573	.020*
Between Conferences and Seminars	.154	1	.154	.141	.708
Interaction	.245	1	.245	.225	.637
Error	101.556	93	1.092		
Total	108.043	96	7.579		

[a]Variable 9: Involve students in setting the rules and regulations for the class.

*Significant at .05 level.

Presented in Table 30 are the data resulting from the test of variable 12. As indicated in this table the area of significance is between groups of teachers. Means in Table 27, page 76, show that teachers of Group B considered it more important to assign grades to students according to the school norm than teachers of Group A.

Table 31 shows that a significant difference occurred on the interaction of groups of teachers and conferences and seminars on variable 20. The Duncan Multiple Range Test results included as a footnote in Table 31 indicate that teachers of Group A and Group B who had not attended conferences and seminars were significantly different from teachers of Group B who had attended conferences and seminars. Variable 20 dealt with experimenting with new materials and teaching procedures.

Variable 22 is shown in Table 32 as being significantly different between conferences and seminars attended or not attended by teachers. Means shown in Table 27, page 76, indicate that teachers attending conferences and seminars considered correlating academic courses with vocational courses more important than teachers not attending such meetings.

Table 33 presents data on variable 23 indicating the area of significance to exist between groups of teachers. Table 27, page 76, shows that teachers of Group B considered it of more importance to require good classroom discipline as a condition for learning than teachers of Group A.

Presented in Table 34 is a summary of the tests of variable 31. As the interaction of groups of teachers and conferences and seminars

TABLE 30

SUMMARY OF ANALYSIS OF VARIANCE OF VARIABLE 12[a]
BETWEEN GROUPS AND CONFERENCES AND SEMINARS

Source of Variation	SS	df	MS	F	P
Between Groups	5.198	1	5.198	4.260	.042*
Between Conferences and Seminars	.011	1	.011	.013	.918
Interaction	.433	1	.433	.355	.553
Error	113.460	93	1.220		
Total	119.102	96	6.862		

[a]Variable 12: Assign grades to students according to school norm.

*Significant at .05 level.

TABLE 31

SUMMARY OF ANALYSIS OF VARIANCE OF VARIABLE 20[a] BETWEEN GROUPS AND CONFERENCES AND SEMINARS INCLUDING DUNCAN MULTIPLE RANGE TEST RESULTS[b]

Source of Variation	SS	df	MS	F	P
Between Groups	.181	1	.181	.336	.546
Between Conferences and Seminars	.757	1	.757	1.403	.239
Interaction	5.480	1	5.480	10.164	.002**
Error	50.127	93	.539		
Total	56.545	96	6.975		

[a]Variable 20: Experiment with new materials, techniques, and teaching procedures.

[b]Duncan Multiple Range Test Results:

	Conferences and Seminars No (Group B)	Conferences and Seminars No (Group A)	Conferences and Seminars Yes (Group A)	Conferences and Seminars Yes (Group B)
Mean	4.409	4.263	3.900	3.400

**Significant at .01 level.

TABLE 32

SUMMARY OF ANALYSIS OF VARIANCE OF VARIABLE 22[a]
BETWEEN GROUPS AND CONFERENCES AND SEMINARS

Source of Variation	SS	df	MS	F	P
Between Groups	1.285	1	1.285	1.332	.251
Between Conferences and Seminars	4.986	1	4.986	5.170	.025*
Interaction	1.374	1	1.374	1.425	.236
Error	89.652	93	.964		
Total	97.297	96	8.609		

[a]Variable 22: Correlate mathematics, science, English, etc., with vocational subjects.

*Significant at .05 level.

TABLE 33

SUMMARY OF ANALYSIS OF VARIANCE OF VARIABLE 23[a]
BETWEEN GROUPS AND CONFERENCES AND SEMINARS

Source of Variation	SS	df	MS	F	P
Between Groups	2.017	1	2.017	4.113	.045*
Between Conferences and Seminars	.159	1	.159	.325	.570
Interaction	.343	1	.343	.699	.450
Error	45.570	93	.490		
Total	48.089	96	3.009		

[a]Variable 23: Require good classroom discipline as a condition for learning.

