

THE ADEQUACY OF A COURSE IN
VOCATIONAL EDUCATION FOR
HANDICAPPED STUDENTS FOR SPECIAL
EDUCATION UNDERGRADUATE MAJORS

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This is to certify that the

thesis entitled

THE ADEQUACY OF A COURSE IN
VOCATIONAL EDUCATION FOR HANDICAPPED STUDENTS
FOR SPECIAL EDUCATION UNDERGRADUATE MAJORS

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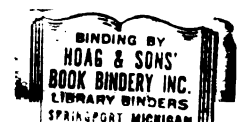
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ABSTRACT

THE ADEQUACY OF A COURSE IN VOCATIONAL EDUCATION FOR HANDICAPPED STUDENTS FOR SPECIAL EDUCATION UNDERGRADUATE MAJORS

By

Virginia B. Kozlowski

Federal and state legislation has mandated that handicapped students be given the opportunity to participate in vocational education programs at the secondary level. Teacher education programs in colleges and universities for the most part, have not provided for the preparation of teachers to work with these programs.

The purpose of this study was to determine whether a new course entitled "Vocational Education for Handicapped Students" which was specifically developed for special education undergraduate majors at Michigan State University, would adequately prepare them to begin serving handicapped students in vocational programs at the secondary level.

Both formative and summative procedures were used to evaluate the new course. The formative evaluation procedure was a detailed description of the extent to which the objectives and activities of the course accomplished what was intended. The summative evaluation procedure consisted of measuring the increase in student knowledge on a pre- and post-test instrument, and a measure of the change in attitudes toward vocational education for handicapped students, using a pre- and post-questionnaire.

Four experts in the field of vocational education for handicapped students in Michigan validated the content of the course, and as represented on the test instrument. Four people working in the field in special needs related programs rated a set of 20 test instruments according to the scoring manual developed. A high measure of inter-rater reliability was found.

A pilot test group of 8 special education undergraduate majors was used winter term 1976 to help determine which course objectives and activities were most effective for implementation for the experimental class. Fourteen special education undergraduate majors were enrolled in the experimental class spring term, 1976.

The pre- and post-test questions for the experimental class consisted of seven course objectives deemed to be of highest priority. A one way analysis of variance test was used to determine if there were any significant differences in total mean score between the pre- and post-test for the MSU class as well as for the scores for each of the seven test questions.

The total mean score for the 14 MSU students on both the pre- and post-test as well as the mean scores for each of the seven test questions, were then compared with responses from:

- (a) 21 special education teachers working in Vocational Special Needs Funded Projects at the secondary level.
- (b) 13 special education teachers at the elementary level not working in vocational training programs.
- (c) 22 special education teachers at the secondary level not working in vocational training programs.

The Newman-Keuls Post-Hoc Procedure was used to determine where the differences in mean scores existed among the groups in the analysis. The Procedure was used for the total mean score on the test as well as for each of the seven test questions.

The results of the study were as follows:

1. A ten week undergraduate course was adequate for the special education undergraduate majors to begin serving handicapped students in vocational training programs at the secondary level. Formative and summative evaluation procedures produced evidence that the undergraduate majors gained the ability to plan, implement, and evaluate vocational training programs for handicapped students.
2. The competency level of the special education undergraduate majors, as indicated by the post-test instrument, was significantly greater than that of special education teachers working with vocational education special needs funded projects as well as that of special education teachers at both the elementary and secondary levels in local school districts who were not working directly with vocational training programs.
3. The attitudes of the MSU undergraduate majors were significantly more positive towards vocational training programs for handicapped students, at the end of the course as compared to the beginning, as measured by the attitude questionnaire.

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CHAPTER I

INTERPRETING THE TASK

The Problem

One of the problems in institutions of higher education is keeping up with the educational and societal needs as expressed by such groups as local educational agencies, teachers in the field, parents, citizen advocate groups, and by the students themselves. There have been civil rights suits for the right to education for the handicapped and the right to earn a living.

There has been federal legislation, namely the Vocational Education Amendments of 1968, mandating that handicapped students be given the opportunity to participate in vocational education programs at the secondary level. In Michigan, the Mandatory Special Education Law states that special education students must have as a minimum before they can graduate from high school, the following: (1) personal adjustment training, (2) pre-vocational training, and (3) vocational training.

The Education for All Handicapped Children Act, enacted by the U.S. Congress in November of 1975, provides for a free and appropriate education for every handicapped child. As a result of this legislation, greater levels of federal support will be available to extend vocational education programs and services to all handicapped individuals for whom it is appropriate, when the law is implemented in the 1977-78 school year. (Phelps and Halloran, 1976)

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Discrimination against the handicapped is prohibited by law in Section 504 of the Rehabilitation Act of 1963. Under the law, no otherwise qualified handicapped individual can be excluded from participation in any program or activity receiving federal financial assistance, solely by reason of his handicap. The law applies to every public or private agency or business receiving federal dollars, including public school systems.

Special education and vocational education teachers and administrators find themselves working in schools which are attempting to meet the requirements of this legislation but have had little or no training or experience on how to provide these new services. (The services are new in terms of educational technology being developed for the special needs area but not exactly new when one considers the Vocational Act of 1963 which spoke to integration of the handicapped into vocational education programs.)

The new programs require the cooperation of vocational education, special education, and vocational rehabilitation personnel at the local level. Teacher education programs in colleges and universities for the most part, have not provided for the preparation of teachers with competency in vocational education, special education, and vocational rehabilitation. Most of the teachers presently working with handicapped students at the secondary level have either been trained in special education at the elementary level or have been trained as vocational subject matter specialists with little or no training in special education.

The specific problem that was being addressed in this study was that the special education majors at MSU had little in their curriculum which prepared them to work at the secondary level or to serve handicapped students in vocational training programs.

Background

The Vocational Education Amendments of 1968 stipulated that ten percent of each state's basic grant for vocational education (Part B) be used exclusively to finance programs "for handicapped persons who because of their handicapping condition cannot succeed in the regular vocational education program without special education assistance or who require a modified educational program." As a result of these Amendments, states have increased their appropriations for education of the handicapped on the average of about 60 percent. (Walsh et al, 1974)

The expected coordination between Vocational Education, Special Education, and Vocational Rehabilitation Services was clearly intended by Congress and is specified in the Senate Report on the Vocational Education Amendments of 1968 (Gallagher, 1969). The following statement appears in the report:

That all state vocational education agencies be required to develop jointly with the state special education agency a comprehensive plan providing vocational education for the handicapped and that this plan be coordinated with the general state vocational education plan (Senate Report No. 1386, p. 15).

Cooperation between vocational education and special education is forced at the local level by legislation requiring the participation of special education personnel in the identification and classification of handicapped students (Walsh et al, 1974).

In a study of vocational education programs for the handicapped under Part B of the 1968 Vocational Education Amendments, Walsh felt that the most important finding of the study was that Part B set-aside has resulted in vocational education programs for the handicapped that would never have occurred had there been no set-aside enacted into law. Walsh found that most of the set-asides were in fact being used to provide direct services for handicapped students.

Further, Walsh stated that right-to-education suits, universal education legislation, and the Part B set-aside program have contributed to rising expectations similar to those experienced during the civil rights movements of the last decade. To the date of Walsh's report, 36 right-to-education lawsuits had been filed and pending or concluded in 25 states.

Citizen advocate groups for the rights of the handicapped have supported the vocational development of the handicapped. The 1974 Annual Report of the National Advisory Committee on the Handicapped stated as one of its priority recommendations:

We affirm that every handicapped individual has a right to be prepared by the public educational system to enter the world of work. We, therefore, recommend that programs for the handicapped be instituted in all appropriate vocational education facilities supported under the Vocational Education Act.

In Michigan, implementation of a model special education delivery system is based upon the assumption that special education teachers have or are willing to obtain the skills necessary to teach specific vocational subject matter such as industrial arts or health. In vocational programs at the secondary level, the special education teacher is responsible for supportive services, material adaptations or related instruction (Baxter et al, 1975).

Review of Literature on Need for Teacher Preparation

The review of literature on the need for teacher preparation for those who work or will be working with handicapped students in vocational education programs is divided into the following eight statements of need:

1. The Vocational Education/Special Education/Vocational Rehabilitation marriage by law should be reflected in the university pre-service and inservice program.
2. There have been some national surveys which show evidence of the need for teacher preparation for those working with handicapped students in vocational education programs.
3. Special education teachers are trained primarily for the elementary level. Hence, there is a lack of training and preparation of the special education teacher at the secondary level, which includes the training of work-study coordinators.
4. Certification problems or lack of certification exists for special education teachers and vocational education teachers serving handicapped students at the secondary level.

5. A new and different kind of competency is required for special education teachers at the secondary level. Some experts in the field have ventured some suggestions on what this competency should consist of.
6. There is a lack of preparation of vocational education personnel serving handicapped students in vocational programs as well as that of special education personnel.
7. There is also lack of preparation of the Special Needs Coordinator who may be either vocational education certified or special education certified, or in a few cases, certified in both areas.
8. Both vocational education and special education personnel see a need for training in order to serve handicapped students in vocational education programs adequately.

The Vocational Education/Special Education/Vocational Rehabilitation marriage by law should be reflected in the university pre-service and inservice program.

Vogler (1975) spoke to the fact that in the past, vocational education has provided minimal services to the handicapped student and special education has often ignored the vocational aspects of the special education student. Vocational education and special education have been united in Michigan via the Mandatory Special Education Act (PA 198, Section 340.10).

The purpose of the present study is supported by Vogler:

The success or failure of this partnership will depend upon the quality of the personnel who deliver programs and services. No doubt inservice programs provided by the Michigan Department of Education and various universities in the state will contribute toward the improvement in quality of personnel. However, inservice is primarily a cure, not a prevention. The prevention approach must be provided through cooperative pre-service programs.

Vocational Education, Special Education, and Vocational Rehabilitation are expected to cooperate for effective service at the community level and therefore, Young (1971) questions why joint efforts are not undertaken at the college or university level. He suggested that students in pre-service programs be given training and exposure in all three fields through experiences conducted jointly by the college faculty.

Young called on universities to become familiar with vocational education programs for the handicapped, as they are developed at the local level, so that they will be training educational personnel both in special education as well as in vocational education who are able to work in a cooperative and team approach.

There have been some national surveys which show evidence of the need for teacher preparation for those working with handicapped students in vocational training programs.

Thirty-three state special needs supervisors and/or universities responded in a 1975 survey to the open-ended question: "What are the three pressing problems or needs in teacher or supervisor preparation or training for special needs personnel?" Over 50 percent of the respondents indicated the need for increased teacher education, both at the pre-service and inservice level. Curriculum development was also frequently mentioned (Sathre, 1975).

Sheppard (1975) administered a survey to 108 vocational administrators, teachers, and counselors working with the disadvantaged and/or handicapped. It was concluded that the majority had no beneficial experiences and did not participate in any worthwhile programs which prepared them for their present positions.

Thirty percent of the 107 respondents filled out the list of programs and/or experiences which best prepared them for their present position of working with the disadvantaged and/or handicapped. Half of these respondents gave university courses and work experiences a rank of number one towards their preparation. Items ranked number one by the remaining half of the 30 percent responding included: intern teaching experience in disadvantaged and/or handicapped programs; own readings; inservice programs related to disadvantaged and/or handicapped sponsored by the local school system; inservice program sponsored by the state department of education; university courses in Special Education; and Consultants.

As a result of a national study, there has been at least one teacher training institution which has developed a model for curriculum development to prepare teachers of Industrial Education to work with disadvantaged and handicapped students at the secondary level. Evidence from a series of special meetings, interviews, and results from a national survey of industrial education teacher training institutions indicated a critical need exists for pre-service programs through which personnel can be trained to fill the existing positions and others which must be created at the secondary level (Kruppa, 1973).

Special Education teachers are trained primarily for the elementary level. Hence, there is a lack of training and preparation of the special education teacher at the secondary level, which includes the training of work-study coordinators.

Kruppa (1973) in his study noted that colleges and universities with teacher preparation programs, have not provided for the preparation of teachers with knowledge in both special education and vocational education. Kruppa went on to say that specially designed programs for serving handicapped students at the secondary level have been almost non-existent in the past because most teachers in special education have been prepared to work at the elementary level.

Kruppa speaks to the issue well, stating that the importance of training special education teachers to know about the world of work comes from the realization that one of the needs of handicapped students is that of becoming partially or totally self-supporting. There are fewer unskilled jobs available today and our programs for special education students should be examined in light of this.

Brolin (1972) summarized previous literature on this topic by saying that:

Because most special education teachers are trained to teach academics, they naturally tend to emphasize them and minimize the important vocational aspects.

In addition, Brolin stated that schools attempting to utilize a work-study approach often find themselves without teachers who are experienced or trained in this area.

Brolin in his studies also supported the fact that a secondary special education teacher may be expected to provide for all of the students' school related needs, from remedial reading to vocational evaluation and follow-up. He claimed that universities with their traditional teacher preparation approach offer few courses that can prepare teachers to be effective in vocationally-oriented high school programs.

Clark and Oliverson (1973) spoke to the lack of specific certification requirements which explicitly set forth competencies or requirements that are unique to secondary special education teachers. Clark and Oliverson recognized that in a large number of high school programs there are not enough personnel available to warrant role differentiation between classroom teaching and work-study coordination functions, thus resulting in a teacher-coordinator role described by Younie and Clark (1969). There are many secondary level special education teachers who are charged with the sole responsibility of accomplishing all or most of the following tasks in addition to teaching: teacher counselor, pre-vocational coordinator, vocational counselor, vocational adjustment coordinator, work adjustment coordinator, and pre-vocational counselor.

Sparks and Younie (1969) claimed that secondary teachers in work-study programs have had to take certification courses in special education that were exclusively oriented to developing elementary teaching skills. These writers felt that it could be that students in special class placement at the secondary level do not demonstrate superior academic gains because of this elementary preparation of secondary level special class

teachers. Perhaps they are not equipped to carry the students beyond preconceived levels of achievement.

Henderson (1971) found that state leadership personnel viewed the work-study coordinator as primarily responsible for work evaluations, use of vocational information, and individual and/or group counseling. He also found that almost half of the states indicated that the requirements for work-study coordinators were identical to the special education teacher requirements. In one-third of the states there were no specific special education requirements for work-study coordinators.

Ross (1971) interviewed vocational educators and special educators at the federal, state, and local levels. Each interviewee expressed the feeling that work experience programs at the high school level without a background of job orientation and skill training for the youth was a deterrant for good community relations for programs for youth with special needs. Again, the need for pre-service teacher training was demonstrated to achieve community wide acceptance of handicapped youth.

Contrucci (1971) also spoke to the problem of taking elementary special education teachers, who are excellent teachers, and putting them in the secondary classroom where they don't have the tools for the job. He claimed that we are asking work-study teachers to be administrators, yet we don't teach them to be organizational people - to work with the community, school, counseling departments, and parent organizations. And we can, Contrucci said, go to others outside education to train our teachers.

Certification problems or lack of certification exists for special education teachers and vocational education teachers serving handicapped students at the secondary level.

Various approaches for certification have been suggested ranging from some type of dual certification to a new kind of special certification for those working with the handicapped at the secondary level. Sparks and Younie (1969) felt it would be wiser to begin educating secondary teachers to be both subject matter specialists and disability specialists. As a conclusion of his dissertation, Ross (1971) stated that

While current certification regulations seem adequate for both traditional vocational and special education teachers, the broad area of vocational education for youth with special needs may require a new category of teachers.

A new and different kind of competency is required for special education teachers at the secondary level. Some experts in the field have ventured some suggestions on what this competency should consist of.

In Brolin's study (1972) in the state of Wisconsin, 205 special education teachers ranked teacher competencies in order of importance. Of the seven ranked "very important" five were in the Occupational Information and Curriculum area. These five were: Work Adjustment, Job Seeking, Job Tryouts, Job Placement and Vocational Evaluation. The other two ranked very important - Personal Care and Socially Acceptable behavior - are very closely related to occupational success. The teachers felt that someone other than the traditional special education teacher should primarily provide many of these competencies, but in practice they usually must provide these occupational experiences themselves.

The teachers in Brolin's study said they were inadequately prepared and experienced to teach their students about the skills needed for specific jobs, industrial approaches and employer-employee relationships. The majority of the teachers had no training in vocational education and vocational rehabilitation, the two areas essential for competency in offering a curriculum on Occupational Information and Preparation.

Brolin claimed that special education teachers at the secondary level must receive training in vocational education and vocational rehabilitation if they are to adequately do vocational evaluation, work adjustment, job placement, and prepare their students for independent living skills. Competency in these areas would prepare teachers for the variety of job tasks that exist.

Brolin (1972) directed a research project, the end result of which was a model teacher education curriculum for university students in the area of mental impairment at the University of Wisconsin - Stout. The basis for the course selection and experiences provided for the students in the bachelor's level teacher training program, was a research project and development of a curriculum for mentally impaired students at the high school level.

Though the curriculum at Stout was developed for the mentally impaired disability area, the vocational and pre-vocational aspects have applicability to all disability areas. This teacher training curriculum is also supportive of career education concepts.

Below is an outline of the competencies teachers from the new training program were expected to acquire (Project Report # 2, p. 42):

- A. Develop, teach, and evaluate an individualized curriculum consisting of the following:
 - 1) Social and vocationally related academics (communications, mathematics, social science, driver's education)
 - 2) Remedial academics
 - 3) Instruction in work habits development, work skills, manual abilities, activities of daily living (cooking, sewing, managing a home, purchasing, raising a family, leisure activities, civic responsibilities)
 - 4) Vocational evaluation procedures and techniques (interests and aptitude tests, job samples, work tasks, situational assessments, on-the-job evaluation)
 - 5) Behavior modification and other adjustment approaches. Devise a learning (or engineered) classroom setting using psychological and skill training techniques to improve performance and learning.
 - 6) Vocational training and skill development experiences (industrial arts, homemaking)
 - 7) School and community work experience
- B. Coordinate the special education program with:
 - 1) Regular classroom teachers
 - 2) Vocational Rehabilitation
 - 3) Employment Service

- 4) Social Services
- 5) Sheltered Workshops
- 6) Industry and other employment sources
- C. Analyze the employment opportunities available for special education students and devise a plan for assisting students in securing employment utilizing:
 - 1) Dictionary of Occupational Titles, Guide to Jobs for the Mentally Retarded, Minnesota Occupational Adjustment Patterns.
 - 2) Manpower Reports
 - 3) Employment Service Information
 - 4) Community surveys
- D. Write vocational evaluation reports and recommendations
- E. Conduct follow-up activities on former students and provide assistance when necessary
- F. Conduct public relations activities
- G. Recognize and identify organizations which can assist the retarded

In a previous study Younie and Clark (1969) listed the following competencies as essential or highly desirable for secondary teachers of the retarded: employment experience, knowledge of the academic demands of the jobs typically performed by the mentally retarded, competency in vocational diagnosis and remediation, and willingness to expand the classroom into the community. These competencies are needed by teachers of other categories of handicapped students as well.

There is a lack of preparation of vocational education personnel serving handicapped students in vocational programs as well as that of special education personnel.

Clark and Oliverson (1973) spoke to the lack of preparation of vocational education teachers. With new programs developed in vocational education for students with special needs, vocational education teachers have been pressed into service to teach without adequate preparation for the specific needs and problems of students with handicaps.

A frequently mentioned problem in a study directed by Walsh (1974) was the lack of regular vocational education staff sensitivity to and skill in dealing with the problems of the handicapped. Several administrators believed that there must be an increase in staff training if the widespread use of integrated programming was to become a reality. Because of the few persons trained in both special education and vocational education, a major recommendation in the study was the need for undergraduate and graduate teacher education programs which would produce individuals qualified in both fields. Walsh also recommended that both types of programs require internships in Part B (Vocational Education Amendments of 1968) projects.

There is also lack of preparation of the Special Needs Coordinator who may be either vocational education certified or special education certified.

Weatherman and Krantz (1975) spoke to the expansion of Vocational Education programs serving handicapped and disadvantaged students with the resulting increase of managerial positions at the local level throughout the country. With this expansion and since the passage of

the 1968 Vocational Education Amendments, there still is no known pre-service training program or comprehensive inservice training program for those who must function in these managerial positions.

The report by Weatherman and Krantz also cited the need of the joint use of Vocational Education, Special Education, and Vocational Rehabilitation resources. While it is rare to find an administrator involved in special needs programming with adequate background in the operation of the three agencies, each agency represents a teachable core discipline. In light of the absence of an established professional tradition and of the fact special needs programming in vocational education is still in its formative years, the report recommended training opportunities be provided.

Young (1971) also noted that one level where pre-service training has been generally the weakest is in supervision. The author of the present study feels that the competencies suggested for special education teachers are partly the competencies needed by those in managerial positions.

Both vocational education and special education personnel see a need for training in order to serve handicapped students in vocational education programs adequately.

A major conclusion drawn by Ross (1971) in his study was that both special educators and vocational educators see a need for providing vocational training programs for youth with special needs under the auspices of vocational education which would not be stigmatized by any segregation of services offered to these youth. If special education

teachers are expected to do the job of vocational education alone or if vocational education teachers are expected to do the job of educating the youth with special needs alone, there would never be enough resources or educational sophistication to educate the relatively large number of students who need modified vocational education programs.

Application to Present Study

The review of literature supports the premise that there is a gap between the existing programs in vocational education for handicapped students at the local level mandated by state and federal legislation, and the preparation of personnel at the pre-service level to fulfill the mandate successfully. The curriculum developed at the University of Wisconsin - Stout (Brolin, 1972) is the only known attempt to provide pre-service training for special education teachers at the secondary level, and it is designed to prepare teachers of the mentally impaired. Various universities have attempted dual certification programs in vocational education and special education. There is no known university course or curriculum at the pre-service level to prepare special education teachers of all disability areas to work in local programs meeting the federal and state mandates.

The present study attempted to bridge the gap in part with the development, implementation and evaluation of a new course for special education undergraduate majors in all disability areas at Michigan State University. The course was designed to demonstrate the functions of Vocational Education, Special Education, and Vocational Rehabilitation

in a cooperative approach in serving handicapped students in vocational training programs. The course was also designed to project some curriculum development ideas appropriate for handicapped students at the secondary level.

Purpose of the Study

The purpose of this study was to determine whether a new course specifically developed for special education undergraduate majors at Michigan State University adequately prepared them to begin serving handicapped students in vocational programs at the secondary level. The ultimate mission of the new course was to implement in part, the national mandate presented in the Vocational Education Act of 1963 and the Amendments of 1968 and 1972.

Although there is a need for vocational education personnel to be trained at the pre-service level as well, this study was an evaluation of the development and implementation of a ten week course for special education undergraduate majors only.

Limitations of the Study

The content of the new course was arrived at informally through interviews with leaders in the field and through a review of the literature. A pilot group was used only to test instructional procedures. No formal survey was undertaken to determine the course content.

The conclusions of the study are limited to the MSU class. This evaluation plan does not represent the final evaluation of the course.

The course will be reexamined when it is taught again the next school year. Further evaluation beyond this study will answer questions such as what affect the course will have on other courses in the curriculum, and whether there are other sources from which the undergraduate majors can obtain the information in the course.

CHAPTER II

EVALUATION PLAN AND PROCEDURE

Description of Participants

There are approximately 250 juniors and seniors majoring in special education at Michigan State University. The group used in this study were 14 juniors and seniors who volunteered to enroll in the course "Vocational Education for the Handicapped" primarily because of an interest in teaching at the secondary level.

One comparison group was drawn from special education teachers who were working directly with the 85 vocational education special needs funded projects in Michigan. There is no listing of the exact number of special education teachers working with these funded projects. This group is referred to as "special education teachers working in vocational training programs" throughout this study. A group of 21 teachers certified to teach special education who had part-time or full time responsibility in one or more of the following roles in a vocational education program at the secondary level was used:

- 1) teacher of a special class in vocational education.
- 2) teacher and counselor of supportive academic and personal/social skills related to the vocational training area. The vocational training area is within a regular or modified vocational education program.
- 3) work-study coordinator for special education students.

A second comparison group was drawn from special education teachers who were not working directly with a vocational training program. There are approximately 5600 special education teachers in the state of Michigan. A group of 35 teachers certified to teach special education was used. The responsibility of these teachers may have included the teaching of pre-vocational skills but they had no responsibility with the vocational training program at the secondary level. The three groups used in this study are summarized in Table 1.

Definition of Terms

Vocational Education Program: Vocational education means vocational or technical training or retraining which is given in schools or classes, including field or laboratory work incidental thereto, under public supervision and control, and is conducted as part of a program designed to fit individuals for gainful employment as semi-skilled or skilled workers or technicians in recognized occupations, but excluding any program to fit individuals for employment in occupations which the superintendent of public instruction determines, and specifies to be generally considered professional or as requiring a baccalaureate or higher degree. The term includes vocational guidance and counseling in connection with the training, instruction related to occupations for which the student is being trained or necessary for him to benefit from training, and the acquisition and maintenance and repair of instructional supplies, teaching aids and equipment, and construction or initial equipment of buildings and the acquisition or rental of land. (Section 340.291 a(i) of PA 198 of 1971)

TABLE 1

Description of Participants Consisting of MSU
Special Education Undergraduate Majors and Comparison Groups
of Special Education Teachers in the Field

Group	Description
1. MSU class n=14	juniors and seniors interested in teaching special education at the secondary level
2. Special education teachers working in voc. ed. special needs funded pro- jects n=21	teacher of special class in vocational education and/or teacher-counselor with support role in academic and personal/ social skills related to the vocational training area, and/or work-study coordinator
3. Special education teachers not work- ing with vocational training programs at secondary level n=35	no responsibility with vocational training program at the secondary level; may be responsible for teaching pre-vocational skills

Regular Vocational Education Program for Special Needs Students: Students receive non-instructional special education services such as speech therapy and special materials such as talking books.

Modified Vocational Education Program: Regular vocational education programs are altered to accommodate special education students who could not otherwise be placed in the program. Special materials and added support personnel such as special education teachers, counselors, and paraprofessionals are examples of a modified program.

Work-Study Coordinator: Coordinates on-the-job training for special education students with related counseling and follow-up services. Students must have completed vocational training or be within one year of completing school.

Competency-Based Instruction: Competency-based instruction as used in this study means opportunity to practice the behavior or competency on which tested. The achievement of the competency is determined through a paper and pencil test.

Evaluation Plan

The evaluation of the new course consisted of making an educational judgment as to whether the course achieved what was intended; and determining whether the special education undergraduate majors gained the competency needed to work in vocational education programs serving handicapped students, as compared to special education teachers already working in existing vocational programs for handicapped students at the secondary level.

The terminal outcome of the evaluation was to determine the overall course effectiveness on student achievement as measured by scores on a summative instrument. The evaluation also included procedures to determine which enabling objectives of the course were prerequisite to the terminal outcome. The enabling objectives are presented in Appendix A.

The basis for the selection of the enabling or instructional objectives came from a review of the literature, informal documented comments and suggestions from interviews with special education and vocational education leaders working with handicapped students in the field in the state of Michigan, and from the author's own background and experience. The real terminal outcomes will be the actual use of the information and strategies in the classroom as practicing teachers, which is beyond the scope of this study.

The first phase of the evaluation described in some detail the degree to which the stated course objectives were achieved. The second phase addressed the questions directly pertaining to the measurable effects of the course on the students involved.

In other words, there was first, a formative evaluation procedure to assess the effectiveness of the specific course objectives and activities for the purpose of revising them and deciding which of them were prerequisite to the terminal outcome. Secondly, there was a summative evaluation procedure to test the efficacy of the course in total for the purpose of recommending its continuation or adoption as part of the special education pre-service curriculum.

In summary, the evaluation plan of this study was designed to answer the following questions:

- 1) Is a ten week undergraduate course adequate for special education undergraduate majors to develop the ability to plan, implement, and evaluate vocational training programs for handicapped students at the secondary level?
- 2) What is the effect of the course on the special education undergraduate majors in terms of competence and attitudes towards serving handicapped students in vocational training programs?

Research Questions

Specifically, this evaluation plan attempted to answer the following questions:

- 1) What is the gain in competency evidenced by the special education undergraduate majors taking the course?
- 2) How does the competency level of special education undergraduate majors after taking the course compare with that of special education teachers working with existing vocational training programs in local school districts for two years or more?
- 3) How does the competency level of special education undergraduate majors after taking the course compare with that of the special education teachers in local school districts not working with vocational training programs?

- 4) What is the change in attitudes toward vocational education for handicapped students, of the special education undergraduate majors taking the course?

Evaluation Procedure

The evaluation used in this particular plan included both formative and summative evaluation procedures. The formative evaluation was a detailed description of the course objectives and activities and answered the question of whether or not the students achieved the objectives of the course as intended. The summative evaluation was more formal and objective with the use of measuring instruments and informs the educational community as to the merit of the course.

Robert Stake's (1967) model of evaluation was used as a guide for this evaluation plan. A summary of his model follows.

Summary of Robert Stake's Evaluation Model

Stake's model of educational evaluation encompasses both formal and informal evaluation. Informal evaluation is dependent upon casual observation, intuitive norms, implicit goals, and subjective judgment. Formal evaluation is dependent on such things as check-lists, controlled comparisons, structured visitations by peers, and standardized testing of students.

Stake feels that educators rely little on formal evaluation because it seldom answers questions they are asking. Informal evaluation, on the other hand, is seldom questioned because it is characteristic of day-to-day personal styles of living.

Stake says that an educator seldom attempts to measure the match between what he intends to do and what he does do. In other words, he doesn't spell out the antecedent conditions and classroom transactions and relate them with various outcomes.

Stake questions the traditional concern of educational measurement specialists for reliability of individual student scores and predictive validity. When evaluating curricula, Stake feels that attention to individual differences among students should give way to attention to the contingencies among background conditions, classroom activities, and scholastic outcomes.

Stake's model is oriented around educational programs rather than educational products. His model is designed to help educators develop an evaluation plan. It is not designed to help educators measure what should be measured. In his plan, the evaluation of a program includes the evaluation of its materials. The plan is relevant to any curriculum, whether oriented to subject matter content or to student process.

In Stake's model of evaluation, the educational program must be fully described and fully judged in order to be fully understood. Rather than just administering normative achievement tests, the evaluator emphasizes the development of habits, skills, and attitudes which permit the individual to be a craftsman or scholar, in or out of school.

Whether the immediate purpose of the evaluation is description or judgment, three bodies of information should be tapped. It is helpful to distinguish between antecedent, transaction, and outcome data.

An antecedent is any condition which exists prior to teaching and learning and is related to outcomes. The status of the student prior to his lesson, such as his aptitude, previous experiences, interest, and willingness to learn, is a complex antecedent.

Transactions are the countless encounters of student with student, student with teacher, author with reader, parent with counselor, etc. Some examples are the presentation of a film, the class discussion, the administration of a test.

Outcomes are the consequences of education--immediate and long range, cognitive and conative, personal and community-wide. Outcomes to be considered include not only those that are evident as learning sessions end, but also applications, transfer, and re-learning effects which may not be available for measurement until long after.

Antecedents and outcomes are relatively static whereas transactions are dynamic. The boundaries between them are not distinct. Certain outcomes can be identified during a transaction which are feedback antecedents for subsequent learning. The categories are used to stimulate data collection.

Antecedents, transactions, and outcomes have a place in both descriptive and judgment data as shown in Figure 1. The evaluator can prepare a record of what educators intend, or what observers perceive, of what patrons generally expect, and of what judges value the immediate program to be. Antecedents, transactions, and outcomes can be treated separately within the four classes identified as Intentions, Observations, Standards, and Judgments.

Intents	Observations		Standards	Judgments
		Antecedents		
		Transactions		
		Outcomes		
Descriptive Matrix			Judgment Matrix	

Figure 1

A Layout of Statements and Data to be Collected by the Evaluator of an Educational Program. (Stake, 1967, p. 529.

Descriptive Data Matrix

Stake considers "goals," "objectives," and "intents" to be synonymous. He uses the category title Intents because many educators now equate "goals" and "objectives" with "intended student outcomes."

In this model, Intents includes the planned-for environmental conditions, the planned-for demonstrations, the planned-for coverage of certain subject matter, as well as the planned-for student behavior. This three-cell column of data includes goals and plans that others have, especially the students. The collection of Intents is a priority listing of all that may happen.

Intents can be the global goals of the Educational Policies Commission or the detailed behavioral objectives of the instructor. Stake feels the methodology for obtaining authentic statements of intent is a new challenge for the evaluator and yet remains to be developed.

Observational Choice

The data for the Observation column of the Descriptive Matrix are sometimes collected in a direct and personal way and at other times instruments are used. The educator is often his own evaluator or a member of an evaluation team.

The evaluator gives primary attention to the variables specifically indicated by the educator's objectives, but he must also search for unwanted side effects and incidental gains. Choice of characteristics to be observed is an equally important contribution of the evaluator as is the selection of measuring techniques.

Contingency and Congruence

Figure 2 shows that there are two principal ways of processing descriptive evaluation data in an educational program: (1) finding the contingencies among antecedents, transactions, and outcomes, and (2) finding the congruence between Intents and Observations.

A first step in evaluation is to record the intuitive contingencies between the antecedents, transactions, and outcomes. When Intents are evaluated the contingency criterion is one of logic. Here the evaluator relies on previous experience and perhaps on research experience with similar observable characteristics.

Evaluation of Observation contingencies depends on empirical evidence. Here also, the evaluator relies on previous experience with similar observable characteristics.

The data for an educational program are congruent if what was intended actually happens. Within each row of the data matrix (for the antecedents, transactions, and outcomes), the evaluator compares the cells containing Intents and Observations. The discrepancies between what was intended and what was observed happening for each row is noted and the amount of congruence for each row (antecedents, transactions, and outcomes) is described. Congruence does not indicate that outcomes are reliable or valid but that what was intended did actually occur.

Descriptive Data

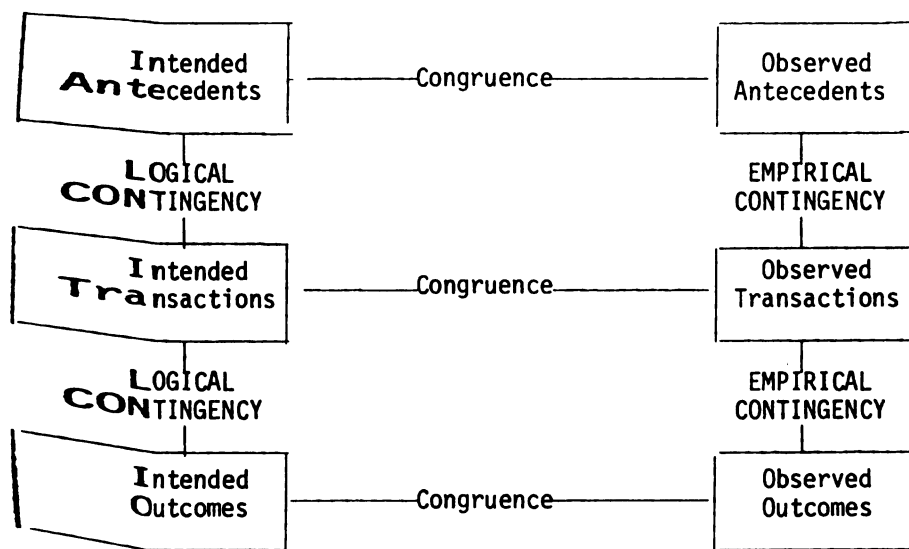


Figure 2

A Representation of the Processing
of Descriptive Data. (Stake, 1967, p. 533)

Standards and Judgments

The contingencies and congruences identified by the evaluator are subject to judgment by experts and participants. Standards by which judgments are made vary from student to student, from instructor to instructor, and from reference group to reference group. Evaluation is complicated by this multiplicity of standards, even when measurements are effectively interpreted.

Stake's model allows for change in an educator's Intents over a period of time. It is expected that the educator will change both his criteria and his standards during instruction. There are different criteria at each successive curriculum-development stage.

Criteria tend to be unspecified in informal evaluation. Criteria are more specific for formal evaluation procedures.

Comparing and Judging

There are two bases for judging the characteristics of a program. One is with respect to absolute standards as reflected by personal judgments. The other is with respect to relative standards as reflected by characteristics of alternate programs.

Each set of absolute standards indicate acceptable levels for antecedents, transactions, and outcomes. Judging is deciding which set of standards to heed or assigning a weight of importance to each set of standards.

The evaluator must make a decision as to how much to pay attention to the standards of each reference group (point of view). Deciding which variables to study and deciding which standards to employ are subjective commitments in evaluation.

Relative standards are taken from the descriptions of other programs. The evaluator selects which reference programs to compare to. From absolute and relative judgment of a program, the evaluator can obtain an overall or composite rating of merit to be used in making an educational decision.

Formative Evaluation Procedure

The formative evaluation procedure used in this study was both **des**criptive and judgmental but primarily descriptive. Applying Stake's **model** to this study the logical contingency between the antecedents (**s**uch as the students' previous experiences with vocational education **for** the handicapped), the transactions (such as the module activities **and** field experiences to on-site vocational training programs for handi-**capped** students), and the outcomes (such as the ability to identify **and** describe the components of an effective vocational training program **for** handicapped students) was determined.

In other words, an attempt was made to find out what conditions **ex**isted prior to the students starting each module of the course which **aff**ected the accomplishment of the various module activities and objec-**tives** of the course. An attempt was also made to determine how well the **pl**anned module activities helped the students in the course to achieve **the** stated performance objectives.

Again applying Stake's model, the congruence between what was intended for the course and what actually occurred was determined. For example, the transaction of on-site visitations to vocational training programs for the handicapped was intended to give the students in the course information on the components necessary for effective vocational programs for the handicapped. If after the field visitation the students in the course could not describe an effective program, then there was an incongruency. Questions were asked about the transaction selected and the procedure used to carry it out.

A pilot test group of 8 special education undergraduate majors was used to help determine which course objectives and activities were most effective for implementation. The pilot group was also used to help determine if there was a need for a change in course direction and to make decisions as to which course activities and objectives to alter, revise, delete, or add. Problems were uncovered so that what was thought feasible for the course was not so in the actual implementation. It is expected that the course objectives and activities will be revised again after the present study for subsequent use.

The kind of data collected during the pilot test of the new course winter term, 1976 are listed in Table 2. Also listed in Table 2 are the kind of data collected during the implementation of the course spring term, 1976.

TABLE 2

Kinds of Data Collected
During Pilot Test of Course and
During the Actual Implementation of the Course
"Vocational Education for Handicapped Students"

Pilot Group	Course Tryout
S tudent performance in each module.	Student performance in each module.
I nformal observation of each module.	Descriptive observation of each module.
S tudent critiques of each module.	Student critique of each module.
T imeliness and appropriateness of key course components.	Instructor critique of each module.
D irections for each module clear?	Student performance on summative instrument.
A ctivities appealing and interesting?	Interviews with students on reaction to course.
S tudents achieve objectives of course?	Program can function in a variety of class structures?
	Survey on attitudes towards vocational education for the handicapped.
	Pre- and post-test gains.

Summative Evaluation Procedure

The effectiveness of the course is reported in this study in terms of achievement of selected (of highest priority) course objectives as well as in terms of changes in attitudes which the MSU students had towards vocational education for the handicapped. Unintended as well as intended outcomes are reported in Chapter Three.

Fourteen special education undergraduate majors were enrolled in the course tryout spring term, 1976 and made up the experimental group. The group included majors from the disability areas of mental impairment, hearing impairment, and emotional impairment. A pre- and post-test was used to measure how well the students achieved the selected course objectives (Test Instrument in Appendix C).

To help determine whether or not the selected course objectives related to information and skill needed by special education teachers working in existing vocational training programs for handicapped students at the local level, the test instrument developed for the MSU class was sent to the 85 Vocational Education Special Needs Funded Projects in Michigan. The competency level of the special education majors at MSU, after taking the course, was compared to that of special education teachers working in the special needs funded projects for two years or more. Twenty-one special education teachers working in these projects returned completed test instruments. These teachers were special education certified and state approved and were located through the State of Michigan Vocational Education Special Needs Projects Contact Lists. The details

of the kind and areas of certification for these teachers are given in Table 3.

Although it is a goal of the Michigan Department of Education to have special education teachers working directly with the Vocational Education Special Needs Funded Projects, not all of the special needs projects had this happening at the time of the study. In many cases, another professional such as a counselor or reading teacher or a paraprofessional alone provided the support services to the handicapped students in a vocational training program. Quite often the coordinators of the projects were special education certified and took part of the support role. However, this study was concerned with the position of the special education teacher in a vocational training program only.

The test instrument was sent to the special education teachers in the field in early May, 1976 which was late in the school year, so the participants consisted of those special education teachers who responded. It was proposed that 30 special education teachers working directly with vocational training programs be used in this study. Because of the way the group of 21 special education teachers was selected, the results cannot be considered representative of the population of special education teachers working with vocational training programs.

In order to find out if it was justifiable to assume that special education teachers working in vocational education special needs funded projects had the competency level expected and gained this competency on the job, the test instrument was also given to special education

teachers in local school districts who were not working directly with vocational training programs. The instrument was sent to the 138 directors of special education for local school districts in Michigan. Twenty-two special education teachers working at the secondary level and 13 teachers working at the elementary level responded. These teachers were also special education certified and state approved. They were located through the Directory of Special Education Contact Persons for Intermediate and Local School Districts. The details of the kind and areas of certification for these teachers are also given in Table 3.

The test instrument taken by the special education teachers in the field is referred to as a "post-test" in this study, even though it was the only test taken by these teachers. The same post-test was used for the MSU undergraduate majors as a standard for comparison.

It was anticipated that (1) the pre-test scores of the MSU class would be similar to the post-test scores of the special education teachers not working directly with vocational training programs, and (2) the post-test scores of the MSU class would be similar to the post-test scores of special education teachers working directly with vocational training programs.

TABLE 3

Number of Special Education Teachers with Type of
Certification Held for Those Working in Special Needs Funded
Projects and Those Not Working in Vocational Training Programs

	Teachers in Special Needs Projects	Teachers Not in Voc. Training Programs	
		<u>Ele.</u>	<u>Sec.</u>
Certificate			
Elementary	5	12	11
Secondary	13	2	12
Provisional	6	3	7
Permanent	15	10	14
Approval			
Temporary	1		
Full	19	13	22
Areas			
Mentally Impaired	13	10	19
Emotionally Impaired	4	3	4
Visually Impaired	1	1	
Hearing Impaired	1	1	2
Physically Impaired		1	3
Learning Disabled	4	8	6
Speech Impaired	2		1
Counseling	6		

An attitude questionnaire was used for the students in the MSU class to determine if their attitudes towards vocational education for handicapped students changed after taking the course. The questionnaire was administered both at the beginning and at the end of the course (Questionnaire in Appendix D). The format for the items on the questionnaire was adapted from that of a study done by Jordan (1976).

The data collected in the summative evaluation procedure are shown in Table 4.

TABLE 4
Data Collected in Summative Evaluation Procedure
For the Three Groups

Groups	Pre-test	Treatment	Attitude Quest.	Post-test
MSU class n=14	Instru- ment	Course Instr.	Yes	Instru- ment
Special Ed. teachers in voc. ed. n=21	None	None	No	Instru- ment
Special Ed. teachers not in voc. n=35	None	None	No	Instru- ment

Data Analysis Procedure

To determine the effect of the new course on the competency level of the MSU students in the area of vocational education for the handicapped, the mean score gain between the pre- and post-test was computed. A one way analysis of variance test was used to determine if there were significant differences in the total mean score between the MSU group on the pre- and post - test and the total mean scores for the comparison groups, that is (1) the special education teachers working in vocational training programs, (2) special education teachers at the elementary level not working with vocational education programs, and (3) special education teachers at the secondary level not working directly with vocational training programs. The analysis of variance test was also used to determine if there were any significant differences between the groups for each of the seven test questions. The Newman-Keuls Post-Hoc Procedure was used to show where the differences between the groups existed.