*Significant at .05 level.

TABLE 34

SUMMARY OF ANALYSIS OF VARIANCE OF VARIABLE 31[a] BETWEEN GROUPS AND CONFERENCES AND SEMINARS INCLUDING DUNCAN MULTIPLE RANGE TEST RESULTS[b]

Source of Variation	SS	df	MS	F	P
Between Groups	.553	1	.553	.886	.349
Between Conferences and Seminars	.009	1	.009	.014	.905
Interaction	5.395	1	5.395	8.635	.004**
Error	58.125	93	.625		
Total	64.082	96	6.582		

[a]Variable 31: Utilize "individualized" instruction in teaching.

[b]Duncan Multiple Range Test Results:

	Conferences and Seminars Yes (Group A)	Conferences and Seminars No (Group B)	Conferences and Seminars Yes (Group B)	Conferences and Seminars No (Group A)
Mean	4.342	4.341	4.100	3.200

**Significant at .01 level

attended is significantly different, the Duncan Multiple Range Test was included as a footnote in Table 34 to identify the area of difference. It is shown in Table 34 that teachers of Group A who had not attended conferences and seminars were significantly different from teachers of the remaining groups. Variable 31 dealt with using individualized instruction as a teaching technique.

Shown in Table 35 are the results of the analysis of variable 33. The area of significance is shown to be between groups of teachers. Teachers of Group A rated using role playing as a teaching technique lower than teachers of Group B as shown by data in Table 27, page 76.

Table 36 presents the summary of the test for variable 36. As indicated in this table the area of significance is between conferences and seminars attended or not attended by teachers. Means shown in Table 27, page 76, indicate that teachers who had attended conferences and seminars identified the use of field trips more important than teachers who had not attended such meetings.

Presented in Table 37 are the results of the test of variable 41. The area of significance is shown to be between groups of teachers. Table 27, page 76, presents means for variable 41 which indicate that teachers of Group A rated asking many factual questions as less important than teachers of Group B.

The summary of variable 44 is shown in Table 38. As this table shows the area of significance to exist between groups of teachers, Table 27, page 76, presents means indicating that teachers of Group A considered making use of the chalkboard, overhead projector, and slide film projector less important than teachers of Group B.

TABLE 35

SUMMARY OF ANALYSIS OF VARIANCE OF VARIABLE 33[a]
BETWEEN GROUPS AND CONFERENCES AND SEMINARS

Source of Variation	SS	df	MS	F	P
Between Groups	5.140	1	5.140	5.351	.023*
Between Conferences and Seminars	.002	1	.002	.002	.961
Interaction	.887	1	.887	.924	.339
Error	89.373	93	.961		
Total	95.402	96	6.990		

[a]Variable 33: Use role playing as a teaching technique.

*Significant at .05 level.

TABLE 36

SUMMARY OF ANALYSIS OF VARIANCE OF VARIABLE 36[a]
BETWEEN GROUPS AND CONFERENCES AND SEMINARS

Source of Variation	SS	df	MS	F	P
Between Groups	.275	1	.275	.350	.555
Between Conferences and Seminars	3.617	1	3.617	4.603	.035*
Interaction	.012	1	.012	.015	.902
Error	73.098	93	.786		
Total	77.002	96	4.690		

[a]Variable 36: Make use of field trips in teaching.

*Significant at .05 level.

TABLE 37

SUMMARY OF ANALYSIS OF VARIANCE OF VARIABLE 41[a]
BETWEEN GROUPS AND CONFERENCES AND SEMINARS

Source of Variation	SS	df	MS	F	P
Between Groups	7.127	1	7.127	7.066	.009**
Between Conferences and Seminars	1.373	1	1.373	1.361	.246
Interaction	1.626	1	1.626	1.612	.207
Error	93.837	93	1.009		
Total	103.963	96	11.135		

[a]Variable 41: Ask many factual questions.