Four experts¹ in the field of vocational education for handicapped students in Michigan were used to validate the content of the new course as represented on the pre- and post-test instrument. Copies of the rationale, objectives, and activities for each module as well as the materials used for the course were distributed along with the test instrument, to these four persons.

¹Larry Barber, Specialist, Handicapped Programs, Vocational-Technical Services, Michigan Department of Education; Gene Thurber, Specialist, Special Education, Michigan Department of Education; James Jay, Coordinator, Pre-Vocational Project, Central Michigan University; Cleo Johnson, Inservice Coordinator, Special Needs Vocational Education Projects, Central Michigan University.

To determine the rater reliability in scoring the test instrument, four people² working in the field in special needs related programs, were used to rate the same set of 20 completed test instruments according to the scoring manual developed for the instrument. A measure of this inter-rater reliability was computed using 10 pre-test instruments and 10 post-test instruments. Five of the post-test instruments were from the MSU class and five were from special education teachers working in vocational training programs at the local level.

An analysis of variance test was used to determine if there was any change in attitudes of the MSU class towards vocational education for the handicapped, from the beginning of the course to the end. A two-tailed test of significance was used to determine the most frequent type of experiences or contact the MSU students had with vocational education in terms of means, amount, kind, and importance of contact. The frequency for each attitude response on the questionnaire was also computed for both the pre- and post-questionnaire.

A pilot test of the new course was conducted to determine if the objectives planned fulfilled the purpose of the course and to determine to what extent the planned course activities were able to help the students achieve the objectives. Recommendations made by the pilot test group of students helped to determine the instructional procedures used and the general directions for the experimental course.

²Pat Sullivan, Special Needs Projects Coordinator, Capital Area Career Center, Mason, Michigan; Byron Rogers, Special Education Work-Study Coordinator, Capital Area Career Center, Mason, Michigan; Connie Zajac, Former Consultant, Handicapped Programs, Vocational-Technical Services, Michigan Department of Education; Virginia Kozlowski, Graduate Assistant and Course Developer, Michigan State University.

Instrumentation

The same instrument was used for both the pre- and post-test for the MSU class. This instrument was competency-based for the MSU class in that the questions represented module objectives taught during the course. How the MSU students were asked to perform on the test was the same behavior asked of them as part of their class activities. The students were able to check themselves in a form of self-evaluation for several objectives including those represented on the pre- and post-test, as they progressed through each module. Therefore, the test questions represent part of the instructional process, or treatment, of the MSU class which the other groups in this study did not receive.

Because competency-based instruction was chosen as the teaching process for the course, the test instrument was appropriate in that it represented behaviorally what was taught in the course. The validity and reliability of the test instrument are discussed in the following sections of this study.

The test instrument used for the MSU class to determine gain in competency level was also used to determine the competency level of special education teachers working in local school districts. The same instrument was appropriately used in terms of looking at a body of knowledge the special education teachers working in vocational training programs were expected to have, as judged by educators and practitioners as they attempt to meet the state and federal guidelines, and as stated in the content validity section of this study.

Because the information and educational technology that is needed by teachers working in vocational training programs for handicapped students, is relatively new, the test instrument may not have been a good representation of what was happening out in the field. The test instrument was lengthy time-consuming, and complex for teachers just beginning to become familiar with vocational education special needs programming, and is a factor to be considered in the low return rate from this group.

Content Validity

Four leaders in the field who were directly involved in developing vocational education programs for handicapped students in the state of Michigan rated each of the seven test items as to its relevancy to the area of teacher training for handicapped students in vocational education. All four indicated that all seven test items were relevant.

All four raters felt that there ought to be some additions to the course and reflected in the test instrument. Following are the additions suggested:

- 1) Separate test item on pre-vocational education.
- 2) Incorporation of services handicapped students have access to in addition to Vocational Education, Special Education, and Vocational Rehabilitation.
- 3) Additional stress upon how Vocational Education, Special Education, and Vocational Rehabilitation can work together in serving handicapped students.

- 4) More emphasis directed to all of the components of the Michigan Career Education Model.

These suggested additions reflect some limitations of the test instrument in that it was not as encompassing as experts in the field viewed it should have been.

Rater Reliability

Cronbach's coefficient alpha method (1967) was used to measure the degree of internal consistency between the four raters for the five test questions requiring a short answer written response. The raters were treated as test items in this method. Both inter-rater reliability coefficients and repeated measures of analysis of variance were computed to check the extent of agreement between the raters' judgment on the scores given according to the scoring manual.

The results showed substantial agreement among the raters as to how they scored each test question on the set of 20 instruments. The reliability coefficients for the five questions requiring written short answer responses are presented in Table 5.

Table 5
Correlation Coefficients of
Inter-Rater Reliability

Question	Alpha
1	.99
4	.99
5	.98
6	.99
7	.95

Pilot Study

A pilot group of eight special education undergraduate majors was used to determine the appropriateness of the course content for the pre-service level and to determine whether or not the objectives and activities planned for the course were logical, interesting, and meaningful. The pilot group made recommendations for the course try-out in terms of suggested revisions, additions, and changes in course direction. An outline of the course content for each module follows. The details of the Rationale, Objectives, and Activities for each module are in Appendix A.

MODULE I

TOPIC

ACTIVITIES

What is Vocational
Education?

- | | |
|--|---|
| A. Vocational Education-
a definition. | 1. Career Brainstorming
Exercise. |
| 1) U.S.O.E. Clusters
2) Entry level skills | 2. Classify vocational
programs into U.S.O.E.
Clusters. |
| B. Task listing and task
detailing. | 3. Read article on vocational
education as part of
career education. |
| C. Management system
for a vocational
education program. | 4. View illustrations of
vocational education
and career education
as part of total school
program. |
| D. Competency-Based
Curriculum. | 5. Interview person on job
to list tasks and detail
tasks as to performance
required. |
| | 6. Read and discuss hand-
outs on trends towards
competency-based educa-
tion for handicapped. |

MODULE II

TOPIC

ACTIVITIES

Identification and
Eligibility of Handi-
capped Students for
Vocational Training
Programs.

- | | |
|---|---|
| A. Function of EPPC. | 1. Read the functions and procedures for EPPC. |
| B. Roles of participants. | 2. Read case study material and role play EPPC making recommendations for vocational placement. |
| C. Crucial vocational and career decisions. | |
| D. Criteria for effective EPPC meetings. | 3. Assess role play according to criteria for effective meetings. |

MODULE III

TOPIC

ACTIVITIES

Money and Resources -
Who to Contact

- | | |
|--|--|
| <p>A. Federal and state legislation.</p> <ul style="list-style-type: none"> 1) Criteria for selection of students. 2) Alternatives in programming for handicapped students. 3) Handicapped students integrated in regular vocational education programs. 4) Reimbursable costs for state funded projects. 5) Roles of personnel involved in vocational education programs for the handicapped. <p>B. Descriptions of vocational education alternatives for handicapped students.</p> <p>C. Resources and funds available from state agencies (Voc. Ed., Special Ed., Voc. Rehab.)</p> | <ul style="list-style-type: none"> 1. Read and discuss excerpts from federal legislation in vocational education for handicapped. 2. Participate in discussion of the Michigan State Plan for Vocational Education and how services for handicapped are coordinated. 3. Discuss the Michigan guidelines for handicapped in vocational education programs. React to problem situations regarding sources of information and funding using the information in the guidelines. |
|--|--|

MODULE IV

TOPIC

ACTIVITIES

How to Sequence
ProgrammingPart A - Career Develop-
ment Goals

- | | |
|---|---|
| 1) Career education for handicapped K-adult. | 1. Fill in "Coat of Arms." |
| 2) Sample career education activities for handicapped students. | 2. Check values in "Things I Like" exercise. |
| 3) Career education related to academics. | 3. Participate in Career Choice Game. |
| 4) Sample career education resources for handicapped students. | 4. Participate in Stereotypes exercise. |
| | 5. Discuss Work Ethics situations. |
| | 6. Discuss basic academic skills related to life-centered activity. |
| | 7. Study career education materials available for handicapped and how you would use them. |

MODULE IV

TOPIC	ACTIVITIES
Part B - <u>Pre-Vocational Components</u>	
1) Job pyramids.	1. Do work sheets on hierarchy of jobs.
2) Vocational Evaluation Systems.	2. Observe work evaluation samples at Area Career Center.
3) Methods for pre-vocational assessment.	3. Read about other vocational evaluation systems.
	4. Discuss method of evaluation used by Vocational Rehabilitation Service.
	5. Listen to explanation of Pre-Vocational Project at Central Michigan University.

MODULE IV

TOPIC

ACTIVITIES

Part C - Vocational
Training

- | | |
|--|---|
| 1) Criteria for model vocational education delivery system for handicapped. | 1. Observe handicapped students at Area Career Center and adaptation of instruction. |
| 2) Vocational education programs for handicapped in "Action." | 2. Visit one type of delivery system for handicapped and discuss in class how it meets the criteria for a model program. |
| 3) Adaptation of instruction for handicapped in vocational education programs. | 3. Trace one student's development from pre-vocational through plans for post school placement - at school program visited. |

MODULE IV

TOPIC	ACTIVITIES
Part D - Post School <u>Vocational</u> <u>Training</u>	
1) Options at post high school level available to handicapped.	1. Listen to project personnel discuss new post-secondary programs which involve job modification to enable handicapped to succeed.
2) Job modification for handicapped.	2. Discuss with personnel from community college the options available for handicapped there.
	3. Read Case Study and discuss options you would choose for post school placement.

MODULE V

TOPIC

ACTIVITIES

Liaison Activities in
Vocational Programming
Serving Handicapped
Students.

- | | |
|--|---|
| A. Contributions of vocational education, special education, and support persons on a special needs team for handicapped students. | 1. Role play special needs team coordinating efforts so handicapped students can succeed in vocational education class lesson. |
| B. Program decisions based on student needs. | 2. Discuss case study of handicapped student's job interests late in high school career. |
| C. Dealing with negative attitudes towards handicapped in school programs. | 3. Listen to handicapped adult on problems with job placement and training. |
| D. On-the-job training experiences for handicapped. | 4. Discuss vocational interest surveys, on-the-job work experiences, and evaluation reports for handicapped students with Work-Study Coordinator from local School. |
| E. Procedures for obtaining successful work experiences for handicapped students. | 5. Participate in simulation on negative attitudes and lack of coordination among school and community personnel towards handicapped. |
| | 6. View slide-tapes on Vocational Education Cooperative Education Programs. |
| | 7. Discuss Case Study on Work-Study vs. regular vocational education co-op program. |

MODULE V (continued)

TOPIC

ACTIVITIES

8. Read and discuss guidelines for Special Education Work-Study Programs.
9. Discuss steps in setting up a vocational education delivery system for the handicapped.
10. React to state department of education personnel from Vocational Education Services and Special Education Services, on what makes a local program in vocational education for handicapped work.

MODULE VI

TOPIC

ACTIVITIES

Evaluation and Follow-Up Services of Vocational Education Programs for the Handicapped.

A. Follow-up process for handicapped students.

B. Using follow-up data to improve school program.

1. Study follow-up data for four schools and make decision as to probable success of programs.
2. Read and discuss sample follow-up surveys.
3. Discuss sample evaluation studies and give ideas as to components of an entire follow-up process.

Recommendations for Course Instruction
As A Result of Pilot Test

Summary of Pilot Group's Recommendations

The pilot group of special education undergraduate majors taking the course generally felt that they achieved the objectives of the course but not thoroughly enough. Too much material was covered. The group suggested adding another course rather than eliminating any content covered in the class in which they participated.

The pilot group felt the sequencing of course modules was appropriate but that an overall stronger emphasis on career education should be made at the beginning of the course. The directions for module activities were not clearly stated nor written. The group also felt that the guest speakers were not preceded by enough introductory remarks towards the particular objective the speakers fulfilled.

For strategies in teaching the course, role play situations, case studies, and simulations were most appealing. The group would have liked to have had more practice in seeing the vocational education materials used and adapted for handicapped students. Video tapes or films of other vocational education delivery systems for handicapped students, other than the one visited, were suggested for more effective use of time. The group also felt that the modules on post-school training and on follow-up procedures were too short to be really meaningful.

Directions Suggested for Course by Pilot Group

Out of the pilot group came some suggestions for some general directions in which the new course should go. Some of these suggestions

were not feasible due to time restrictions or management problems as the experimental course was implemented. Other suggestions became points of emphasis during the experimental class spring term, 1976.

Following are the directions suggested by the pilot group:

1. The field visitations to the vocational training centers for handicapped students had the greatest effect on more positive attitudes towards the provision of vocational education for the handicapped. The pilot group suggested visits to at least two centers or programs, but preferably more. However, because of student schedules, the original plan of three visitations had to be revised to only two.
2. Case studies and other assignments could be done at the vocational training centers visited. Again, student schedules did not allow for this practice.
3. The "affective" areas of vocational training ought to be emphasized more. This suggestion was not managed for the experimental class but was made even more clear after it.
4. Practitioners in the field such as the work-study coordinator, state department of education supervisor, etc. were highly recommended and were continued for the experimental class.
5. The activities where decisions must be made were highly valued and continued in the experimental class.
6. There was not enough emphasis on the responsibilities of the cooperative arrangement in serving handicapped students, namely vocational education, special education, and

vocational rehabilitation services. More time was spent on this Cooperative Agreement for the experimental class.

7. The Guidelines from the State Department of Education need to be dealt with in a more clear and interesting manner. A new strategy was not worked on this for the experimental group.
8. Too much material was presented for a ten week course. More time is needed to cover each module. The pilot group recommended that this be a two-term course at the minimum.
9. More could be gained from the course if offered two or three times a week rather than just once.

Revisions and Additions Made for Experimental Class as a
Result of Pilot Test Group

The following revisions or additions were made as the experimental class was taught spring term, 1976 based on the recommendations made by the pilot group of special education majors as well as the instructor's evaluation:

1. The activities requiring the listing of teaching ideas were deleted because of the students' lack of teaching experience. (This was especially recommended by those who had not yet done their student teaching.)
2. Simulations and role play activities were emphasized. Some discussion activities during the pilot were made into role play situations for the experimental class.

3. A written rationale and list of activities were developed for each module to add organization and clarity to the course content.
4. A physically handicapped adult was brought in to the experimental class to explain problems of seeking and keeping employment.
5. A flow chart depicting the vocational alternatives was developed and presented at the beginning of the experimental class to clear up some of the confusion as to "how the parts make the whole."
6. The video-tape of a meeting between the vocational education teacher, special education teacher, reading support teacher, work-study coordinator, and special needs counselor using the CMU Task Modules was eliminated because it was "performed after school and appeared fake."
7. The objective pre- and post-test for the pilot group was changed to a more criterion referenced test that was more "situational" as were the objectives and activities in class.

CHAPTER III

ANALYSIS AND FINDINGS

Competency of MSU Class

Both formative and summative evaluation procedures were used to determine the gain in competency of the special education undergraduate majors at MSU taking the course "Vocational Education for Handicapped Students." The results of the formative evaluation procedure and the summative evaluation procedures used in this study are explained in the following sections.

Results of Formative Evaluation

The pilot test group of undergraduate special education majors at MSU indicated that there was a logical contingency between the antecedents (background conditions of the students), the transactions (activities the students participated in), and the outcomes (behavioral objectives) of the course. During the experimental class, the congruence between what was intended for the course and what actually was observed happening was determined by both the MSU students in the class and by the instructor.

The Descriptive Matrix explaining this congruency for Module I is found in Table 6. The Descriptive Matrixes for the other modules can be found in Appendix B. The Descriptive Matrixes report the congruencies or discrepancies between what was intended and what actually occurred for the antecedents, transactions, and outcomes for the module.

The antecedents stated are the prerequisite or background information the MSU students were expected to have at the beginning of the module. As Stake (1967) points out, the antecedents can become quite complex if such things as aptitude, interest, and willingness to learn are all considered. To simplify the procedure for the purpose of this course evaluation, only the antecedent of previous experience or background information related to the module being described was used.

The intended transactions and intended outcomes for the experimental course are stated clearly in Appendix A under Activities and Objectives for each of the six modules. The reader is expected to refer to this appendix when looking at the Observations being described for each module in the Descriptive Matrixes.

The data for the Observation column in the Descriptive Matrix for the antecedents, transactions, and outcomes for each module were collected through one or more of the following ways: (1) student verbal reports, (2) information from demographic data, (3) feedback from student evaluation forms for each module, (4) instructor observation, and (5) pre-and post-test results. The descriptions indicate which of these ways were used.

In most instances, the background conditions that existed and the activities and objectives accomplished as the course was taught were congruent with what was planned for the course.

After the Descriptive Matrix for each module, are some suggestions for improving instruction for that module. These suggestions could possibly eliminate some of the discrepancies described, if the course were taught again.

TABLE 6
Descriptive Matrix for Module I

INTENTS	OBSERVATIONS
<u>Antecedents</u>	
<p>Students not aware of role as special education teacher in a vocational education program. Students have little or no experience with or knowledge of vocational education.</p>	<ol style="list-style-type: none"> 1. The majority of students were aware that vocational and career centers existed but were not familiar with what vocational education really is. 2. Student verbal reports revealed that five students had work experience in some of the vocational training areas but the majority of students did not realize these were actually vocational training areas. 3. Demographic data revealed that one student participated in a vocational training program herself in high school.
<u>Transactions</u>	
<p>See Module I Activities in Appendix A.</p>	<ol style="list-style-type: none"> 1. Feedback from evaluation forms revealed that the activities were successful in enabling all of the students to identify the vocational training areas and how they are part of the total career education program. 2. Feedback from student evaluation forms revealed that interviews with people on the job were contingent to learning task analysis and task detailing and how the performance of these is taught to special education students. This was the case for all of the students in the MSU class. 3. The activity on CBE was presented in isolation and not as an integral part of the module. Though it was interesting to the majority of the students, its purpose here was confusing according to student verbal reports and instructor observation.

INTENTS**OBSERVATIONS**

Outcomes

See Module I
Objectives in
Appendix A.

1. Student verbal reports and evaluation forms revealed that all students were able to identify the vocational training areas and apply the definition of vocational education as intended.
 2. According to student verbal reports, all the students were able to do task listing and task detailing and apply this information to teaching the performance required.
 3. Verbal reports and post-test results revealed that all of the students were able to list and explain the steps involved in setting up and managing a vocational training program at the high school level with at least 60 percent accuracy.
 4. Instructor evaluation revealed that the objective on CBE was meaningless as presented in this module, though it was interesting to the students.
-

Suggestions for Improving Instruction:

Competency-Based-Education is a growing trend in curriculum development for special needs students and a meaningful way needs to be found to integrate this concept into this module.

Summary of Recommendations Made by Experimental Class

The special education undergraduate majors in the MSU experimental class made the following recommendations for teaching the class on the end of course evaluation forms:

1. More dialogue should take place with students and teachers in vocational education programs in local school districts.
2. Needs of the handicapped in vocational education would be more clear if more handicapped people themselves were involved in the MSU class.
3. More experience with the alternate delivery systems in vocational education serving handicapped students is needed, especially with the special education teacher's role in each of these delivery systems.
4. Modules III, IV, and V are the most valuable and should be emphasized. (These modules are on Money and Resources-- Who to Contact, How to Sequence Programming, and Liaison Activities in Vocational Programming Serving Handicapped Students.)
5. The teaching strategies of simulations, role play, problem-solving and decision-making situations, and case studies are most valuable and should be continued to be emphasized.
6. Practitioners from the field and materials for actual use in the classroom are valuable and should be continued.

Standards and Judgments in Course Evaluation

The criteria or standards used for judging the transactions and outcomes of the experimental course were established through informal interviews with leaders in the field as well as through continuous student feedback from both the pilot test group and the experimental class. The experts in the field of vocational education for handicapped students who validated the content of the course also helped to set the standards for the course. Together these groups represented what patrons generally expected from this new course.

There was no comparable program with which the standards for the new course could be judged. Student evaluation of each module and of the course in total; content of the inservice workshops in the state offered by the Disadvantaged/Handicapped Unit, Vocational and Technical Services, Michigan Department of Education; and needs expressed by state department of education personnel as well as by teachers and administrators in the field, all were used in judging the worth of this course.

The informal evaluation described above indicates that this new course made a valuable contribution towards meeting the pre-service needs of special education teachers working directly with vocational education programs for handicapped students. A more formal evaluation of the worth of the course is described in the following section.

Results of Summative Evaluation

A pre- and post-test was used to measure how well the students in the MSU Experimental class achieved seven highest priority objectives for the course (test instrument in Appendix C). These objectives dealt with the following:

- 1) the steps in a management system for planning and implementing a vocational class for handicapped students
- 2) the alternative vocational education programs available for handicapped students
- 3) the services of the three main agencies serving handicapped students in vocational training programs, i.e. Special Education, Vocational Education, and Vocational Rehabilitation
- 4) a model vocational education delivery system for handicapped students
- 5) dialogue of the special needs team helping a handicapped student succeed in a lesson for a vocational training program
- 6) comparison of a regular cooperative vocational education work program with a special education work-study program
- 7) interpretation of follow-up data for handicapped students who have graduated from a vocational training program.

The mean scores of the MSU class for each of the test questions over the seven highest priority objectives, as well as the total mean scores on both the pre- and post-test are presented in Table 7. The total number of possible points for the test was 146.

TABLE 7
Mean Scores on Pre- and Post-Test on
Each Test Question and on Total Test for
MSU Experimental Class

N=14

Question Number	1	2	3	4	5	6	7	Total
Points Possible	(40)	(14)	(18)	(40)	(12)	(16)	(6)	146
Pre	2.36	4.9	9.86	0	3.29	5.14	4	29.79
Post	37.57	13.43	17.71	35	11.86	15	6	136.29

The results in Table 7 reveal that the mean total score increased over four times for the MSU experimental class from the pre-test to the post-test. The greatest increase in mean sub-scores were for questions 1 and 4. These questions required the listing of the steps involved in a management system for planning and implementing a vocational class for handicapped students, and the description of a model vocational education delivery system for handicapped students. The least increase in mean sub score was for Question 7, which required the interpretation of follow-up data.

Discussion

The first research question of this study was "What is the gain in competency evidenced by the special education undergraduate majors taking the course?" The gains on the post-test as compared to the mean scores on the pre-test were significant and can be used as a measure of competency level. That is, the students ought to be prepared adequately to begin serving handicapped students in vocational programs at the secondary level.

The gain in the post-test score was significant for all of the test questions. The high gain in post-test scores could be attributed to the instructional process which was competency-based for the most part. The process was built to insure success. The students in the MSU class had an opportunity to practice in class the behavior on which they were tested at the end of the course.

Competency of MSU Class Compared to
Special Education Teachers in the Field

The competency level of the special education undergraduate majors in the MSU class was compared to that of: (1) special education teachers working with existing vocational training programs in local school districts, and (2) special education teachers in local school districts who were not working with vocational training programs.

A one way analysis of variance test was used to determine if there were any significant differences in competency level, or more specifically - the scores on a test instrument, among these groups. There were five groups of scores in the analysis:

Group 1 - MSU Class Pre-Test

Group 2 - MSU Class Post-Test

Group 3 - Special Education Teachers working in vocational training programs

Group 4 - Special Education Teachers at the elementary level not working in vocational training programs

Group 5 - Special Education Teachers at the secondary level not working in vocational training programs.

The Newman-Keuls Post-Hoc Procedure was used to determine where the differences existed among the five groups. The Newman-Keuls test is based on a stairstep or layer approach to tests of significance. It provides a procedure for delineating the steps between the mean scores ranked from highest to lowest. The mean scores are grouped so that there are not significant differences within each step whereas the

mean scores in a higher or lower step are significantly different. An alpha level of .05 is kept constant in this test. A protection level lower limit of $1 - \alpha$ is provided for all ordered sets of means regardless of how many steps apart the means are. The critical value for the differences between the means varies, depending on the number of means in the set. Therefore, error rate does not apply in this case (Kirk, 1968).

As shown in Table 8 the differences among the five groups in total mean scores for the summative test were significant at the .001 level. The dependent variable was the total rating assigned to the subjects on the test by an evaluator. The total mean scores for each group are given in Table 8.1. Table 8.1 shows that as expected, the special education teachers at the elementary level not working with vocational training programs (Group 4) had a total mean score that was not significantly different from that of the MSU class on the pre-test (Group 1).

Also, as expected, the special education teachers working with vocational training programs (Group 3) had a higher total mean score than the special education teachers not working in vocational training programs. However, as shown in Table 8.1 the total mean score of special education teachers working directly with vocational training programs was not significantly different than the total mean score for special education teachers at the secondary level not working directly with vocational training programs (Group 5). The total mean score of the MSU class (Group 2) was significantly higher than all of the other groups.

Table 8

Analysis of Variance on the Mean Total Scores on the Pre- and Post-Test for the MSU Group and on the Post-Test for the Special Education Teachers in the Field

Source of Variation	Degree of Freedom	Sum of Squares	Mean Square	F Ratio
Between groups	4	107224.49	26806.12	46.97**
Within groups	79	45090.21	570.76	
Total	83	152314.70		

** Significant at $\alpha = .001$

Table 8.1

Post-Hoc Comparisons (Newman-Keuls) for the Mean Total Scores on the Pre- and Post-Test for the MSU Group and on the Post - Test for the Special Education Teachers in the Field

Group ^a	Number	Mean	SD	Comparison		(p<) with group		
				1	2	3	4	5
1	14	29.50	11.22	-	*	*	NS	*
2	14	136.57	16.37		-	*	*	*
3	21	63.81	25.09			-	*	NS
4	13	31.69	19.83				-	*
5	22	51.18	32.85					-

* Newman-Keuls significant at the $\alpha = .05$

NS not significant

^aGroup 1 MSU Pre-Test

2 MSU Post-Test

3 Special Education Teachers in Vocational Education

4 Elementary Special Education Teachers Not in Vocational Education

5 Secondary Special Education Teachers Not in Vocational Education

Figure 3 shows that the total mean score of the MSU class on the post-test (Group 2) was significantly higher than all of the other groups. The groups in the analysis are presented along the horizontal axis and the mean total scores on the test are presented on the vertical axis in Figure 3.

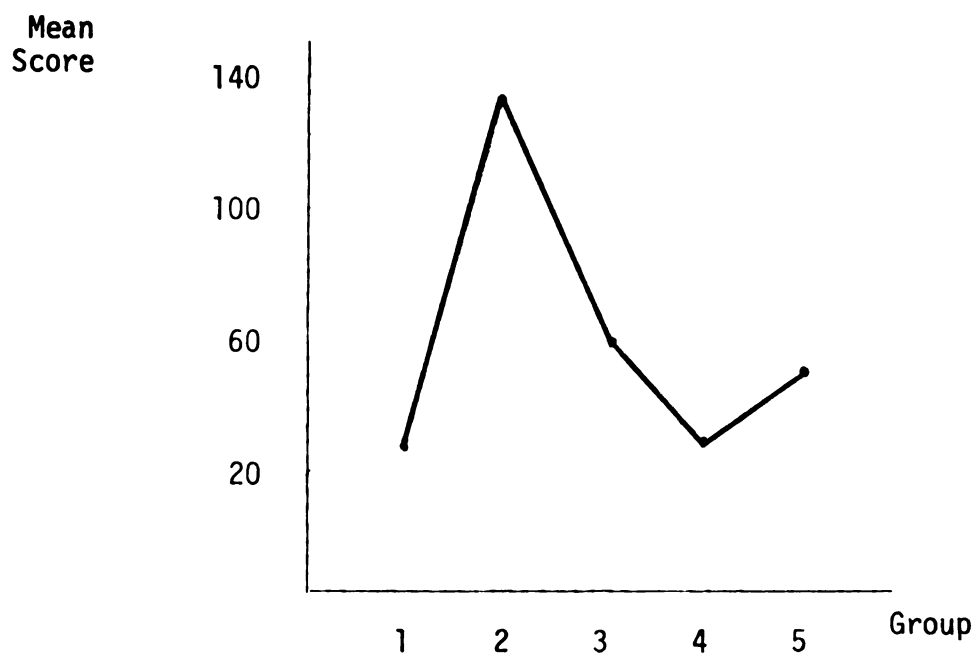


Figure 3

Total Mean Scores for the MSU Group on the Pre-Test (1) and Post-Test (2) and for the Special Education Teachers Working with Vocational Training Programs (3), Special Education Teachers at the Elementary Level Not Working with Vocational Training Programs (4), and Special Education Teachers at the Secondary Level Not Working with Vocational Training Programs (5).

The one way analysis of variance test was also used to determine if there were any significant differences in mean scores among the five groups for each of the seven test questions. The Newman-Keuls Post-Hoc Procedure was used to determine where the differences existed among the five groups for each test question as well.

As shown in Table 9, the differences in mean scores among the five groups on Question 1 were significant at the .001 level. The dependent variable was the rating assigned by the evaluator to the answer given by the subjects to the question on the steps in a management system for planning and implementing a vocational class for handicapped students.

Table 9.1 shows that the special education teachers working in vocational training programs (Group 3) had a significantly higher mean score than the MSU pre-test group (Group 1) and the special education teachers, both at the elementary level (Group 4) and secondary level (Group 5), who were not working with vocational training programs. The MSU post-test group (Group 2) had a significantly higher mean score than all of the other groups.

TABLE 9

Analysis of Variance on the Mean Scores
for Question 1 on the Pre- and Post-Test
for the MSU Group and on the Post-Test for
the Special Education Teachers in the Field

Source of Variation	Degree of Freedom	Sum of Squares	Mean Scores	F Ratio
Between groups	4	12088.40	3022.10	84.08**
Within groups	79	2839.64	35.94	
Total	83	14928.04		

** Significant at $\alpha = .001$

TABLE 9.1

Post-Hoc Comparisons (Newman-Keuls) on the
Mean Scores for Question 1 on the Pre- and
Post-Test for the MSU Group and on the Post-
Test for the Special Education Teachers in the Field

Group ^a	Number	Mean	SD	Comparison (p<) with group				
				1	2	3	4	5
1	14	2.36	2.87	-	*	*	NS	NS
2	14	37.57	4.85		-	*	*	*
3	21	13.05	7.34			-	*	*
4	13	4.31	5.28				-	NS
5	22	5.82	6.95					-

* Newman-Keuls significant at $\alpha = .05$
NS not significant

^aGroup 1 MSU Pre-Test
2 MSU Post-Test
3 Special Education Teachers in Vocational Education
4 Elementary Special Education Teachers Not in Vocational Education
5 Secondary Special Education Teachers Not in Vocational Education

As shown in Figure 4, the MSU post-test group (Group 2) had a significantly higher mean score than all of the other groups for Question 1. The groups in the analysis are presented along the horizontal axis and the mean scores for Question 1 are presented on the vertical axis in Figure 4.

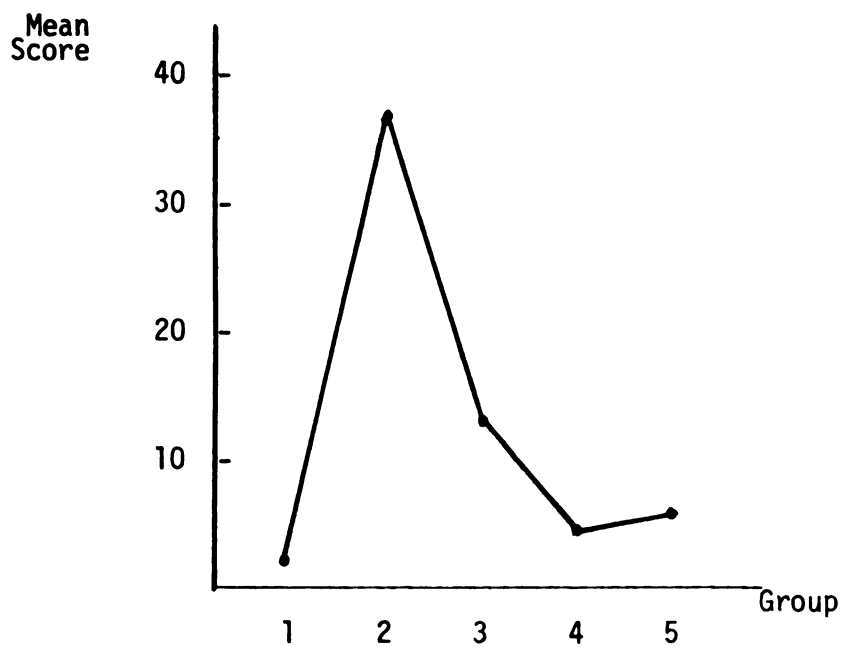


Figure 4

Mean Scores on Question 1 "the Steps in a Management System for Planning and Implementing a Vocational Class for Handicapped Students" for the MSU Pre-Test Group (1) and MSU Post-Test Group (2) and for the Special Education Teachers Working with Vocational Training Programs (3), Special Education Teachers at the Elementary Level Not Working with Vocational Training Programs (4), and Special Education Teachers at the Secondary Level Not Working with Vocational Training Programs (5).

As shown in Table 10 the differences in mean scores among the five groups for Question 2 were significant at the .001 level. The dependent variable was the rating assigned by the evaluator to the answer given by the subjects to the question on the alternative vocational education programs available for handicapped students.

Table 10.1 shows that there were no significant differences in mean scores for Question 2 among the MSU pre-test group (Group 1) and the special education teachers not working in vocational training programs (Groups 4 and 5). The teachers working in vocational training programs had a significantly higher mean score for Question 2 than Groups 1, 4, and 5. The MSU post-test group (Group 2) had a mean score significantly higher than all of the other groups.

TABLE 10

Analysis of Variance on the Mean Scores for
Question 2 on the Pre- and Post-Test for the
MSU Group and on the Post-Test for the Special
Education Teachers in the Field.

Source of Variation	Degree of Freedom	Sum of Squares	Mean Square	F Ratio
Between groups	4	678.07	169.52	21.86**
Within groups	79	612.74	7.76	
Total	83	1290.81		

**Significant at $\alpha = .001$

TABLE 10.1

Post-Hoc Comparisons (Newman-Keuls) on the Mean Scores for Question 2 on the Pre- and Post-Test for the MSU Group and on the Post-Test for the Special Education Teachers in the Field

Group ^a	Number	Mean	SD	Comparison ($p <$) with group				
				1	2	3	4	5
1	14	4.86	2.18	-	*	*	NS	NS
2	14	13.43	2.14		-	*	*	*
3	21	8.0	2.97			-	*	*
4	13	5.54	2.18				-	NS
5	22	6.27	3.51					-

* Newman-Keuls significant at $\alpha = .05$
 NS not significant

^aGroup 1 MSU Pre-Test
 2 MSU Post-Test
 3 Special Education Teachers in Vocational Education
 4 Elementary Special Education Teachers Not in Vocational Education
 5 Secondary Special Education Teachers Not in Vocational Education

The MSU post-test group's (Group 2) significantly higher mean score than all of the other groups for Question 2 is shown in Figure 5. The groups in the analysis are presented along the horizontal axis and the mean scores for Question 2 are presented on the vertical axis in Figure 5.

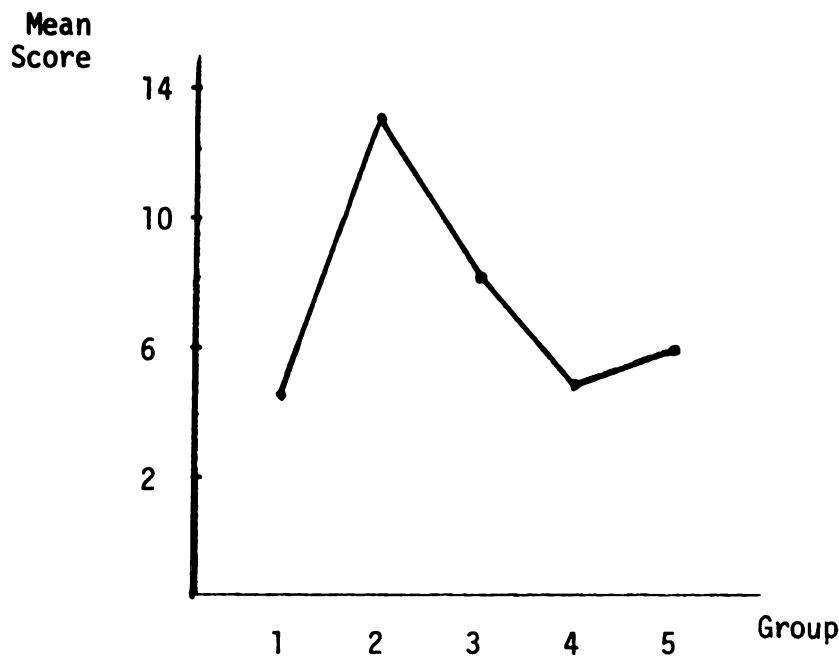


Figure 5

Mean Scores on Question 2 "the Alternative Vocational Education Programs Available for Handicapped Students" for the MSU Pre-Test Group (1) and MSU Post-Test Group (2) and for the Special Education Teachers Working with Vocational Training Programs (3), Special Education Teachers at the Elementary Level Not Working with Vocational Training Programs (4), and Special Education Teachers at the Secondary Level Not Working with Vocational Training Programs (5).

As shown in Table 11, the differences among the five groups in the mean score for Question 3 were significant at the .001 level. The dependent variable was the rating assigned by the evaluator to the answer given by the subjects to the question on the services of the three main agencies serving handicapped students, i.e. Special Education, Vocational Education, and Vocational Rehabilitation.

Table 11.1 shows that only the MSU post-test group (Group 2) had a significantly higher mean score than all the other groups for Question 3.

TABLE 11

Analysis of Variance on the Mean Scores
for Question 3 on the Pre- and Post-Test
for the MSU Group and on the Post-Test for
the Special Education Teachers in the Field

Source of Variation	Degree of Freedom	Sum of Squares	Mean Square	F Ratio
Between groups	4	799.98	199.99	13.50**
Within groups	79	1169.98	14.81	
Total	83	1969.95		

** Significant at $\alpha = .001$

TABLE 11.1

Post-Hoc Comparisons (Newman-Keuls) on the Mean Scores for Question 3 on the Pre- and Post-Test for the MSU Group and on the Post-Test for the Special Education Teachers in the Field

Group ^a	Number	Mean	SD	Comparison ($p < .05$) with group				
				1	2	3	4	5
1	14	9.86	3.55	-	*	NS	NS	NS
2	14	17.71	1.07		-	*	*	*
3	21	10.76	2.98			-	NS	NS
4	13	8.46	3.67				-	NS
5	22	9.27	5.57					-

*Newman-Keuls significant at $\alpha = .05$

NS not significant

- ^aGroup 1 MSU Pre-Test
 2 MSU Post-Test
 3 Special Education Teachers in Vocational Education
 4 Elementary Special Education Teachers Not in Vocational Education
 5 Secondary Special Education Teachers Not in Vocational Education

The significantly higher mean score of the MSU post-test group (Group 2) for Question 3 is shown in Figure 6. The groups in the analysis are presented along the horizontal axis and the mean scores for Question 3 are on the vertical axis in Figure 6.

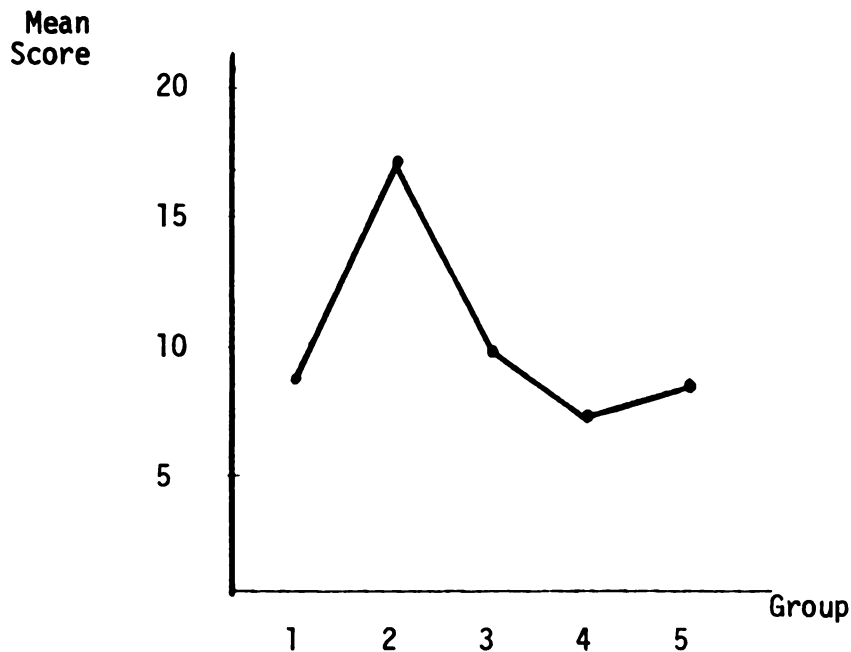


Figure 6

Mean Scores on Question 3 "the Services of the Three Main Agencies Serving Handicapped Students, i.e. Special Education, Vocational Education, and Vocational Rehabilitation" for the MSU Pre-Test Group (1) and MSU Post-Test Group (2) and for the Special Education Teachers Working with Vocational Training Programs (3), Special Education Teachers at the Elementary Level Not Working with Vocational Training Programs (4), and Special Education Teachers at the Secondary Level Not Working with Vocational Training Programs (5).

As shown in Table 12, the differences in mean scores among the five groups for Question 4 were significant at the .001 level. The dependent variable was the rating assigned by the evaluator to the answer given by the subjects to the question on a model vocational education delivery system for handicapped students.

Table 12.1 shows that the MSU pre-test group (Group 1) and the special education teachers at the elementary level not working with vocational training programs (Group 4) had scores which were not significantly different for Question 4. Special education teachers working directly with vocational training programs (Group 3) and special education teachers at the secondary level not working directly with vocational training programs (Group 5) had significantly higher mean scores than Groups 1 and 4. The scores for Group 3 were not significantly higher than those of Group 5. The MSU post-test group (Group 2) had still a significantly higher mean score than all of the other groups.

TABLE 12

Analysis of Variance on the Mean Scores
for Question 4 on the Pre- and Post-Test
for the MSU Group and on the Post-Test for
the Special Education Teachers in the Field

Source of Variation	Degree of Freedom	Sum of Squares	Mean Square	F Ratio
Between groups	4	11370.57	2842.64	23.21**
Within groups	79	9675.67	122.48	
Total	83	21046.24		

**Significant at $\alpha = .001$

TABLE 12.1

Post-Hoc Comparisons (Newman-Keuls) on the Mean Scores for Question 4 on the Pre- and Post-Test for the MSU Group and on the Post-Test for the Special Education Teachers in the Field

Group ^a	Number	Mean	SD	Comparison (p <) with group				
				1	2	3	4	5
1	14	0	0	-	*	*	NS	*
2	14	35.00	10.63		-	*	*	*
3	21	10.76	13.57			-	*	NS
4	13	.31	1.11				-	*
5	22	14.64	14.65					-

*Newman-Keuls significant at $\alpha = .05$
 NS not significant

^aGroup 1 MSU Pre-Test
 2 MSU Post-Test
 3 Special Education Teachers in Vocational Education
 4 Elementary Special Education Teachers Not in Vocational Education
 5 Secondary Special Education Teachers Not in Vocational Education.

Figure 7 shows the significantly higher mean score of the MSU post-test group over all of the other groups for Question 4. The groups in the analysis are presented along the horizontal axis and the mean scores for Question 4 are on the vertical axis in Figure 7.