**Significant at .01 level.

TABLE 38

SUMMARY OF ANALYSIS OF VARIANCE OF VARIABLE 44[a]
BETWEEN GROUPS AND CONFERENCES AND SEMINARS

Source of Variation	SS	df	MS	F	P
Between Groups	2.646	1	2.646	3.975	.049*
Between Conferences and Seminars	.044	1	.044	.066	.797
Interaction	.038	1	.038	.058	.811
Error	61.938	93	.666		
Total	64.666	96	3.394		

[a]Variable 44: Make use of chalkboard, overhead projector, slide film projector, etc.

*Significant at .05 level.

Shown in Table 39 are the results of the test of variable 47. The area of significance is indicated to be between groups of teachers. Teachers of Group A considered discussing test questions with students of less importance than teachers of Group B as indicated by means in Table 27, page 76.

Table 40 presents a summary of the test of variable 54. As indicated in Table 40 the area of significance is between groups of teachers. Data from Table 27, page 76, show that teachers of Group A rated using models and representations in the instruction of skills as less important than teachers of Group B.

It can be seen from Table 41 that the area of significance for variable 55 is between groups of teachers. Table 27, page 76, presents means which indicate that teachers of Group A identified the teaching technique of making use of the students' own experiences during class discussions as being of less importance than the teachers of Group B.

Presented in Table 42 is a summary of the test of variable 59. As shown in this table the area of significance is between groups of teachers. Data from Table 27, page 76, indicate that teachers of Group A considered requiring students to maintain a notebook to be of less importance than teachers of Group B.

Though 15 variables were found to be significantly different, 11 of those variables were significant between groups of teachers. As four variables were found to be significantly different between conferences and seminars attended or not attended by teachers, the null sub-hypothesis was rejected and the sub-hypothesis accepted.

TABLE 39

SUMMARY OF ANALYSIS OF VARIANCE OF VARIABLE 47[a]
BETWEEN GROUPS AND CONFERENCES AND SEMINARS

Source of Variation	SS	df	MS	F	P
Between Groups	4.529	1	4.529	8.189	.005**
Between Conferences and Seminars	1.373	1	1.373	1.361	.246
Interaction	1.792	1	1.792	3.240	.075
Error	51.429	93	.553		
Total	59.223	96	8.247		

[a]Variable 47: Discuss test questions with students after grading.

**Significant at .01 level.

TABLE 40

SUMMARY OF ANALYSIS OF VARIANCE OF VARIABLE 54[a]
BETWEEN GROUPS AND CONFERENCES AND SEMINARS

Source of Variation	SS	df	MS	F	P
Between Groups	4.001	1	4.001	5.065	.027*
Between Conferences and Seminars	.396	1	.396	.501	.481
Interaction	.002	1	.002	.003	.791
Error	73.563	93	.791		
Total	77.962	96	5.190		

[a]Variable 54: Use models and representations in instruction of skills.

*Significant at .05 level.

TABLE 41

SUMMARY OF ANALYSIS OF VARIANCE OF VARIABLE 55[a]
BETWEEN GROUPS AND CONFERENCES AND SEMINARS

Source of Variation	SS	df	MS	F	P
Between Groups	4.007	1	4.007	5.065	.027*
Between Conferences and Seminars	.058	1	.058	.170	.681
Interaction	.031	1	.031	.092	.762
Error	31.527	93	.339		
Total	35.623	96	4.435		

[a]Variable 55: Make use of student's own experiences during class discussions.

*Significant at .05 level.

TABLE 42

SUMMARY OF ANALYSIS OF VARIANCE OF VARIABLE 59[a]
BETWEEN GROUPS AND CONFERENCES AND SEMINARS

Source of Variation	SS	df	MS	F	P
Between Groups	8.566	1	8.566	5.473	.021*
Between Conferences and Seminars	.000	1	.000	.000	.988
Interaction	.399	1	.399	.255	.615
Error	145.545	93	1.565		
Total	154.510	96	10.530		

[a]Variable 59: Require students to maintain a notebook.

*Significant at .05 level.

III. DISUCSSIONS OF FINDINGS

Presented in Table 43 is a summary of the occurrence of variables which were significantly different as a result of the tests of the sub-hypotheses. Only those variables which showed significance from one or more of the tests of the sub-hypotheses are included in this table. Occurrences of significant variables are shown by a (+) sign, and occurrences of non-significant variables are shown by a (0) sign. As indicated in Table 43 some variables were significant for the test of one sub-hypothesis alone, while other variables were significant for more than one of the tests. It was concluded that the single occurrences of significance resulted from the unique groupings of the population in the tests of the sub-hypotheses.