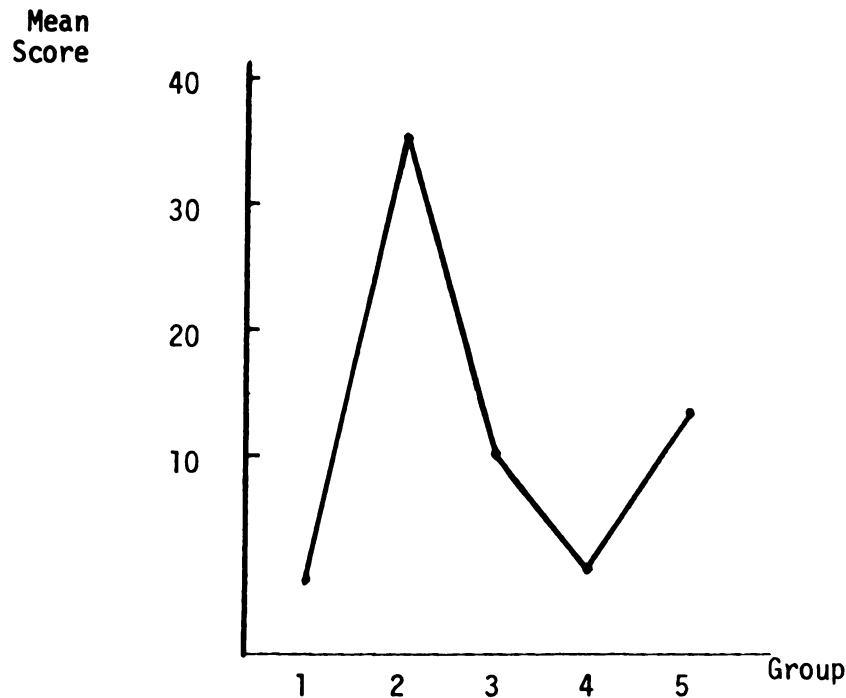


Figure 7

Mean Scores on Question 4 "a Model Vocational Education Delivery System for Handicapped Students" for the MSU Pre-Test Group (1) and the MSU Post-Test Group (2) and for the Special Education Teachers Working with Vocational Training Programs (3), Special Education Teachers at the Elementary Level Not Working with Vocational Training Programs (4), and Special Education Teachers at the Secondary Level Not Working with Vocational Training Programs (5).

As shown in Table 13, the differences among the five groups in mean scores for Question 5 were significant at the .001 level. The dependent variable was the rating assigned by the evaluator to the answer given by the subjects to the question on the dialogue of the special needs team helping a handicapped student succeed in a lesson for a vocational training program.

Table 13.1 shows that the special education teachers working with vocational training programs (Group 3) had a significantly higher mean score for Question 5 than the MSU pre-test group (Group 1) but they did not have a significantly higher mean score than the special education teachers who were not working with vocational training programs, either at the elementary or secondary levels (Groups 4 and 5). The MSU post-test group had a significantly higher score than all of the other groups.

TABLE 13

Analysis of Variance on the Mean Scores
for Question 5 on the Pre- and Post-Test
for the MSU Group and on the Post-Test for
the Special Education Teachers in the Field

Source of Variation	Degree of Freedom	Sum of Squares	Mean Square	F Ratio
Between groups	4	690.36	172.59	9.43**
Within groups	79	1445.78	18.30	
Total	83	2136.14		

** Significant at $\alpha = .001$

TABLE 13.1

Post-Hoc Comparisons (Newman-Keuls) on the Mean Scores for Question 5 on the Pre- and Post-Test for the MSU Group and on the Post-Test for the Special Education Teachers in the Field

Group ^a	Number	Mean	SD	Comparison ($p < .05$) with group				
				1	2	3	4	5
1	14	3.29	3.47	-	*	*	NS	NS
2	14	11.86	.53		-	*	*	*
3	21	7.24	5.27			-	NS	NS
4	13	4.77	5.20				-	NS
5	22	4.36	4.39					-

* Newman-Keuls significant at $\alpha = .05$
 NS not significant

^aGroup 1 MSU Pre-Test
 2 MSU Post-Test
 3 Special Education Teachers in Vocational Education
 4 Elementary Special Education Teachers Not in Vocational Education
 5 Secondary Special Education Teachers Not in Vocational Education

Figure 8 shows the significantly higher mean score of the MSU post-test group (Group 2) than all of the other groups for Question 5. The groups in the analysis are presented along the horizontal axis and the mean scores for Question 5 are on the vertical axis in Figure 8.

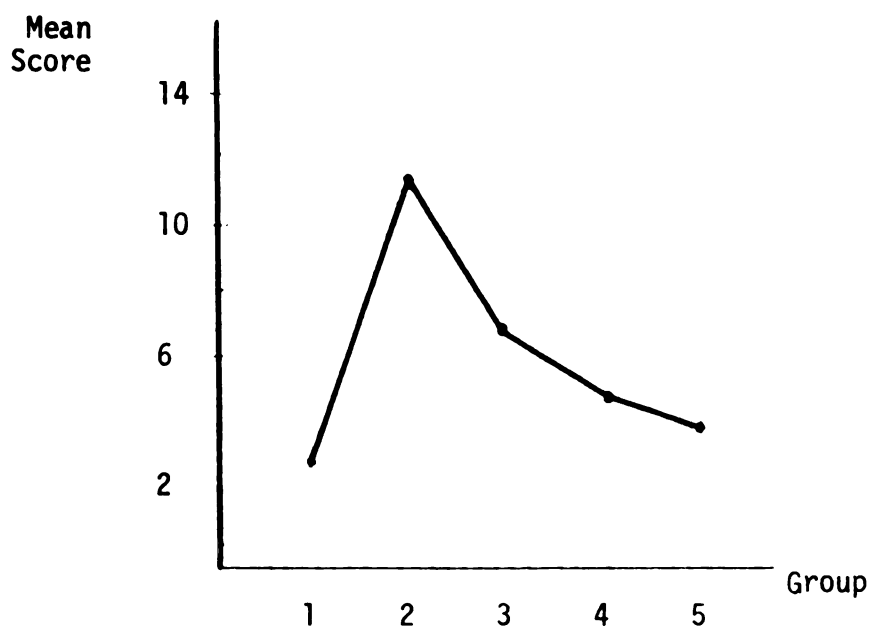


Figure 8

Mean Scores on Question 5 "Dialogue of the Special Needs Team Helping a Handicapped Student Succeed in a Lesson for a Vocational Training Program" for the MSU Pre-Test Group (1) and the MSU Post-Test Group (2) and for the Special Education Teachers Working with Vocational Training Programs (3), Special Education Teachers at the Elementary Level Not Working with Vocational Training Programs (4), and Special Education Teachers at the Secondary Level Not Working with Vocational Training Programs (5).

As shown in Table 14, the differences in mean scores among the five groups for Question 6 were significant at the .001 level. The dependent variable was the rating assigned by the evaluator to the answer given by the subjects to the question on a comparison of a regular cooperative vocational education work training program vs. a special education work-study program.

Table 14.1 shows that there were no significant differences among the groups in mean score for Question 6, except for the MSU post-test group (Group 2). The MSU post-test group had a significantly higher mean score.

TABLE 14

Analysis of Variance on the Mean Scores
for Question 6 on the Pre- and Post-Test
for the MSU Group and on the Post-Test for
the Special Education Teachers in the Field

Source of Variation	Degree of Freedom	Sum of Squares	Mean Square	F Ratio
Between groups	4	943.83	235.96	7.50**
Within groups	79	2483.41	31.44	
Total	83	3427.24		

**Significant at $\alpha = .001$

TABLE 14.1

Post-Hoc Comparisons (Newman-Keuls) on the Mean Scores for Question 6 on the Pre- and Post-Test for the MSU Group and on the Post-Test for the Special Education Teachers in the Field

Group ^a	Number	Mean	SD	Comparison (p<) with group				
				1	2	3	4	5
1	14	5.14	5.80	-	*	NS	NS	NS
2	14	15.00	1.52		-	*	*	*
3	21	8.95	6.05			-	NS	NS
4	13	5.08	6.76				-	NS
5	22	7.09	5.91					-

*Newman-Keuls significant at $\alpha = .05$
 NS not significant

^aGroup 1 MSU Pre-Test
 2 MSU Post-Test
 3 Special Education Teachers in Vocational Education
 4 Elementary Special Education Teachers Not in Vocational Education
 5 Secondary Special Education Teachers Not in Vocational Education

The significantly higher mean score of the MSU post-test group (Group 2) for Question 6 is shown in Figure 9. The groups in the analysis are presented along the horizontal axis and the mean scores for Question 6 are on the vertical axis in Figure 9.

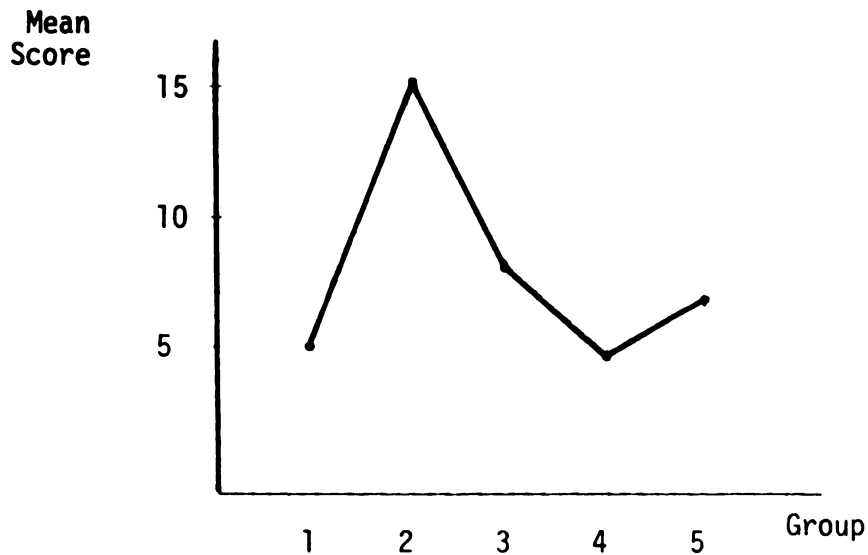


Figure 9

Mean Scores on Question 6 "Comparison of a Regular Cooperative Vocational Education Work Training Program vs. a Special Education Work-Study Program" for the MSU Pre-Test Group (1) and the MSU Post-Test Group (2) and for the Special Education Teachers Working with Vocational Training Programs (3), Special Education Teachers at the Elementary Level Not Working with Vocational Training Programs (4), and Special Education Teachers at the Secondary Level Not Working with Vocational Training Programs (5).

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As shown in Table 15, the differences among the five groups in mean scores for Question 7 were significant at the .004 level. The dependent variable was the rating assigned by the evaluator to the answer given by the subjects to the question on the interpretation of follow-up data for handicapped students who have graduated from a vocational training program.

Table 15.1 shows that there were no significant differences in mean scores for Question 7 among the MSU pre-test group (Group 1), the special education teachers working with vocational training programs (Group 3), and the special education teachers not working with vocational training programs, either at the elementary (Group 4) or secondary (Group 5) level. The MSU post-test group (Group 2) had a significantly higher score than that of Groups 1, 4, and 5 but the differences between the MSU post-test group and the special education teachers working directly with vocational training programs was not significant for Question 7.

TABLE 15

Analysis of Variance on the Mean Scores
for Question 7 on the Pre- and Post-Test
for the MSU Group and on the Post-Test for
the Special Education Teachers in the Field

Source of Variation	Degree of Freedom	Sum of Squares	Mean Square	F Ratio
Between groups	4	74.61	18.65	4.14**
Within groups	79	355.62	4.50	
Total	83	430.24		

**Significant at $\alpha = .004$

TABLE 15.1

Post-Hoc Comparisons (Newman-Keuls) on the Mean Scores for Question 7 on the Pre- and Post-Test for the MSU Group and on the Post-Test for the Special Education Teachers in the Field

Group ^a	Number	Mean	SD	Comparison (p<) with group				
				1	2	3	4	5
1	14	4.00	2.48	-	*	NS	NS	NS
2	14	6.00	0		-	NS	*	*
3	21	5.05	1.75			-	*	*
4	13	3.23	2.65				-	NS
5	22	3.73	2.49					-

*Newman-Keuls significant at $\alpha = .05$

NS not significant

^aGroup 1 MSU Pre-Test
 2 MSU Post-Test
 3 Special Education Teachers in Vocational Education
 4 Elementary Special Education Teachers Not in Vocational Education
 5 Secondary Special Education Teachers Not in Vocational Education

Figure 10 shows the significantly higher mean scores of the MSU post-test group (Group 2) and the special education teachers working directly with vocational training programs (Group 3) for Question 7. The groups in the analysis are presented along the horizontal axis and the mean scores for Question 7 are on the vertical axis in Figure 10.

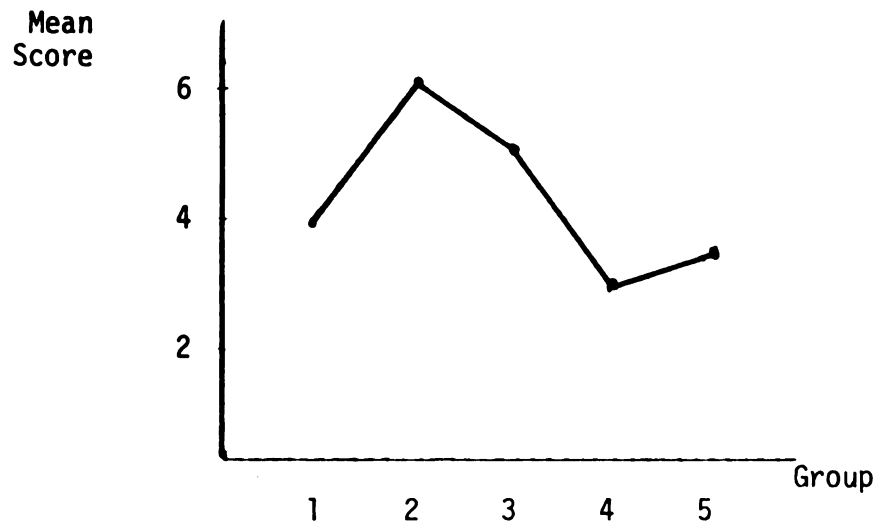


Figure 10

Mean Scores on Question 7 "Interpretation of Follow-Up Data for Handicapped Students Who Have Graduated from a Vocational Training Program" for the MSU Pre-Test Group (1) and the MSU Post-Test Group (2) and for the Special Education Teachers Working with Vocational Training Programs (3), Special Education Teachers at the Elementary Level Not Working with Vocational Training Programs (4), and Special Education Teachers at the Secondary Level Not Working with Vocational Training Programs (5).

Discussion

The research questions of this study to which this section addresses are:

- 1) How does the competency level of special education undergraduate majors after taking the course compare with that of special education teachers working with existing vocational training programs in local school districts for two years or more?
- 2) How does the competency level of special education undergraduate majors after taking the course compare with that of the special education teachers in local school districts who are not working with vocational training programs?

It was anticipated that: (1) special education teachers in local school districts not working directly with vocational training programs would have scores similar to the MSU pre-test group, and (2) special education teachers in local school districts working directly with vocational training programs would have scores similar to the MSU post-test group.

The results show that the special education teachers at the elementary level in local school districts who were not working directly with vocational training programs, did have a total mean score on the test instrument similar to the MSU class on the pre-test. However, the special education teachers at the secondary level in local school

districts not working directly with vocational training programs had a significantly higher mean score.

The special education teachers working directly with vocational training programs at the secondary level did not have a total mean score similar to the MSU class on the post-test as anticipated. The special education teachers in vocational education programs were apparently not getting all of the information on the job which was presented in the MSU class. One possible reason for this may be the newness of the information and the fact that most vocational training programs for handicapped students have not been in existence very long.

The information presented in the MSU class and on the test instrument was relevant to the work the teachers did at the local level according to the informal survey of special needs coordinators at the local level and the review of the literature done before this study was undertaken, as well as the content validity of the course reported in this study.

The instructional process for the MSU class must be considered as a factor in the difference in scores between the MSU post-test group and the special education teachers working in the field. The instructional process was built to insure success.

The mean score of the special education teachers at the secondary level who were not working directly with vocational training programs was not significantly different from that of the special education teachers who were working directly with vocational training programs.

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Therefore, it may be that special education teachers at the secondary level have already incorporated career and vocational related concepts into their classrooms. Their written responses on the test instruments seemed to have indicated this, and some wrote comments indicating that they wished that they had more information and skill in this area.

Eight of the 22 special education teachers at the secondary level who were not working directly with vocational special needs projects were special education work-study coordinators. Their total mean score was not significantly different from the other special education teachers at the secondary level. The total mean score for the work-study coordinators was 50.25 while the total mean score for the others in the group was 51.71.

With the exception of Question 7, the MSU post-test group had significantly higher mean scores than the other groups on all of the separate test questions. Although special education teachers working in vocational programs had higher mean scores than the special education teachers not working in vocational programs for all of the test questions except Question 4, the score was significantly higher only for Questions 1 (the steps in a management system for planning and implementing a vocational class for handicapped students), and 2 (the alternative vocational education programs available for handicapped students).

For Question 4 (describing a model vocational education delivery system for handicapped students) special education teachers at the secondary level not working with vocational training programs, had a

higher mean score than those special education teachers working directly with vocational programs. Here again, the difference was not statistically significant.

To summarize, the competency level, as measured by a test instrument, of the special education undergraduate majors after taking the course at MSU, was significantly greater than that of both special education teachers working directly with vocational training programs at the local level and those special education teachers who were not working directly with vocational training programs.

Attitude of MSU Class Towards

Vocational Education for the Handicapped

A 25 item attitude questionnaire (Appendix D) was administered both at the beginning of the course and at the end to determine if there was any change in attitudes of the MSU undergraduate majors towards vocational education for handicapped students.

An analysis of variance test was used to determine if there were any significant changes in attitudes from the pre-questionnaire to the post-questionnaire. As shown in Table 16, the attitudes of the MSU students towards vocational education for handicapped students increased in the positive direction at the .02 significance level. At the same time there was less variability in attitudes at the end of the course.

TABLE 16

Analysis of Variance of the Change in Attitudes
of the MSU Class Towards Vocational Education
for Handicapped Students from the Pre- to
the Post-Questionnaire

Group	Number	Mean	SD	F
Pre	14	77.57	4.05	5.36*
Post	14	80.93	3.60	

*Significant at $\alpha = .02$

A two-tailed test of significance was used to determine the most frequent type of experiences or contact the MSU students had with vocational education while taking the course. Presented in Table 17 are the demographic items with the frequency for each response and the mean and standard deviation for each item.

TABLE 17

Frequency of Experiences or Contact the MSU
Students had with Vocational Education with
the Mean and Standard Deviation for Each Item

N=14

Variable - Item	Frequency
-----------------	-----------

Means of Contact

1. Contacts I have had with vocational education have been basically by means of

1) no contact	1
2) contact with professors in vocational education	7
3) contact with students and/or graduates from vocational education programs	4

TABLE 17 (Continued)

Variable - Item	Frequency
4) participated in vocational education program myself in high school or post high school	1
5) contact through newspapers, radio, or TV	1
Mean = 2.57	SD = 1.01
2. <u>Amount of Contact</u>	
How many incidences have you had contact with the aspects of vocational education listed in the previous question?	
1) none	0
2) 1 to 5 times	6
3) 6 to 10 times	5
4) 11 to 20 times	2
5) more than 20 times	1
Mean = 2.85	SD = .94
3. <u>Kind of Contact</u>	
Indicate the kind of contact you have had with vocational education.	
1) no contact	0
2) by study or reading	3
3) casual or accidental	1
4) through visiting programs as a result of a class	8
5) achieved by my own incentive	2
Mean = 3.64	SD = 1.00
4. <u>Importance of Contact</u>	
Experiences I have had from contacts with different aspects of vocational education are:	
1) no contact	0
2) not important to me	0
3) important for my future professional work	13
4) decisive for my future professional work	1
Mean = 3.07	SD = .26

The means of contact half of the students in the MSU class had with vocational education was through professors in vocational education. Four had contact with students or graduates from vocational education programs in local school districts. The majority of the MSU students had contact with the above aspects from about one to ten times. The contacts eight of the MSU students had with vocational education were through visiting programs as a result of a class. The majority of the MSU students felt that the experiences they had with vocational education were important for their future professional work.

The frequency for each attitude response was computed for the pre- and post-questionnaire to show how the attitudes of the MSU students changed from the beginning of the course to the end. The results are reported in Table 18. The most desired response for each item is number (4). This number represents the most accumulation of points towards positive attitudes.