The tests of sub-hypothesis 1 and sub-hypothesis 2 involved a comparison of the responses of teachers to the educational practices and teaching techniques included within the survey instrument. These sub-hypotheses were advanced by more specific sub-hypotheses which related to such factors as vocational service areas in which teachers were employed, the number of years of experience in teaching disadvantaged students, courses taken related to teaching disadvantaged students, and conferences and seminars attended related to teaching disadvantaged students. As presented in Table 43, variables that showed significant differences from the tests of sub-hypothesis 1 and sub-hypothesis 2 were significant in at least one other test.

The test of sub-hypothesis 3 required that teachers be compared according to the vocational service area in which they were employed.

TABLE 43

SUMMARY OF EDUCATIONAL PRACTICES AND TEACHING TECHNIQUES SHOWING SIGNIFICANT DIFFERENCES

	Significance as Related to Sub-hypotheses				
Variable Number	Groups	Service Areas	Experience in Teaching	Courses	Conferences and Seminars
1	0	+	0	0	0
3	0	0	0	+	0
4	+	0	0	+	+
6	0	0	0	+	0
9	+	0	0	0	+
12	+	0	0	0	+
16	0	0	+	0	0
17	0	0	0	+	0
19	0	0	+	0	0
20	0	0	0	0	+
21	0	+	+	+	0
22	0	+	+	+	+
23	+	0	0	0	+
27	0	+	0	0	0
29	0	0	0	+	0
30	0	+	+	0	0
31	0	+	0	0	+
33	+	+	+	+	+
36	0	0	0	0	+

TABLE 43 (Continued)

Variable Number	Significance as Related to Sub-hypotheses				
	Groups	Service Areas	Experience in Teaching	Courses	Conferences and Seminars
37	0	+	0	0	0
38	0	+	0	0	0
39	0	+	+	0	0
41	+	+	+	+	+
42	0	+	+	0	0
43	0	+	+	0	0
44	+	0	0	+	+
45	0	+	0	+	0
46	0	0	+	0	0
47	+	+	0	+	+
53	0	+	+	0	0
54	+	0	0	0	+
55	+	0	0	+	+
56	0	0	+	0	0
58	0	+	+	+	0
59	+	+	0	+	+
60	0	+	+	+	0
61	0	+	0	0	0
62	0	+	0	0	0
64	0	+	+	0	0

+ = Significantly different variable.

0 = Non-significantly different variable.

Duncan Multiple Range Test, used in the interpretation of the data related to sub-hypothesis 3, confirmed this sub-hypothesis that differences in program objectives of the service areas included in the study would result in differences in the responses of teachers to the educational practices and teaching techniques listed in the survey instrument. Significant variables resulting from the test of sub-hypothesis 3 are shown in Table 43.

Sub-hypothesis 4 involved a different grouping of the population in that only teachers of programs for disadvantaged students were included in the test. Those variables which were significantly different as a result of the test of years of experience in teaching disadvantaged students are shown in Table 43. Duncan Multiple Range Test were employed to identify specific areas of differences as shown in the data resulting from the test of sub-hypothesis 4.

Significant variables resulting from the test of sub-hypothesis 5, which dealt with whether teachers had or had not taken courses related to teaching disadvantaged students, are shown in Table 43. The sub-hypothesis was confirmed that courses taken by teachers affected the responses of those teachers on the educational practices and teaching techniques listed in the survey instrument.

Sub-hypothesis 6 tested the affect of conferences and seminars on the responses of teachers who had attended these meetings, as compared to teachers who had not participated in these activities. It can be noted from Table 43 that those variables which were found to be significantly different between groups of teachers in sub-hypothesis 6 were also significantly different between groups of teachers in the tests of

sub-hypothesis 1 and sub-hypothesis 2. As the larger number of teachers of programs for disadvantaged students had attended conferences and seminars related to this subject, the similarity of these tests can be contributed to the similarity of the teachers involved in each of the tests.