TABLE 18

Responses of the MSU Students to the Items
on the Pre- and Post-Attitude Questionnaire
with the Frequency for Each Response Chosen
and the Percent of the Total MSU Group

N=14

Item	Pre		Post	
	<u>freq</u>	<u>%</u>	<u>freq</u>	<u>%</u>
1. As compared to other kinds of high school education for handicapped students, I believe that vocational education is:				
1) much less important	0	0	0	0
2) less important	0	0	0	0
3) more important	10	71	7	50
4) much more important	4	29	7	50
2. I believe that vocational education for handicapped students at the high school level is a waste of time.				
1) strongly agree	0	0	0	0
2) agree	0	0	0	0
3) disagree	2	14	1	7
4) strongly disagree	12	86	13	93
3. I believe that handicapped students would be interested in vocational education to satisfy their life goals.				
1) strongly disagree	0	0	0	0
2) disagree	0	0	0	0
3) agree	10	71	7	50
4) strongly agree	4	29	6	43

TABLE 18 (Continued)

Item	Pre		Post	
	<u>freq</u>	<u>%</u>	<u>freq</u>	<u>%</u>
4. I believe that vocational education for handicapped students helps to raise their social adaptability level.				
1) strongly disagree	0	0	0	0
2) disagree	0	0	0	0
3) agree	4	29	4	29
4) strongly agree	10	71	10	71
5. I believe that vocational education is primarily for handicapped students who are mentally impaired.				
1) strongly agree	1	7	0	0
2) agree	1	7	1	7
3) disagree	5	36	3	21
4) strongly disagree	7	50	10	71
6. I believe it is more difficult for a handicapped high school student to be accepted by his peers socially if he/she is in a vocational education program.				
1) strongly agree	0	0	0	0
2) agree	3	21	3	21
3) disagree	7	50	7	50
4) strongly disagree	4	29	4	29
7. I believe that vocational education at the high school level equips the handicapped student for practical work.				
1) strongly disagree	0	0	1	7
2) disagree	0	0	0	0
3) agree	11	79	10	71
4) strongly agree	3	21	3	21

TABLE 18 (Continued)

Item	Pre		Post	
	<u>freq</u>	<u>%</u>	<u>freq</u>	<u>%</u>
8. I believe that vocational education for handicapped students at the high school level facilitates early employment.				
1) strongly disagree	0	0	0	0
2) disagree	3	21	1	7
3) agree	8	57	7	50
4) strongly agree	3	21	6	43
9. With regards to on-the-job performance, I believe that handicapped students who graduate from vocational education programs, as compared to those who do not, are:				
1) much less efficient	0	0	0	0
2) less efficient	0	0	0	0
3) more efficient	8	57	4	29
4) much more efficient	6	43	10	71
10. I believe that vocational education should be provided for handicapped boys only.				
1) strongly agree	1	7	1	7
2) agree	0	0	0	0
3) disagree	0	0	0	0
4) strongly disagree	13	93	13	93
11. I believe that the intelligent handicapped student <u>does not</u> participate in vocational education at the high school level.				
1) strongly agree	0	0	0	0
2) agree	1	7	0	0
3) disagree	11	79	5	36
4) strongly disagree	2	14	9	64

TABLE 18 (Continued)

Item	Pre		Post	
	<u>freq</u>	<u>%</u>	<u>freq</u>	<u>%</u>
12. I believe that handicapped students with manual skills are the <u>only ones</u> who participate in vocational education programs at the high school level.				
1) strongly agree	0	0	0	0
2) agree	2	14	0	0
3) disagree	10	71	7	50
4) strongly disagree	2	14	7	50
13. I believe that vocational education for handicapped students <u>should not</u> be the primary responsibility of the special education teacher.				
1) strongly agree	0	0	3	21
2) agree	8	57	8	57
3) disagree	6	43	2	14
4) strongly disagree	0	0	1	7
14. I believe that vocational training at the high school level does not prepare handicapped students for entry level job skills.				
1) strongly agree	0	0	0	0
2) agree	0	0	1	7
3) disagree	11	79	5	36
4) strongly disagree	3	21	8	57
15. I believe that in most high schools, vocational training is designed to take care of special education and disadvantaged students.				
1) strongly agree	0	0	0	0
2) agree	4	29	0	0
3) disagree	10	71	10	71
4) strongly disagree	0	0	4	29

TABLE 18 (Continued)

Item	Pre		Post	
	<u>freq</u>	<u>%</u>	<u>freq</u>	<u>%</u>
16. I believe that most handicapped students are not capable of completing a regular high school vocational program.				
1) strongly agree	0	0	0	0
2) agree	2	14	1	7
3) disagree	9	64	9	64
4) strongly disagree	3	21	4	29
17. I believe that special "segregated" vocational training programs are necessary for most handicapped students to be able to acquire the necessary job skills.				
1) strongly agree	0	0	0	0
2) agree	4	29	1	7
3) disagree	9	64	12	86
4) strongly disagree	1	7	1	7
18. I believe that handicapped students ought to be hired for a job <u>only</u> if there are no qualified people who are not handicapped seeking the job.				
1) strongly agree	0	0	1	7
2) agree	0	0	0	0
3) disagree	3	21	1	7
4) strongly disagree	11	79	12	86
19. I believe that certain jobs ought to be reserved for the handicapped.				
1) strongly disagree	0	0	0	0
2) disagree	10	71	9	64
3) agree	3	21	5	36
4) strongly agree	1	7	0	0

TABLE 18 (Continued)

Item	Pre		Post	
	<u>freq</u>	<u>%</u>	<u>freq</u>	<u>%</u>
20. I believe that handicapped students <u>should not be allowed</u> to prepare for any kind of hazardous occupations.				
1) strongly agree	0	0	0	0
2) agree	0	0	0	0
3) disagree	14	100	12	92
4) strongly disagree	0	0	1	8
21. I believe that the less employers know about the handicapping conditions, then the better chance the handicapped student has to succeed on the job.				
1) strongly agree	0	0	0	0
2) agree	6	43	5	36
3) disagree	4	29	5	36
4) strongly disagree	4	29	4	29
22. I believe that handicapped students when employed lose their jobs more often than those who are not handicapped.				
1) strongly agree	0	0	0	0
2) agree	9	64	5	36
3) disagree	3	21	7	50
4) strongly disagree	2	14	2	14
23. I believe that when handicapped students lose their jobs, it is usually because of their inability to perform the job tasks involved.				
1) strongly agree	0	0	0	0
2) agree	4	29	3	21
3) disagree	7	50	8	57
4) strongly disagree	3	21	3	21

TABLE 18 (Continued)

Item	Pre		Post	
	<u>freq</u>	<u>%</u>	<u>freq</u>	<u>%</u>
24. I believe that handicapped students are less satisfied with their work when employed than the non-handicapped.				
1) strongly agree	0	0	0	0
2) agree	3	21	3	21
3) disagree	7	50	8	57
4) strongly disagree	4	29	3	21
25. I believe that employers are generally less satisfied with the job performance of handicapped students than they are of those who are not handicapped.				
1) strongly agree	0	0	0	0
2) agree	5	36	4	29
3) disagree	6	43	7	50
4) strongly disagree	3	21	3	21

Discussion and Interpretation

With a possible score range from 25 to 100 on the attitude questionnaire, the MSU class started out with quite positive attitudes towards vocational education for handicapped students, as shown in Table 16. However, the attitudes became significantly more positive after taking the course. Data from Table 17 indicates that the experience with the new course "Vocational Education for Handicapped Students" may be one of the primary contacts the MSU students have had with vocational education.

Some facts concerning the realities of the work world and situations observed during field visitations, may have influenced some of the attitude responses given by the students in the MSU class. For example, for the attitude depicted in item 6 in Table 18, some coordinators and teachers of programs visited by the MSU students spoke to more difficulty of acceptance of the handicapped by their peers when placed in a vocational class, even though this isn't necessarily always the case. Regarding item 22, the follow-up statistics of some vocational programs show a low job placement rate for handicapped students, though it may have been true for the general student population as well because of the economy.

For purposes of the MSU class item 13 is probably poorly worded. The special education teacher does have a primary responsibility in making a vocational program successful for handicapped students. At the same time, success for the handicapped is dependent upon the

responsibility of vocational education, special education, and vocational rehabilitation. To what extent this philosophy reiterated in the MSU class, influenced attitudes the students came out with is hard to determine.

Item 15 refers to a philosophy in vocational education in that it is not a dumping ground for those who can't make it academically. It appears that the students in the MSU class came out with the attitude that vocational education can be beneficial to all students.

Instruction during the MSU class emphasized equal opportunity for the handicapped in the work world and making them competitive. Though laws passed on equal employment opportunity for the handicapped were referred to in class, item 19 was not spoken to directly. This item clearly finds out the prevailing attitude of the students on whether they feel society has an obligation to reserve certain jobs for the handicapped.

Factual information from programs the MSU students visited probably influenced their responses to item 21. The students saw programs where employers did not know all of the handicapping conditions and others where they did. More successful programs were seen of the latter.



CHAPTER IV

SUMMARY, CONCLUSIONS, AND RECOMMENDATIONS

Summary

Federal legislation, namely the Vocational Education Amendments of 1968, has mandated that handicapped students be given the opportunity to participate in vocational education programs at the secondary level. In Michigan, the Mandatory Special Education Law states that special education students must have as a minimum before they can graduate the following: (1) personal adjustment training, (2) pre-vocational training, and (3) vocational training.

Special education and vocational education teachers and administrators find themselves working in schools which are attempting to meet the requirements of this legislation but have no training or experience on how to work with these new programs.

The review of literature on the need for teacher preparation for those who work or will be working in vocational programs serving handicapped students is summarized with the following statements:

1. The national and state mandate that the three agencies of Vocational Education, Special Education, and Vocational Rehabilitation Services are expected to cooperate at the local level when serving handicapped students in vocational training programs, ought to be reflected in the university pre-service teacher training programs for the personnel who will work on this team.

2. National surveys administered to vocational education personnel serving handicapped students in vocational programs indicate that a critical need exists for pre-service programs to train these personnel for their existing or future positions.
3. Because special education teachers are trained for the elementary level, the special education teacher finding himself or herself teaching at the secondary level is at a loss as to what to expect in achievement as well as how to develop a vocationally oriented curriculum. Work-study coordinators at the secondary level have a need for additional organizational skill which is not obtained through special education elementary certification programs.
4. Some suggested approaches for certification of teachers working with the handicapped at the secondary level are the dual certification in subject matter and disability area, or a new type of special certification for this role.
5. In order to prepare handicapped students for today's work world, special education teachers at the secondary level must be trained both in aspects of vocational education and vocational rehabilitation. Suggested areas for competence include Work Adjustment, Job Seeking, Job Tryouts, Job Placement, Job Analysis, Vocational Evaluation and Diagnosis, Academic Demands of Jobs, Techniques for Development of a

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Work Study Program, Community/Social Welfare/ Rehabilitation Agencies, and study of the pre-vocational areas of Industrial Arts, Homemaking, Family Living, Health and Safety.

6. In order for handicapped students to be truly integrated into vocational education programs, vocational education personnel must be trained in the area of handicapping conditions and in how to program students with the various handicaps into vocational programs.
7. Pre-service and inservice training programs are also needed for those personnel who are in the growing number of managerial positions in vocational programs serving handicapped students at the local level. This applies to the personnel whether they are vocationally certified or special education certified.
8. Both vocational educators and special educators see a need for a cooperative approach in integrating handicapped students into vocational programs and see a need for training to accomplish this from the university teacher training program.

The specific problem that was being addressed in this study was that the special education majors at MSU had little in their curriculum which prepared them to work at the secondary level or to serve handicapped students in vocational training programs.

The purpose of this study was to determine whether a new course entitled "Vocational Education for Handicapped Students" specifically

developed for special education undergraduate majors at Michigan State University, adequately prepared them to begin serving handicapped students in vocational programs at the secondary level.

Both formative and summative procedures were used to evaluate the new course. The formative evaluation procedure was a detailed description of the extent to which the objectives and activities of the course accomplished what was intended. The summative evaluation procedure consisted of measuring the increase in scores on a pre- and post-test instrument, and a measure of the change in attitudes toward vocational education for handicapped students, using a pre- and post-questionnaire.

A pilot test group of eight special education undergraduate majors was used to help determine which course objectives and activities were most effective for implementation for the experimental class. Fourteen special education undergraduate majors were enrolled in the experimental class spring term, 1976.

The pre- and post-test questions for the experimental class consisted of seven course objectives deemed to be of highest priority. A one way analysis of variance test was used to determine if there were any significant differences in total mean score between the pre- and post-test for the MSU class as well as for the scores for each of the seven test questions.

The total mean score for the 14 MSU students on both the pre- and post-test as well as the mean scores for each of the seven test questions, were then compared to:

- (a) 21 special education teachers working in Vocational Special Needs Funded Projects at the secondary level.
- (b) 13 special education teachers at the elementary level not working in vocational training programs.
- (c) 22 special education teachers at the secondary level not working in vocational training programs.

The Newman-Keuls Post-Hoc Procedure was used to determine where the differences in mean scores among the groups in the analysis existed. The Procedure was used for the total mean score on the test as well as for each of the seven test questions.

Four experts in the field of vocational education for handicapped students in Michigan validated the content of the course, and as represented on the test instrument. Four people working in the field in special needs related programs rated a set of 20 test instruments according to the scoring manual developed. A high measure of inter-rater reliability was found.

The first research question in the evaluation plan for the study was:

What is the gain in competency evidenced by the special education undergraduate majors taking the course?

Robert Stake's (1967) model of evaluation was adapted for the formative evaluation procedure to determine competency of the MSU students in the course. A Descriptive Matrix reported the congruencies or discrepancies between what was intended for the course (background

conditions, activities, and outcomes) and what actually was observed happening as the course was taught. In the majority of instances the observations were congruent with the intents.

Suggestions for improving instruction were made for each of the six modules of the course, as a result of student and instructor evaluation. Recommendations made by both the pilot test group and experimental class for teaching the new course were summarized.

The results of the summative evaluation procedure showed that the total mean score of the MSU experimental group on the post-test increased significantly over the total mean score on the pre-test. This increase was also significant for all of the seven test questions. The high gain in post-test scores was attributed to the competency-based instructional process.

The second and third research questions for the study were:

How does the competency level of special education undergraduate majors after taking the course compare with that of special education teachers working with existing vocational training programs in local school districts for two years or more?

How does the competency level of special education undergraduate majors after taking the course compare with that of special education teachers in local school districts who are not working with vocational training programs?

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The results showed that, as anticipated, the special education teachers at the elementary level not working with vocational training programs, had a total mean score on the test similar to that of the MSU group on the pre-test. Also as anticipated, the special education teachers working directly with vocational training programs had a total mean score greater than that of special education teachers not working in vocational training programs. However, this total mean score was significantly greater only when compared to the special education teachers at the elementary level not working in vocational training programs.

It was suggested that perhaps special education teachers at the secondary level not working directly with vocational training programs, still were incorporating career and vocational related concepts into their classrooms.

The special education teachers working directly with vocational training programs did not have a total mean score similar to the MSU group on the post-test as anticipated. The total mean score of the MSU group on the post-test was significantly higher than that of all of the other groups. The competency-based instructional process was considered a factor in the higher mean score. It was also suggested that the fact that vocational training programs for handicapped students are relatively new in existence, may have accounted for some lack of information and skill on the part of special education teachers working with vocational training programs in local school districts.

The MSU post-test group also had significantly higher mean scores than the other groups on all of the separate test questions, except for Question 7. For this question, which dealt with the interpretation of follow-up data when evaluating vocational training programs for handicapped students, the special education teachers working directly with vocational training programs at the secondary level had similar scores to those of the MSU group on the post-test.

To summarize the findings, the results indicate that the competency level, as measured by the test instrument, of the special education undergraduate majors after taking the course at MSU, was significantly greater than that of both special education teachers working directly with vocational training programs at the local school district level and those special education teachers who were not working directly with vocational training programs.

The fourth research question of the study was:

What is the change in attitude of the special education undergraduate majors towards vocational education for handicapped students after taking the course?

The results from an analysis of variance test indicated that the attitudes of the MSU students became significantly more positive towards vocational education for handicapped students at the end of the course. The results also indicated that the experience with the experimental course was one of the primary contacts the MSU students had with vocational education.

Conclusions

Based on the findings of the study, the following may be concluded:

1. A ten week undergraduate course in "Vocational Education for Handicapped Students" is adequate for special education majors to begin serving handicapped students in vocational training programs at the secondary level. Special education undergraduate majors are able to gain from the course ability to plan, implement, and evaluate vocational training programs for handicapped students.
2. A ten week undergraduate course in "Vocational Education for Handicapped Students" can be instrumental in attitude change. Special education undergraduate majors can become more positive about the provision of vocational education for handicapped students after taking the course.

Recommendations

Based upon the findings and conclusions of this study, the following recommendations are made for further evaluation of a pre-service course such as designed in this study:

1. Although a ten week course was adequate for the special education undergraduate majors in this study to begin serving handicapped students in vocational training programs, formative evaluation procedures revealed that too

much material was covered. At the same time, all of the material was considered vital to the area of serving handicapped students in vocational training programs.

- a. It is recommended that at least a three term sequence be developed for the content of this course. The sequence should include (1) basic background information needed, particularly in the coordination required of vocational education, special education, and vocational rehabilitation services at the local school district level; (2) adaptation and use of instructional materials available for handicapped students in vocational education; (3) field experiences in a vocational training program serving handicapped students at the local school district level.
- b. Two students enrolled in the experimental course independently and achieved the same objectives as the other students in the class. It could be appropriate to add modules to the basic course taught, giving the students an option to choose the modules they feel most pertinent to their background, or giving them the option of taking up to nine credits for the course independently throughout the school year.

2. Robert Stake's (1967) model is recommended as a guide for a formative evaluation procedure for university course development. The model forces one to collect data which describes whether what was stated for course instruction was actually accomplished. When discrepancies are noted, suggestions for improving instruction can more easily be made.
3. A better means of measuring the competency level of special education teachers in the field is needed, rather than using a pre- and post-test instrument developed for an undergraduate class. Because vocational programs designated as serving special needs students are relatively new and the role of the special education teacher varies in these programs, perhaps a technique such as a structured interview or a participant-observer study would elicit more accurate information as to the knowledge and competency that these teachers have in serving handicapped students in vocational training programs.
4. Long range evaluation plans for the development of a pre-service program preparing special education majors to serve handicapped students in vocational training programs, should include a follow-up of the majors and measurement of competency on-the-job in special needs related programs.

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Implications for the Future

There were some questions related to this study which came up after the research was done. The following recommendations are not supported by the results of the study itself. However, they are related to the informal evaluation of the course as it was developed and implemented and are based upon the personal reactions and experiences of the researcher. It is hoped that these recommendations will stimulate further research so that handicapped students may be adequately served in vocational education programs.

1. Further development and research of competency-based instruction is recommended for teaching the modules of a course in "Vocational Education for Handicapped Students." It is recommended that a pre- and post assessment be developed for each module as a separate unit, rather than putting the emphasis on a pre- and post-class test as was done in this study. Total packets need to be developed for each module of the course.
2. It is recommended that development of a "simulated course" be explored for preparing teachers at the pre-service level to serve handicapped students in vocational training programs. The simulation would allow the special education majors to experience first hand in local schools the role of the special education teacher in a vocational training program.

Responses of the special education majors to critical situations could be observed with opportunity to evaluate performance "on-the-job."

3. Further evaluation and possible development of a competency-based curriculum could consider the integration of selected modules from the course in "Vocational Education for Handicapped Students" into existing courses in the Special Education Department of the university.
4. It is recommended that the content of the course in "Vocational Education for Handicapped Students" be made available through inservice activities and graduate level courses for special education teachers working directly with vocational education special needs funded projects.
5. Further development of attitude surveys on vocational education for the handicapped would be useful. The attitudes pre-service teachers have towards the provision of vocational education for the handicapped may be just as important to on-the-job performance as competency demonstrated in a pre-service course.

6. An extensive nation-wide assessment of teacher preparation programs in colleges and universities preparing teachers to work with handicapped students in vocational education would be useful to more accurately determine the need for such programs as well as provide ideas for curriculum development at the university level. The assessment should include new teacher preparation programs being developed in vocational education departments as well as special education departments.
7. For long range plans, a new certification plan is recommended at the university with a pre-service curriculum specifically designed to prepare both special education teachers and vocational education teachers to work with handicapped students at the pre-vocational level as well as in vocational training programs. The curriculum should include a strong component in vocational rehabilitation counseling and services, as well as course work in both special education and vocational education.

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APPENDICES

APPENDIX A

COURSE SCHEDULE, MODULE RATIONALE, OBJECTIVES, ACTIVITIES

COURSE SCHEDULE, MODULE RATIONALE, OBJECTIVES, ACTIVITIES

MICHIGAN STATE UNIVERSITY
 COLLEGE OF EDUCATION
DEPARTMENT OF ELEMENTARY AND SPECIAL EDUCATION

Spring 1976
 Virginia Kozlowski

VOCATIONAL EDUCATION FOR HANDICAPPED

<u>Date</u>	<u>Activities</u>
March 31	Pre-test Attitude Questionnaire Module I - What is Vocational Education?
April 7	Module I
April 14	Module II Identification and Eligibility of Handicapped Students for Vocational Training Programs Model III Money and Resources - Who to Contact
April 21	Module IV How to Sequence Programming Part A - Career Development Goals
April 28	Module IV Part B - Pre-Vocational Components
May 5	Module IV Part C - Vocational Training Visitation of programs
May 12	Module IV Part D - Post School Vocational Training
May 19	Module V Liaison Activities in Vocational Programming Serving Handicapped Students
May 26	Module V
June 2	Module VI Evaluation and Follow-up Services of Vocational Programs for the Handicapped
June 8 12:45-2:45 pm	Post-Test Evaluation of Course

MICHIGAN STATE UNIVERSITY
COLLEGE OF EDUCATION
DEPARTMENT OF ELEMENTARY AND SPECIAL EDUCATION

Vocational Education Seminar
Virginia Kozlowski

Module I

Rationale

This module is designed to acquaint you with the definition of vocational education and how vocational education fits into the total school program. The illustration on Career Education attempts to show you that vocational education is only one aspect in the career development of the student.

A special education teacher in some school systems has the responsibility of teaching a vocational education class for his/her students. In other school systems, the special education teacher must assist the vocational education teacher in providing supportive services in order that the special education student can succeed in the vocational program. Included in this module are the steps you would go through in planning a vocational education course for a special education student.

Activities

1. Participate in the Career Brainstorming Exercise.
2. Using the handouts provided, determine which of the high school classes are vocational. Classify these into the USOE Occupational Clusters, whether the class deals mostly with data, people, or things, and determine the entry level skills for each vocational class.
3. Read the article by Klinkhammer on Career Education for the Handicapped and how vocational education is part of career education.
4. Study the illustrations showing how vocational education is part of the career development and preparation of the student, and its relationship to the total school program.
5. Interview a worker to determine the tasks involved in his/her job and each step involved in performing each task. As a special education teacher working with vocational programs, you will be assisting the student in accomplishing the type of performance required for each step in performing job tasks.
6. There is a trend towards competency-based education for handicapped students as well as for all students. Read the handout comparing a competency-based-curriculum with the traditional educational program.