CHAPTER IV

SUMMARY, CONCLUSIONS, AND RECOMMENDATIONS

I. SUMMARY

Chapter I stated the problem relative to what educational practices and teaching techniques were more important to secondary vocational education teachers as related to teaching disadvantaged students. The Significance of the Problem, Assumptions, Hypothesis, Limitations, Definition of Terms, Methods of Procedure, and Organization of the Study were also included in the first chapter.

A review of literature related to the problem under study was presented in Chapter II.

Chapter III presented the data which were required for the tests of the hypothesis as divided into six sub-hypotheses. This chapter also included the statistical analysis of data for the study. The statistical procedures involved the application of one and two-way analysis of variance and Duncan Multiple Range Test for determining significant differences.

Sub-hypothesis 1. There is a significant difference between ratings of importance given to educational practices by teachers of programs for disadvantaged students and teachers of programs for regular students. The sub-hypothesis was accepted because there were four variables in which a significant difference occurred between groups of teachers.

Sub-hypothesis 2. There is a significant difference between ratings of importance given to teaching techniques by teachers of programs for disadvantaged students and teachers of programs for regular students. The sub-hypothesis was accepted because there were six variables in which a significant difference occurred between groups of teachers.

Sub-hypothesis 3. There is a significant difference between ratings of importance of educational practices and teaching techniques according to the vocational service area in which teachers are employed. The tests of this sub-hypothesis identified 22 variables as being significantly different, resulting in the acceptance of the sub-hypothesis.

Sub-hypothesis 4. There is a significant difference between ratings of importance of educational practices and teaching techniques according to the number of years of experience in teaching in programs for disadvantaged students. As there were 16 variables significantly different between those teachers who had experience in teaching disadvantaged students, the sub-hypothesis was accepted.

Sub-hypothesis 5. There is a significant difference between ratings of importance of educational practices and teaching techniques according to the professional training of teachers related to teaching disadvantaged students. Though 16 variables were found to be significantly different, six of these variables were significant between groups of teachers. The sub-hypothesis was accepted because there were ten variables in which a significant difference resulted between teachers who had taken courses and teachers who had not taken courses.

Sub-hypothesis 6. There is a significant difference between ratings of importance of educational practices and teaching techniques according to the conferences and seminars which were attended by teachers related to teaching disadvantaged students. The test of this sub-hypothesis resulted in 15 variables being significantly different. As 11 variables were significantly different between groups of teachers, four variables were significant between teachers who had attended conferences and seminars and teachers who had not attended these meetings. The sub-hypothesis was accepted as a result of the significant differences found to exist between teachers who had attended and teachers who had not attended conferences and seminars.

II. CONCLUSIONS

The conclusions noted below are based upon the statistical results found in the study. They apply only to this study and should not be generalized to a larger population.

1. Teachers of programs for disadvantaged students considered the following educational practices to be less important in teaching than teachers of programs for regular students: work with students in out-of-school activities, use the school norm in assigning grades, and require good discipline in the classroom. Mean scores indicate that teachers of disadvantaged students considered involving students in setting the rules and regulations for the class more important than teachers of regular students. Teaching techniques rated significantly lower by teachers of disadvantaged students were: use role playing as

a teaching technique; ask many factual questions; make use of the chalkboard, overhead projector, and slide film projector; review tests with students after grading; use models and representations in the instruction of skills; use students' own experiences in class discussions; and require students to maintain a notebook.

It was concluded that teachers of programs for disadvantaged students employ educational practices and teaching techniques which are different from teachers of regular programs.

2. It was found that significant differences occurred between tested variables as a result of comparisons between vocational service areas as sub-divided into groups of teachers of programs for disadvantaged students and teachers of programs for regular students. Mean scores indicated that, generally, Vocational Improvement Program teachers rated variables significantly different from the other service areas even though differences occurred between the other groups. Other interpretations were difficult to make as the area of significance occurred between different groups on each significant variable.

It was concluded that the importance of specific educational practices and teaching techniques differs between vocational service areas to the extent that recommendations relative to teaching disadvantaged students should be adapted to specific service areas rather than to programs for disadvantaged students in general. The diversity of responses to significantly different variables indicated that some educational practices and teaching techniques were unique to specific vocational service areas.