Objectives for Module I
What is Vocational Education?

1. Given a list of several educational programs offered at a typical large high school, you will select those which are "vocational" according to the definition of vocational education as given in class.

For those which you select as vocational you will:

- (1) Classify as to USOE Occupational Cluster
 - (2) Classify as to whether the program area deals mostly with data, people, or things.
 - (3) Identify the sample entry level skills for that program. (Sample groupings of skills are provided on a hand-out.)
2. Given a list of definitions, you will match the definition with the term used in vocational education which it describes.
3. Given a list of tasks performed on a particular job, you will determine the frequency and importance of each job task to the job itself. Your check sheet will be validated by a person in that actual job.
4. For one of the job tasks, you will list all the steps involved and indicate the type of performance each step requires such as discrimination, recall, etc.
5. Given an outline of the steps to be followed in a management system for a local vocational education program and given a specific vocational training program for senior high school students, you will explain what should be done at each step for that specific program.
6. Given a list of program characteristics, you will indicate those which describe a Competency-Based-Education Curriculum, according to information gained in class.

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Vocational Education Seminar
Virginia Kozlowski

Module II

Rationale

This module is intended to stress the importance and need for a joint decision on the vocational education placement of the special education student. Both the vocational education teacher an/or work-study coordinator and the special education teacher must participate in the Educational Planning and Placement Committee meeting, along with other diagnostic and administrative personnel and parents of the students. Crucial decisions that determine the alternatives and placement in vocational programming are made at this meeting.

The module also attempts to give you some practice in conducting and participating in an EPPC meeting. Criteria for an effective EPPC meeting are presented.

Activities

1. Read the hand-out Functions and Procedures for Special Educational Planning and Placement Committee developed by the Ingham Intermediate School District. Note the duties of the committee and the recommended procedure for conducting the meeting as well as the role of each committee member.
2. Read the background material and vocational evaluation reports for Bob. Make a tentative placement decision based upon this information available in the Case Study.
3. In class role play an EPPC meeting, together making a recommendation for the vocational education placement for the student in the Case Study.
4. Assess the meeting you role played according to the "Criteria for Effective EPPC Meetings" created by Gregory Osmun.

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Vocational Education Seminar
 Virginia Kozlowski

Objective for Module II Identification and Eligibility
 of Handicapped Students for Vocational Training Programs

After observing (or role-playing) an Educational Planning and Placement Committee meeting, you will:

- (1) Identify the status of the handicapped student involved as to age, grade level, handicapping condition, and background information.
- (2) List the needs of the student as stated by the committee.
- (3) List the alternatives presented by the committee's professional representatives.
- (4) List the academic, personal/social, and vocational recommendations made by the committee members.

Using the check list provided in class of "Criteria for Effective EPPC Meetings," you will assess the process you observed.

Objectives for Module III
 Money and Resources - Who to Contact

1. Given the role of a Special Education teacher who by law must provide vocational training for his/her students:
 - a. Explain the criteria you would use to select the students for the vocational training program (criteria according to Disadvantaged/Handicapped Unit VTES/MDE).
 - b. Indicate whether you propose a segregated, modified, or integrated vocational education program. Support your decision.
 - c. Explain how the vocational education program for your special education students would be different from the regular vocational education program in the school.
 - d. List the costs of this new program which would be reimbursable by the Disadvantaged/Handicapped Unit, VTES/MDE.
 - e. Describe your role as a Special Education teacher in the Special Needs Vocational Education Program.
 - f. Describe the roles of other team members involved in the program
 1. Administrator or Coordinator
 2. Vocational Education Teacher
 3. Paraprofessional or other support personnel

2. Given a description and program criteria of a vocational alternative available to handicapped students, you will indicate which type of program is being described:

- a. Regular vocational education program.
- b. Adapted vocational education program.
- c. Special vocational education program.

According to that described in the VE/SE/VRS Cooperative Agreement.

3. Given a description of a problem situation in a vocational training program serving Special Education students, you will indicate the source of information and or funding that you would go to for help in solving this problem. The sources are the following state agencies.

- a. Special Education
- b. Vocational Education
- c. Vocational Rehabilitation Services

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Module III

Rationale

This module is designed to familiarize you with the guidelines for funding vocational education programs for handicapped students, both at the federal and state levels. With knowledge of funding sources, you will be able to contact the proper state agency for information and resources as you are working in programs in local school districts.

As you become familiar with funding patterns you also will become familiar with the roles of the personnel working in vocational programs for handicapped students. You will be able to see how the roles of the personnel involved, particularly your role as a special education teacher, function to modify the regular vocational education program so that the handicapped students can succeed.

Activities

1. Read and discuss in class selected excerpts from DHEW Publication No. (OE) 73-11700. This document relates the intent of the Vocational Education Amendments of 1968 and the definition of "handicapped" used in vocational programming.

2. Discuss the Michigan State Plan for Vocational Education and the function of the following as part of the State Plan:

- a. Advisory Councils: Vocational Education, Special Education, Vocational Rehabilitation Services.
- b. Coordination with CEPD and ISD Plan.
- c. "Added Costs" for vocational education.
- d. VE/SE/VRS Cooperative Agreement.
- e. Additional funds from CETA, Social Services, National Association for Retarded Citizens.

3. Read and discuss documents from the state of Michigan:

- a. Guidelines for Vocational Education Programs For Persons with Special Needs for FY 1975-76, Disadvantaged/Handicapped Unit, VTES, MDE.
- b. Provisions of the Mandatory Special Education Legislation: VE/SE/VRS Cooperative Agreement.

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Module IV

Rationale

The crux of the course lies in this module. You will be visiting and comparing alternate delivery stems of vocational training programs for handicapped students. You will be able to see the roles in operation of the personnel involved in vocational programming, particularly the various roles you may find yourself in as a special education teacher.

You will seek and obtain information on your role as a special education teacher as it begins during the career development activities provided for handicapped students and progresses to the pre-vocational activities which must be provided before students enter a vocational training program. Then you will see the cooperation needed between the vocational education personnel and the special education personnel and the activities provided to enable the handicapped student to succeed in vocational programs. You will also look at some post-school alternatives available for handicapped students.

Activities

Career Development Goals

1. Fill in your "Coat of Arms" to bring out your own self-awareness, values, interests, etc.
2. Do "Things I Like" exercise to see if you act according to what you say your values are.
3. Participate in "Career Choice Game" to see if your choice of occupation matches your work values, general interests, knowledge and skills, aptitude, and amount of education you desire.
4. Participate in "Stereotypes" and "Who Does It?" exercises and discuss how we stereotype jobs according to sex.
5. Read the situations involving ethics between employers and employees and discuss what you would do if you were the employee. Discuss how we help handicapped students to develop positive job attitudes.
6. Discuss the hand-out of Basic Skills taught in the classroom related to a person-in-the-occupation and life-centered activity.
7. Look at the sample Career Education Projects designed for handicapped students:
 - a. Project PRICE
 - b. MEAD - Oakland

8. Look at some sample career education activities appropriate for handicapped students and be able to tell how you would use them for one category of handicapped students.

Following are some examples of resources available through the Special Education Department:

- a. King Features Career Awareness Program. Includes comic books on career awareness, wall charts, bingo game, and teacher's guide. Available through King Features, 235 East 45th Street, New York, New York 10017.
- b. Vocational English Book One, Two, and Three
Forms in your Future
Newspaper Workshop
Available through Globe Book Co., 175 Fifth Avenue, New York, New York 10010
- c. The Turner Career Guidance Series
 1. Wanting a job
 2. Training for a job
 3. Starting a job
 4. Look for a job
 5. Holding a job
 6. Changing a job

Available through Follet Publishing Co., Chicago.
- d. Meeting Yourself Halfway. 31 Value Clarification Strategies for Daily Living by Sidney Simon. Available through Argus Communications, Niles, Illinois 60648.

Activities

Pre-Vocational

1. Build a pyramid of jobs within one occupational cluster. Decide on the hierarchy of jobs related to the training and responsibility required of each. Discuss how the pre-vocational skills start to prepare people for the jobs.
2. Observe the Work Evaluation Samples at Capital Area Career Center. Discuss how this system can be used to measure and predict vocational aptitude and potential.
3. Read handouts on the JEVS Work Evaluation System.
4. Look at the Vocational Appraisal Form used by Vocational Rehabilitation Service. Discuss which job success skills you can start building at the junior high school level.

5. Listen to the explanation of the Pre-Vocational Project developed at Central Michigan University. Note the method of assessment used and techniques for developing:
 - a. the common skills needed for all the occupational clusters.
 - b. the cognitive, affective, and psychomotor skills needed for each occupational cluster in addition to the common area.

Activities

Vocational Training

1. Observe a handicapped student at Capital Area Career Center using the modules developed from the "language of the task" in the Central Michigan University Task Modules. Determine if any adaptations need to be made in order for the student to learn the content of the module. Make any recommendations needed for this particular handicapping condition.
2. Visit one type of Delivery System in Vocational Education for Handicapped Students:
 - a. Area Center
 - b. Comprehensive High School
 - c. Shared-Time

Be prepared to share with the class the roles of the special education teacher, the vocational education teacher, and other support personnel as they function in this system. Interview the personnel involved to obtain the information required on the check list provided in class.

3. If you are able to, trace one student in the delivery system you visit beginning with the recommendations of the EPPC through the pre-vocational components and as functioning in a vocational training program.

Activities

Post-School Vocational Training

1. Discuss the new project in Michigan involving three community colleges testing selected occupational training programs as to their feasibility for job re-engineering or job modification for severely disabled clients.
2. Listen to personnel from a post-secondary special needs program discuss the options available and provisions made for handicapped students at this level and the continuity provided from secondary programs.
3. Read the Case Study provided in Post-School Placement. Using the information given, decide on a minimum of two options you feel Mary has, now that she has graduated from high school.

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Objective for Module IV
How to Sequence Programming

Given one type of school plan (Area Center, Comprehensive High School, Shared-Time Plan) you will describe a model vocational education delivery system for students with one of the following impairments: MI, HI, VI, ED, PI.

Describe the sequential steps and procedures beginning with the career development goals, to the pre-vocational components, the vocational training program and plans for post-school training.

Your delivery system will be evaluated according to a check list derived from documentation and criteria selected by the State Vocational Education Agency/State Special Education Agency/Vocational Rehabilitation Services, Michigan Department of Education.

Objective for Part A. Career Development Goals

Given a list of references, you will select 5 career education activities appropriate for one category of handicapped student and state how you would use them for your students.

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Objectives for Module IV - Part B
Pre-Vocational Components

1. Given a list of jobs within one occupational cluster, build a pyramid of jobs from unskilled to professional using the jobs on the list. In a paragraph describe how pre-vocational and vocational training are related to this pyramid.
2. After visiting the vocational evaluation lab at CACC, state at least 5 job samples available in the system and explain how they can be used to measure and predict vocational aptitude and potential for certain jobs.

Objective for Module IV - Part C
Vocational Training

1. After observing a handicapped student (in your specialty area) using a "language of the task" module at CACC, you will determine and list any adaptations needed in order for the student to complete the module successfully.

The adaptations will be determined according to:

- a. DHEW Guidelines - Vocational Education Amendments.
- b. Prescriptive techniques accepted by experts in your specialty area.
- c. Experience-based prescriptions of the special education teacher using the module.

Objective for Module IV - Part D
Post-School Vocational Training

Given a description of a special education student at the time of graduation from high school, including his pre-vocational and vocational training as well as career development goals as stated by the student, determine a minimum of two options you feel the student has for post-school placement. Support your options with any data given in the description (or needed) from VRS, recommendations from the EPPC, etc.

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Module V

Rationale

The cooperation needed between special education teachers, vocational education teachers, vocational rehabilitation counselors, and paraprofessionals and other support personnel related to the vocational training program is again stressed in this module. Given an instructional program, this module is designed to give you information as to the role and contribution of each member on the team, in helping the handicapped student succeed in the vocational training program.

Too often handicapped students are prevented from enrolling or succeeding in a vocational training program because of negative attitudes on the part of teachers, administrators, and the community. In this module you will participate in some simulations in which you will have to decide what positive action can take place if you find yourself in one of these situations.

There are alternate placement possibilities for handicapped students to participate in vocational training. This module will give you some practice in making decisions as to which alternatives (such as work-study vs. regular vocational education co-op) would probably be most appropriate for a given case situation.

Activities

1. Using the CMU Task Module on Residential Construction and looking at the task of "attach subflooring," decide on the dialogue you would expect from the special education teacher, the vocational education teacher, and the paraprofessional for the vocational education class, at a weekly staff meeting.
2. Discuss the case of a high school physically handicapped student who has one year of high school left and approaches you (as a teacher) about wanting a job as a mechanic.
3. Listen to the guest speaker - a handicapped young adult talk about his problems and successes in finding jobs.
4. Read the Vocational Interest Checklist and the Vocational Testing Report used by the Saginaw Public Schools. Discuss how they can be used in helping to determine appropriate placement in vocational training programs.
5. Listen to Dick Warren from the Lansing Public Schools on his experiences for handicapped students. Discuss the Community Classroom Concept, Occupational Training Agreement, Work Training Progress Report and other types of evaluation, and the Follow-up Study which he presents.

6. Participate in the simulation dealing with the lack of coordination between the school, community, and state agencies in serving handicapped students. Propose a plan of action for the problems presented.
7. View the slide-tapes on What Is A Cooperative Education Program and Individualized Instruction - Using the Job As A Textbook.
8. Read the Guidelines for Special Education Work-Study Programs by the Michigan Department of Education.
9. Discuss the case situation of a handicapped student who is ready to be placed out on-the-job training. Decide on the advantages and disadvantages of Special Education Work-Study vs. Regular Vocational Education Co-op Program. Decide also on the questions you would have to ask before either placement could be made.
10. Read and discuss the steps in Planning a Vocational Training Delivery System.
11. Listen to guest speakers from the State Special Education Agency and the State Vocational Education Agency (Gene Thurber and Larry Barber), on the major problems schools have in planning and implementing vocational training programs for handicapped students as they see it.
12. Discuss the steps you would take to set up successful work experiences for a group of handicapped students.

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Objectives for Module V
Liaison Activities in Vocational Programming
Serving Handicapped Students

1. Given one week's lesson plans for a specific vocational training program for a school, you will state the expected dialogue of each person on the Special Needs Team serving the vocational training program during their weekly planning session. (The team includes the special education teacher, the vocational education teacher, paraprofessionals and any other support personnel.) Predict what will be said!

You will then synthesize the contributions of each team member in a short paragraph, stating a kind of profile of the handicapped student(s) and provisions made for successful completion of the vocational lesson.

View the video of the actual planning session, compare with your predictions, and synthesize again.

2. Given a case situation of a high school junior who is physically handicapped and wants to be a mechanic, propose a plan of action you would follow in helping this student reach his career goal.

Consider in your plan data from the case study such as the fact the student is a potential drop-out; he has had no training in the area of interest with the exception of a general Industrial Arts course; he wants a job now. Consider also how you would deal with the lack of pre-requisites and placement in a program, if at all. Give reasons for your decisions.

3. Given several case situations in a simulation, propose a plan of action for each as to:
 - a. How you would deal with the negative attitudes towards handicapped students.
 - b. How you would deal with the lack of coordination between the school, community, and state agencies.
 - c. Give reasons for the decisions or proposed decisions you made in your plan of action.
4. Given a case description of a handicapped student being discussed during an EPPC meeting at which the vocational education alternatives are presented, you will list the advantages and disadvantages of the following programs for that student:
 - a. Regular vocational education co-op.
 - b. Co-op program with Special Needs Consultant.
 - c. Work-Study Program.

5. Given 25 special education students to place in work-study experiences and given a community in which business and industry have had little or no experience in work-study programs or hiring of the handicapped, list the steps and procedures you would use to obtain successful work experiences for these students.

Include the conditions you must meet for the establishment of a work-study program (Labor Laws).

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Module VI

Rationale

In order to determine if the vocational training program for handicapped students makes a difference in their employability and job satisfaction, the effectiveness of the training program you provide must be evaluated. This module provides some sample formats for follow-up studies as well as some questions to ask about the total program impact on such things as student and employer satisfaction with job placement, job skill, and interpersonal relationships on the job. These questions should lead you to the planning and implementing of a more effective vocational education delivery system for handicapped students.

Activities

1. Look at the follow-up data for four schools (class hand-out) and rate the overall success of each program. Answer the questions related to the impact of the training program on the job performance of the students involved.
2. Read and discuss the following class hand-outs which are sample follow-up surveys:
 - a. Follow-Up Survey of 1975 Graduates, Vocational and Technical Services, Michigan Department of Education.
 - b. Former Student Survey Questionnaire Evaluation of Services, University of Illinois, Vocational Education In-Service Project.
 - c. Five Year Follow-Up Study of Educable Mentally Handicapped High School Graduates 1968-72, Lansing School District, 1973.
3. Look over other sample evaluation studies provided in class:
 - a. Report and Analysis of the Follow-Up Survey for 1974 Graduates of the Capital Area Career Center.
 - b. Forms from Calhoun Area Vocational Center:
 1. Performance Based Student Evaluation
 2. Special Needs Team Self Check List
 3. Staff Survey - Counseling Services
 4. Employer Survey of Special Needs Program Graduates
 5. Student Survey of Counseling Services
 6. Parent Survey of Counseling Services

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Objective for Module VI
Evaluation and Follow-Up Services of
Vocational Programs for the Handicapped

From the follow-up data of handicapped students from (four) high schools, you will interpret the success of the vocational training program for handicapped students at each school.

The follow-up data will include:

1. Job satisfaction
2. Number of students employed
3. Number of students employed in area of training
4. Length of employment
5. Employer evaluation rating

Design a follow-up process using this information. Develop a proposal to be presented to the Board of Education for a local school district. Include your design for the follow-up procedures as well as plans for relating the information to curriculum improvement, curriculum modification, additional services required, etc.

APPENDIX B

DESCRIPTIVE MATRIXES FOR MODULES I - VI

DESCRIPTIVE MATRIXES FOR MODULES I - VI

Module I	
INTENTS	OBSERVATIONS
<u>Antecedents</u>	
Students not aware of role as special education teacher in a vocational education program. Students have little or no experience with or knowledge of vocational education.	<ol style="list-style-type: none"> 1. The majority of students were aware that vocational and career centers existed but were not familiar with what vocational education really is. 2. Student verbal reports revealed that five students had work experience in some of the vocational training areas but the majority of students did not realize these were actually vocational training areas. 3. Demographic data revealed that one student participated in a vocational training program herself in high school.
<u>Transactions</u>	
See Module I Activities in Appendix A.	<ol style="list-style-type: none"> 1. Feedback from evaluation forms revealed that the activities were successful in enabling all of the students to identify the vocational training areas and how they are part of the total career education program. 2. Feedback from student evaluation forms revealed that interviews with people on the job was contingent to learning task analysis and task detailing and how the performance of these is taught to special education students. This was the case for all of the students in the MSU class.

INTENTS

OBSERVATIONS

-
3. The activity on CBE was presented in isolation and not as an integral part of the module. Though it was interesting to the majority of the students, its purpose here was confusing according to student verbal reports and instructor observation.
-

Outcomes

See Module I
Objectives in
Appendix A.

1. Student verbal reports and evaluation forms revealed that all students were able to identify the vocational training areas and apply the definition of vocational education as intended.
 2. According to student verbal reports, all the students were able to do task detailing and apply this information to teaching the performance required.
 3. Verbal reports and post test results revealed that all of the students were able to list and explain the steps involved in setting up and managing a vocational training program at the high school level with at least 60 percent accuracy.
 4. Instructor evaluation revealed that the objective on CBE was meaningless as presented in this module, though it was interesting to the students.
-

Suggestions for Improving Instruction:

Competency-Based-Education is a growing trend in curriculum development for special needs students and a meaningful way needs to be found to integrate this concept into this module.

Module II

INTENTS

OBSERVATIONS

Antecedents

Students have been exposed to EPPC Meetings through Special Education Core courses but they are not familiar with making vocational education placement decisions.

1. As intended, student verbal reports revealed that they were familiar with the functions of the EPPC, but not with the roles of the vocational education related personnel and the implications for career decisions.

Transactions

See Module II Activities in Appendix A.

1. According to student verbal reports and instructor observation, not enough background information was given on the subject in the Case Study for the EPPC. Half of the students had difficulty in putting the background information together, though it was pointed out that this may be quite typical at many EPPC meetings.
2. Student evaluation forms revealed that all but one of the students felt that the role play activity was very useful in learning the duties of the personnel involved in the EPPC meeting and in seeing the necessity of thorough assessment of handicapped students before vocational placement decisions are made.

Outcomes

See Module II Objectives in Appendix A.

1. According to student verbal reports and instructor observation, all of the students were able to present some vocational

INTENTSOBSERVATIONS

alternatives based on the information presented in the Case Study, as intended. Time was not allowed for assessment of the meeting procedure according to the criteria presented.

Suggestions for Improving Instruction:

The role play could probably be conducted in more depth if the students were more familiar with the roles of the vocational education related personnel previous to the activity. Video-taping and play-back of the role play could be valuable for students to assess the procedure used.

Module IIIINTENTSOBSERVATIONSAntecedents

Students are familiar with the services of Special Education and Vocational Rehabilitation agencies but not with the Vocational Education Special Needs Unit.

1. Student verbal reports revealed a familiarity with Mandatory Legislation through Special Education Core courses but not with the services of the three state agencies of Vocational Education/Special Education/Vocational Rehabilitation.

Transactions

See Module III Activities in Appendix A.

1. According to student evaluation forms the guidelines from DHEW were very clear and understandable but the state guidelines were very confusing.

INTENTS

OBSERVATIONS

-
2. Student evaluation forms revealed that two students felt that too much time was spent in class discussing the guidelines which were "dry." The majority of students felt the activity was important.
-

Outcomes

See Module III
Objectives in
Appendix A.