3. Significant differences between variables were found to exist as a result of the test between years of experience of teachers in teaching

in programs for disadvantaged students. The distribution of mean scores showed that significant differences most often occurred between teachers with 0-1 years of experience in teaching disadvantaged students and the other groups, which were 1-2 years, 2-3 years, and 3-4 years of experience. Other interpretations were difficult to make as the area of significance occurred between different groups on each significant variable.

It was concluded that the attitudes of teachers toward certain educational practices and teaching techniques tended to change after one year of experience in teaching disadvantaged students. In addition, it was concluded that teachers tended to employ more traditional practices and techniques after one year of experience in teaching disadvantaged students.

4. It was found that significant differences occurred between groups of teachers tested on whether courses had or had not been taken which related to teaching disadvantaged students. Mean scores showed that teachers who had taken courses related to teaching disadvantaged students rated the following educational practices and teaching techniques higher than teachers who had not had these courses: counsel with students; plan a course of study in consultation with other teachers; develop teaching materials supplemental to texts or other references; select remedial materials and teaching techniques; correlate mathematics, science, English, etc., with vocational subjects; and make use of visual materials. It was also shown that teachers who had taken courses gave a lower rating to the use of the lecture method in teaching and in assigning homework.

It was concluded that courses related to teaching disadvantaged students did have impact on the responses to educational practices and

teaching techniques given by teachers.

5. Data presented relative to conferences and seminars attended by teachers indicated that teachers who had attended conferences and seminars rated the following practices and techniques higher than teachers who had not attended these meetings: correlate mathematics, science, English, etc., with vocational subjects and use simulated experiences in teaching. Other variables showing significant differences were similar to the test results for the test between teachers of programs for disadvantaged students and teachers of regular programs.

It was concluded that conferences and seminars had little impact on the responses given to educational practices and teaching techniques by teachers because of the similarity of this test and the test between groups of teachers.

6. When comparisons were made of the significant variables resulting from the tests for courses and for conferences and seminars, it was found that a greater number of variables were significantly different between those teachers who had or had not taken courses than the number of significant variables between teachers who had or had not attended conferences and seminars. It was concluded that the influence of courses was greater on the teachers involved in the study than the influence of conferences and seminars.

III. RECOMMENDATIONS

In view of the results of this study, the following recommendations are offered:

1. More extensive study of educational practices and teaching techniques employed in teaching disadvantaged students might be conducted

dealing with a larger number of observations than was included in this study.

2. Limiting the study to one vocational service area might be advantageous in more extensive study.

3. The characteristics of students, disadvantaged and regular, might be explored as to how they relate to the success teachers may expect by employing specific practices and techniques.

4. The content of specific courses and conferences and seminars related to teaching disadvantaged students might be studied in relation to the attitudes of teachers toward employment of specific teaching procedures.

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APPENDIXES

APPENDIX A

Date: February 15, 1971

TO: Selected Secondary Teachers in Tennessee

Mr. Richard Lambert, a vocational teacher at Rogersville High School in Hawkins County, is writing a thesis to compare educational practices and teaching techniques which are used by regular vocational teachers and teachers of disadvantaged students. You have been selected to participate in this study. Your cooperation in completing the information blank and attitudinal inventory will be appreciated.

We know the importance of trying to meet the needs of disadvantaged students. It is anticipated that the findings of Mr. Lambert's study will be of value in helping to devise more effective programs for these students. A summary of the significant findings of the study will be available for distribution to any interested teachers.

Any assistance you can give Mr. Lambert to help him complete his study in order to graduate in August 1971 will be greatly appreciated.

Sincerely,

John D. Todd,
Assistant Professor.

JDT:sm

APPENDIX B

February 15, 1971

Enclosed is a survey form I plan to use in developing a thesis as a part of my graduate program at the University of Tennessee. The purpose of the study is to identify instructional methods that may be used successfully when teaching vocational students.

I am asking that you complete the enclosed form and return Sections I, II, and III, in the envelope provided. May I remind you that there are no right or wrong answers. Please respond to the statements in relation to your experiences and the attitudes you hold toward the vocational students you are presently teaching.

You may indicate on the survey form if you wish to be provided with a summary of the findings. Thank you for your assistance.

Sincerely yours,

Richard H. Lambert
Teacher of Vocational Agriculture

RHL/jaa

APPENDIX C

INVENTORY OF INSTRUCTIONAL METHODS

DIRECTIONS

Following are lists entitled General Information, Inventory of Selected Educational Practices, and Inventory of Selected Teaching Techniques. Please complete the section on general information as indicated. The second and third sections include practices and techniques often used by teachers. Please indicate the degree of importance which you consider each practice and technique in teaching your students. The following scale should be used for assignment of the ratings:

1. The use of this practice or technique is of no importance.
2. The use of this practice or technique is of slight importance.
3. The use of this practice or technique is of moderate importance.
4. The use of this practice or technique is of considerable importance.
5. The use of this practice or technique is of major importance.

Do not take too much time in deciding about any one item. There are no right or wrong answers. I am primarily concerned with how you feel about the importance of each of the listed items.

Below is an example:

1. Use role playing as a teaching technique 1 2 3 (4) 5

This person, in marking the "4" rating, considered this teaching technique to be of considerable importance in teaching his students.

Circle the answer which comes closest to representing your feelings. Should the scale not represent your exact feeling, pick one of the choices which comes closest to your true feelings. Please do not leave out any items.

SECTION I

General Information

1. Vocational Service Vo Ag _____ T&I _____ Home Econ. _____ DE _____
   VOE _____ VIP _____ Other _____
   (Specify)

2. Sex _____

3. Areas of teaching experience (by number of years experience)
   Academic _____ Vocational _____ Disadvantaged _____

4. Have you received credit in specialized courses for teaching the disadvantaged? Yes _____ No _____
   If yes, circle the approximate number of courses.
   1 2 3 4 5 6 6+

5. Have you attended non-credit conferences or seminars related to teaching the disadvantaged? Yes _____ No _____
   If yes, circle the approximate number of conferences or seminars.
   1 2 3 4 5 6 6+

SECTION II

Inventory of Selected Educational Practices

What level of importance would you consider each of the following practices in teaching your students:

	None	Slight	Mod.	Cons.	Maj.
1. Make visits to students' home other than supervisory visits	1	2	3	4	5
2. Hold conferences with the parents or guardians of students	1	2	3	4	5
3. Counsel with students	1	2	3	4	5
4. Work with students in out-of-school activities (clubs)	1	2	3	4	5
5. Plan a course of study with student assistance	1	2	3	4	5
6. Plan a course of study for students in consultation with other teachers	1	2	3	4	5

	None	Slight	Mod.	Cons.	Maj.
7. Assign students to a training center for occupational experience	1	2	3	4	5
8. Use students suggestions in developing the objectives for each lesson	1	2	3	4	5
9. Involve students in setting the rules and regulations for the class	1	2	3	4	5
10. Use school facilities for occupational experience	1	2	3	4	5
11. Assign grades to students according to their individual progress	1	2	3	4	5
12. Assign grades to students according to the school norm (e.g. A 100-95 B 94-85)	1	2	3	4	5
13. Make periodic reports, other than numerical or letter grades, to parents relative to student's progress	1	2	3	4	5
14. Consult with other teachers about the progress of students	1	2	3	4	5
15. Consult with other teachers about the learning difficulties of students	1	2	3	4	5
16. Diagnose learning difficulties when they occur	1	2	3	4	5
17. Develop teaching materials supplemental to the texts or other references	1	2	3	4	5
18. Interpret scores from standardized testing	1	2	3	4	5
19. Modify and adapt the existing curriculum to reach the objectives of the program	1	2	3	4	5
20. Experiment with new materials, techniques, and teaching procedures	1	2	3	4	5
21. Select remedial materials and teaching techniques	1	2	3	4	5

	None	Slight	Mod.	Cons.	Maj.
22. Correlate mathematics, science, English, etc., with vocational subjects	1	2	3	4	5
23. Require good classroom discipline as a condition for learning	1	2	3	4	5
24. Be highly permissive with students in the classroom	1	2	3	4	5
25. Know and understand the language of the student	1	2	3	4	5
26. Use para-professional personnel in teaching (e.g. teacher-aides)	1	2	3	4	5

SECTION III

Inventory of Selected Teaching Techniques

What level of importance would you consider each of the following techniques in teaching your students:

	None	Slight	Mod.	Cons.	Maj.
27. Involve students in teaching other students	1	2	3	4	5
28. Use the problem solving approach in teaching	1	2	3	4	5
29. Make use of the lecture method in teaching	1	2	3	4	5
30. Use demonstrations in teaching	1	2	3	4	5
31. Utilize "individualized" instruction in teaching	1	2	3	4	5
32. Utilize "small group" instruction in teaching	1	2	3	4	5
33. Use role playing as a teaching technique	1	2	3	4	5
34. Use a team teaching approach to teaching	1	2	3	4	5
35. Involve resource people in teaching	1	2	3	4	5

	None	Slight	Mod.	Cons.	Maj.
36. Make use of field trips in teaching	1	2	3	4	5
37. Use programmed instruction in teaching	1	2	3	4	5
38. Use simulated experiences in teaching	1	2	3	4	5
39. Teach mainly for manipulative skills	1	2	3	4	5
40. Ask many thought provoking questions	1	2	3	4	5
41. Ask many factual questions	1	2	3	4	5
42. Teach for knowledge of facts	1	2	3	4	5
43. Teach for understanding of knowledge	1	2	3	4	5
44. Make use of chalkboard, overhead projector, slide film projector, etc.	1	2	3	4	5
45. Make use of movies, record players, reading machines, television, etc.	1	2	3	4	5
46. Use displays and exhibits in teaching	1	2	3	4	5
47. Discuss test questions with students after grading	1	2	3	4	5
48. Review materials with students before testing (review for examinations)	1	2	3	4	5
49. Use student constructed projects as aids to teaching	1	2	3	4	5
50. Use word lists in teaching lessons which are relevant to employment in a specific occupation	1	2	3	4	5
51. Relate instruction to employment in a group of occupations	1	2	3	4	5
52. Relate instruction to employment in specific occupation	1	2	3	4	5

	None	Slight	Mod.	Cons.	Maj.
53. Use actual tools, equipment, and machines as teaching aids in development of skills	1	2	3	4	5
54. Use models and representations in instruction of skills	1	2	3	4	5
55. Make use of students' own experiences during class discussions	1	2	3	4	5
56. Use procedures inducing reinforcement from previous lessons	1	2	3	4	5
57. Use texts as reference books	1	2	3	4	5
58. Assign homework	1	2	3	4	5
59. Require students to maintain a notebook	1	2	3	4	5
60. Encourage students to use their own initiative in planning for occupational experiences	1	2	3	4	5
61. Relate current news events to class instruction	1	2	3	4	5
62. Continually remind students of their academic deficiencies	1	2	3	4	5
63. Relate school success with future employment	1	2	3	4	5
64. Use student progress charts	1	2	3	4	5

APPENDIX D

March 15, 1971

I would like to take an additional moment of your time to remind you of the survey form on educational practices and teaching techniques that I mailed to you a few days ago.

If you have returned the survey form by this date, I would like to extend my thanks for your assistance. Otherwise, I will be most appreciative of your cooperation.

Thank you.

Sincerely,

Richard H. Lambert
Teacher of Vocational Agriculture

RHL/jaa

VITA

Richard H. Lambert was born on March 15, 1943, in Kingsport, Tennessee, to W. Dillard Lambert and Margaret Cox Lambert. He received his elementary and secondary education in the Public Schools of Sullivan County. He was married to the former Connie M. Bullock in 1967.

He was graduated from Tennessee Technological University, Cookeville, Tennessee, with a Bachelor of Science Degree in Agronomy in 1965. He entered the Graduate School of the University of Tennessee in 1965, completing teacher certification requirements in 1969. From 1965 to the present time he has been employed as a vocational agriculture teacher at Rogersville High School, Rogersville, Tennessee.