1. Student verbal reports revealed that the majority of students were able to explain the criteria for selection of students, to list the reimbursable costs, and to describe the roles of the team members involved in special needs programming. The majority were still unclear as to how a vocational program for handicapped students is different from a regular vocational education program.
 2. Post-test results indicated that all except one of the students could describe the alternatives available for the handicapped in vocational training with 100 percent accuracy.
 3. Post-test results indicated that all except one of the students could indicate the source of information and/or funding for given problem situations serving handicapped students in a vocational training program with 100 percent accuracy.
-

Suggestions for Improving Instruction:

- 1) Discussion with State Department of Education personnel could help make the state guidelines more clear to the students.
 - 2) A chart of the organizational structure from the state department of education down to the local school districts could be valuable in understanding funding patterns.
 - 3) A simulation of school personnel setting up a new vocational education for handicapped program would make the guidelines more meaningful and real. The problem situations could easily be incorporated here as well as the alternatives in vocational programming for handicapped students.
-

Module IV-A

INTENTS

OBSERVATIONS

Antecedents

Students are somewhat familiar with career education concepts through general education courses.

1. Student verbal reports revealed that only one student was familiar with career education concepts.

Transactions

See Module IV-A Activities in Appendix A.

1. Student evaluation forms indicated that four students found the first two value clarification exercises repetitious (from another education class) though important for career development of the students they will be working with.
2. Instructor observation and student evaluation forms revealed that not enough time was spent on basic skills in the classroom related to a person in the occupation and a life centered activity.
3. Availability of sample resource materials field tested with handicapped students proved very valuable to the majority of students in the class according to verbal reports and evaluation forms.

Outcomes

See Module IV-A Activities in Appendix A.

1. Student verbal reports revealed that all of the students were able to select career education activities appropriate to the category of handicapped students in which they were training for.
-

Suggestions for Improving Instruction:

- 1) Rather than take class time to participate in value clarification exercises, it would be more effective to demonstrate how they are used to help students make vocational and career decisions.
- 2) Now that the Career Education Project for Handicapped Students developed at Calhoun Intermediate School District is being disseminated, time ought to be allocated for discussion and implications of this project.
- 3) Perhaps the impact of career education could be better realized by seeing some action in schools participating in the career education focus.

 Module IV-B

INTENTSOBSERVATIONSAntecedents

Students have no knowledge of what pre-vocational skills mean.

1. Half of the students were familiar with pre-vocational skills for the severely mentally impaired but no students were familiar with what pre-vocational skills at the junior high school level meant, according to student verbal reports.

Transactions

See Module IV-B Activities in Appendix A.

1. Student evaluation forms revealed that two students did not see the relationship of the job pyramid activity to this module.
2. Student evaluation forms and verbal reports revealed that all of the students felt the observation of work samples was an excellent activity to demonstrate how vocational potential can be measured.
3. Student evaluation forms revealed that written information on work sample systems was very beneficial.

INTENTSOBSERVATIONS

4. Student evaluation forms revealed that all but one student felt the presentation of the CMU Pre-Voc Project was very valuable in demonstrating the assessment procedure that could be used at the pre-voc level by special education teachers.
-

Outcomes

See Module IV-B
Objectives in
Appendix A.

1. Student evaluation forms and instructor observation revealed that at least two students did not accomplish the objective on the development of pre-vocational skills via the job pyramid as intended. The objective, as intended, was unclear.
 2. Student evaluation forms and verbal reports revealed that the objective on the explanation of the vocational evaluation system was accomplished as intended.
-

Suggestions for Improving Instruction:

- 1) Slide-tape presentations could be available for student reference through Vocational Rehabilitation Services on various work sample systems and could be an addition to the explanation of vocational evaluation.
 - 2) The CMU Pre-Voc Project can be used to demonstrate the hierarchy of skills and jobs from pre-voc through vocational training. Emphasis should be here with the elimination of the job pyramid activity.
 3. Due to its importance in vocational education programming for handicapped students, more time should be devoted to the total assessment procedure at the pre-vocational level.
-

Module IV-C

INTENTS

OBSERVATIONS

Antecedents

Students are not familiar with their role as a special education teacher in a vocational education program for handicapped students.

1. Student evaluation forms, verbal reports, as well as instructor observation revealed that students entered the class not knowing their role in vocational education programs.

Transactions

See Module IV-C Activities in Appendix A.

1. The observation of the "language of the task" modules being used at an area Career Center did not take place due to time and transportation problems on the part of the students in the MSU class as well as management problems at the Center. The MSU class evaluated the modules as instructional techniques for handicapped students.
2. Student evaluation forms and verbal reports revealed that all of the students highly valued their visits to the various vocational training centers, as well as the sharing of the various programs with each other.
3. Time did not permit any student to do a case study of one special education student in a vocational education program.

Outcomes

See Module IV-C Objectives in Appendix A.

1. The objective of determining adaptation of the "language of the task" modules was not accomplished.

INTENTS

OBSERVATIONS

-
2. Post test results revealed that all but one student was able to describe a model vocational education delivery system for handicapped students with at least 70 percent accuracy.
-

Suggestions for Improving Instruction:

Working with handicapped students using the "language of the task" modules and doing a case study of at least one handicapped student in a vocational training program would be valuable experiences, according to the students and instructor of this course. With the material covered, they are not feasible for this course and ought to be part of an additional course.

Module IV-D

INTENTS

OBSERVATIONS

Antecedents

Students are unfamiliar with opportunities in vocational training for handicapped after high school.

1. Student verbal reports revealed that the majority of the students in the MSU class were not aware that community colleges had vocational programs available to handicapped students.
-

Transactions

See Module IV-D Activities in Appendix A.

1. Student evaluation forms and verbal reports revealed that the new projects involving job modification for clients at the community college level were interesting and valuable to all of the students in the MSU class though the information was sketchy since this was the first year for the projects.
2. Student evaluation forms and verbal reports indicated that all of the students in the MSU class were inspired as to the opportunities available to handicapped students at the community college level.

INTENTSOBSERVATIONS

3. Student evaluation forms revealed that all of the students felt that the Case Study on post school placement was very effective for practice in determining alternatives.

Outcomes

See Module IV-D
Objectives in
Appendix A.

1. Student evaluation form and verbal reports as well as instructor observation revealed that all of the students were able to determine options for post school placement based on data available.

Suggestions for Improving Instruction:

Student feedback suggested that more than one case study be used for discussion of post school placement. It was the instructor's opinion that more alternatives at the post high school level need to be presented in this module. Vocational Rehabilitation personnel can be of assistance here. This would probably have to be done through an additional class offered.

Module VINTENTSOBSERVATIONSAntecedents

Students are not aware of their role as a special education teacher on a team of professionals serving handicapped students.

1. Student verbal reports and instructor observation indicated that there was lack of awareness as to how a special education teacher functions with other professionals on a team serving handicapped students in a vocational training program.

Transactions

See Module V
Activities in
Appendix A.

1. Student evaluation forms revealed that the majority of the students felt the role playing of a team of professionals working with the CMU Vocational Task Modules was an excellent technique for demonstrating the coordination possible.

INTENTS

OBSERVATIONS

2. Student evaluation forms and verbal reports revealed that the physically handicapped adult coming in to class made job problems of handicapped adults more real to all of the students in the MSU class.
3. Student evaluation forms and verbal reports indicated the practical experience offered by a local school work-study coordinator was valuable to the majority of students in the MSU class.
4. Student evaluation forms revealed that all of the students felt the simulation dealing with negative attitudes and lack of coordination of the organizations involved with handicapped students, were excellent practice for making decisions and taking action in the future.
5. Student evaluation forms revealed that the majority of students in the MSU class felt the case situation on regular vocational education cooperative work training programs vs. the special education work study program was helpful to them in distinguishing between the two options.
6. Student evaluation forms revealed that one student felt the slide-tape on Vocational Education Cooperative Work Programs was boring.
7. The Guidelines on Special Education Work Study Programs were valuable to the majority of students according to the student evaluation forms. Many of these guidelines were covered in the work-study coordinator's presentation, as were the steps for setting up successful work experiences for handicapped students.
8. No time was left to discuss the vocational testing reports and steps in setting up a vocational education delivery system, though the student evaluation forms revealed these materials were useful to the majority of students.

INTENTS

OBSERVATIONS

-
9. State department personnel did not have enough time to give their perceptions of problems in delivering vocational training programs for handicapped students at the local level, nor the implications of new projects for teacher preparation in the state of Michigan.
-

Outcomes

See Module V
Objectives in
Appendix A.

1. Post-test results indicated that all except one of the students were able to synthesize with 100 percent accuracy the contributions the three professionals on the special needs team helping a handicapped student achieve a vocational task (from the CMU Task Modules).
 2. Student verbal reports indicated that the majority of students in the MSU class were able to give a plan of action for the case study on the physically handicapped student interested in vocational training during the senior year of high school.
 3. The simulation on dealing with negative attitudes towards the handicapped in a vocational education program enabled all of the students in the MSU class to achieve the objective according to student evaluation forms, verbal reports and instructor observation.
 4. Post-test results indicated that all of the students in the MSU class were able to distinguish between a regular vocational education cooperative program and a special education work-study program with at least 75 percent accuracy.
 5. According to the instructor's observation, the objective on working with the community on job placement for handicapped students was not achieved.
-

Suggestions for Improving Instruction:

- 1) It would be valuable to obtain a video-tape of an actual planning meeting of professionals involved in helping a handicapped student achieve a vocational task. Role playing, however, is better than a "rigged" meeting.
 - 2) More time in another class needs to be allocated to the options available for work training for handicapped students.
-

Module VI

INTENTSOBSERVATIONSAntecedents

Students have little familiarity with follow-up procedures for handicapped in vocational programs.

1. Student verbal reports revealed that students have sparse knowledge of a follow-up process to be used for handicapped students in a vocational education program.
-

Transactions

See Module VI Activities in Appendix A.

1. Follow-up data for the four schools proved to be a good technique for all of the students, in looking at a way to make program decisions and revisions, according to student evaluation forms.
 2. Student evaluation forms and verbal reports revealed that the sample follow-up surveys and evaluation studies were valuable to the majority of students in the MSU class, but that they were disappointed that not enough time was provided in class to discuss them.
-

INTENTS

OBSERVATIONS

Outcomes

See Module VI
Objectives in
Appendix A.

1. Post-test results indicated that all of the students were able to interpret the follow-up data given for a vocational education program serving handicapped students with 100 percent accuracy. Instructor observation and student evaluation forms revealed, however, that the objective of students being able to design a follow-up process was not achieved.
-

Suggestions for Improving Instruction:

This is an important module and time must be allocated to study the various types of surveys and information gathering needed in order to improve vocational education programs serving handicapped students.

APPENDIX C

TEST INSTRUMENT

TEST INSTRUMENT

VOCATIONAL EDUCATION FOR HANDICAPPED

1. You, as a special education teacher, and the high school business teacher have decided that there is a need for a course in clerical skills for your students. What are the steps you would go through to decide if you should offer this course for these students and the steps to carry your plan through, i.e. the management system. List and explain each step briefly.

StepExplanation

- 1)
- 2)
- 3)
- 4)
- 5)
- 6)
- 7)
- 8)
- 9)
- 10)

2. Following are some program descriptions of the alternatives available in vocational programming for handicapped students in Michigan. Which type of program listed below do you feel is being described in each case.

- a. Integrated or regular
- b. Modified or adapted
- c. Segregated or special
- d. Individual vocational training
- e. Work Activity Center

- ____ 1) Handicapped students in this program are assigned to teacher consultants or special education resource rooms and/or work-study coordinator.
- ____ 2) Usually limited to handicapped students assigned to self contained special education programs.
- ____ 3) The program may be used to prepare special education students for integration into regular vocational education.

- _____ 4) Paraprofessionals may be assisting in the vocational training areas. Teaching units may be written at a low reading level and in large print.
 - _____ 5) All students who are receiving non-instructional special education services (speech, social work, occupational therapy, etc.) are placed in these programs.
 - _____ 6) This program involves training in special programs such as CETA or apprenticeship training approved by a governmental agency, or a unique individual training program designed to fit a handicapped student's special interests.
 - _____ 7) Training is usually of semi-skilled nature such as custodial training or nurses' aide.
3. When you are faced with problems in planning and implementing a vocational education program for handicapped students, there are 3 state agencies available to help you. For the problems listed below, indicate which of the 3 agencies you would go to for help in Michigan.
- a. Special Education State Agency
 - b. Vocational Education State Agency
 - c. Vocational Rehabilitation Service
- _____ 1) You have a student who needs new hearing aids.
 - _____ 2) You have some handicapped students who are interested in the cosmetology training program offered in your school district. The teacher of that program says she will not be able to handle your students.
 - _____ 3) Because of the large number of students you are responsible for in work-study placements, you can only visit them once a month on the job.
 - _____ 4) You have some students integrated into the regular vocational education programs in your school district but they are unable to achieve the objectives and skills required of the programs.
 - _____ 5) Three of your special education students from last year who dropped out of school have come to you for help in getting a job.
 - _____ 6) You aren't sure how to go about evaluating the work performance of your Special Education students at their job training stations.
 - _____ 7) You have an epileptic student who is interested in the quantity food service program at the high school. The instructor of that program is hesitant because of possible seizures and the student facing the public.
 - _____ 8) You are having difficulty in raising the reading level of your special education students in order that they may succeed in the vocational training program. You would like to order some individualized learning packages which you feel would help greatly but your principal says there is no more money in the budget.

- ____ 9) You would like your special education students to participate in the regular co-op vocational education program in the school.
4. Describe a model vocational education delivery system for handicapped students according to documents accepted by the Michigan Department of Education, such as the Guidelines from the Vocational-Technical Education Services and Development and Implementation of Secondary Special Education Programs by Baxter, et. al. List and describe the sequential steps and procedures you would follow relative to vocational training, as well as pre-vocational training, plans for post-school placement and career development goals.
- 1)
 - 2)
 - 3)
 - 4)
 - 5)
 - 6)
 - 7)
 - 8)
 - 9)
 - 10)
5. One of the keys to a successful vocational training program for handicapped students is the successful cooperation between the special education teacher, the vocational education teacher, and other support personnel involved. With the attached CMU Task Module, what are the questions and comments you would expect from the professional personnel involved in a weekly staff meeting in order that the handicapped student will successfully complete the task module.

Task Module: Residential Construction - Attach subflooring

Status of handicapped student: Geno is a mentally impaired individual who has achieved at the "productive" level on all the previous tasks. He has great difficulty in reading but has been able to learn the tasks taught previously through demonstration and practice. He has been successful in measurement of feet and inches but does not understand square feet, angles or other more abstract math concepts. He is unfamiliar with nail sizes and types of wood used for subflooring.

Questions & Comments

Vocational Education teacher:

Special Education Teacher:

Paraprofessional for Vocational Education Class:

6. Mary is a hearing impaired student in the data processing program at the Area Career Center. She has successfully completed one year of vocational training in this area. You as a special education resource teacher would like to have her placed out on-the-job-training. Decide which of the following placements for on-the-job work experience you would suggest for Mary, by describing the advantages and disadvantages of each placement and questions you would need to have answered before the particular placement could be made.

- a. Regular cooperative vocational education program
- b. Special Education Work-Study program

Regular Voc Ed Coop

Special Ed Work-Study

Advantage:

Advantage:

Disadvantage:

Disadvantage:

Questions to be asked:

Questions to be asked:

1)

1)

2)

2)

7. Below are some follow-up data for 50 handicapped students who graduated from your school last year.

40 employed in a job
 30 employed for 3 months or more
 6 in post-school training program
 35 employed in area in which trained or related area
 10 "highly satisfied" with their jobs
 18 "satisfied" with their job
 12 "dissatisfied" with their job and would like to look for another job.

These are your former students. What do these data tell you about the vocational training program for handicapped students at your school. Choose the one that describes the data the best.

- _____ 1) Maintain your program as is, over half of your students are satisfactorily employed and in the area in which they trained.

- _____ 2) Do more in preparation for post-school training since few seem to be interested or able to succeed.
- _____ 3) Revise your total program - only 10 are highly satisfied with their jobs and 4 are unemployed.
- _____ 4) The vocational training areas seem to be adequate for these students but more emphasis needs to be made in job satisfaction.
- _____ 5) None of the above conclusions can be made from this data.
- _____ 6) All of the above are conclusions that one can make about the program that need to be explored further.

Explain the reason for the choice you made:

SUBCLUSTER: RESIDENTIAL CONSTRUCTION

Sheet 1 of 1

TASK: Attach subflooring

Code: CON - RC13

Student Name: _____

Student Progress	Behavioral Task Knowledges/Task Skills	Instructional Methods		
		Task-Related Competencies	Instructional Materials Title	Media Bib.
Introduced	<p>Given the necessary tools, materials, equipment, and requisite knowledge, the learner will:</p> <ol style="list-style-type: none"> Identify different types of sub-flooring materials: <ol style="list-style-type: none"> plywood shiplap tongue and groove common boards fiberboard. Describe the basic purpose of sub-flooring: <ol style="list-style-type: none"> add rigidity to structure. provide a base for application of finished materials. perform the following job skills for installing shiplap or common board flooring: <ol style="list-style-type: none"> lay at a 45° angle with joists. start at a distance from corner and lay back to corner. let ends hang out over openings and walls and cut off later with saw. use two 8d nails in each board to joist. lay without cracks between boards. perform the following job skills for installing plywood subflooring: <ol style="list-style-type: none"> use 1/2" or 5/8" plywood laid perpendicular to joists. use 8d nails six inches apart, along edges and ten inches apart on intermediate members. 	<ul style="list-style-type: none"> Students copy outline of a first floor from a blueprint and draw in the placement of 4'x8' sheets of subflooring. Students simulate procedures on scale model house section (1" = 1'0"). Class visits job site to observe laying of subflooring. Students review illustrated text materials. Teacher matches successful students who are interested in helping those having difficulty. 	Modern Carpentry	13 22
Involved		KNOWLEDGE A 6,7,9 NUMBERS B 2b,4a,i APPLICATION C 5 PHYSICAL D 1a,d,e 2d 3a,c,e,f,8		
Productive				
Employable				

SUBCLUSTER: RESIDENTIAL CONSTRUCTION

Code: CON - RC13 TASK: Attach subflooring

Basic Information for Cooperative Teaching		Suggestions:								
Language of the Task	Quantitative Concepts									
On center Partical board Fiberboard Shiplap Common boards Tongue and groove	Determine the number of square feet in a sheet of plywood (4'x8'). Determine the number of sheets of plywood needed to cover an area of 24'x48'. Discuss nail size and nail types which may be appropriate, i.e. 8d ring nail.	<ul style="list-style-type: none">• Collect samples of types of subfloor materials from vocational instructor.• Consult local supplier for relative costs per square foot for discussion.• On study sheet line is drawn down center; have student write question: What is purpose of subflooring? Write answer on right side as a personal study tool and continuous study sheet of concepts and knowledge requisites. <table><tr><th>Questions</th><th>Answers</th></tr><tr><td>What is purpose of subflooring?</td><td>to make house strong & flat. so rest of house can be built on top of it.</td></tr><tr><td>rigidity (what does word mean?)</td><td>straight, not bumpy, firm</td></tr><tr><td>finished materials</td><td>what the house is built of</td></tr></table>	Questions	Answers	What is purpose of subflooring?	to make house strong & flat. so rest of house can be built on top of it.	rigidity (what does word mean?)	straight, not bumpy, firm	finished materials	what the house is built of
Questions	Answers									
What is purpose of subflooring?	to make house strong & flat. so rest of house can be built on top of it.									
rigidity (what does word mean?)	straight, not bumpy, firm									
finished materials	what the house is built of									
Supportive Instructional Materials:										
Paper Pencil Samples of floor materials										

APPENDIX D

ATTITUDE QUESTIONNAIRE

ATTITUDE QUESTIONNAIRE
WHAT I BELIEVE ABOUT VOCATIONAL EDUCATION FOR HANDICAPPED

1. As compared to other kinds of high school education for handicapped students, I believe that vocational education is:
 - 1) much less important
 - 2) less important
 - 3) more important
 - 4) much more important
2. I believe that vocational education for handicapped students at the high school level is a waste of time.
 - 1) strongly agree
 - 2) agree
 - 3) disagree
 - 4) strongly disagree
3. I believe that handicapped students would be interested in vocational education to satisfy their life goals.
 - 1) strongly agree
 - 2) agree
 - 3) disagree
 - 4) strongly disagree
4. I believe that vocational education for handicapped students helps to raise their social adaptability level.
 - 1) strongly agree
 - 2) agree
 - 3) disagree
 - 4) strongly disagree
5. I believe that vocational education is primarily for handicapped students who are mentally impaired.
 - 1) strongly agree
 - 2) agree
 - 3) disagree
 - 4) strongly disagree
6. I believe it is more difficult for a handicapped high school student to be accepted by his peers socially if he/she is in a vocational education program.
 - 1) strongly agree
 - 2) agree
 - 3) disagree
 - 4) strongly disagree

7. I believe that vocational education at the high school level equips the handicapped student for practical work.
 - 1) strongly agree
 - 2) agree
 - 3) disagree
 - 4) strongly disagree
8. I believe that vocational education for handicapped students at the high school level facilitates early employment.
 - 1) strongly agree
 - 2) agree
 - 3) disagree
 - 4) strongly disagree
9. With regards to on-the-job performance, I believe that handicapped students who graduate from vocational education programs, as compared to those who do not, are:
 - 1) much less efficient
 - 2) less efficient
 - 3) more efficient
 - 4) much more efficient
10. I believe that vocational education should be provided for handicapped boys only.
 - 1) strongly agree
 - 2) agree
 - 3) disagree
 - 4) strongly disagree
11. I believe that the intelligent handicapped student does not participate in vocational education at the high school level.
 - 1) strongly agree
 - 2) agree
 - 3) disagree
 - 4) strongly disagree
12. I believe that handicapped students with manual skills are the only ones who participate in vocational education programs at the high school level.
 - 1) strongly agree
 - 2) agree
 - 3) disagree
 - 4) strongly disagree
13. I believe that vocational education for handicapped students should not be the primary responsibility of the special education teacher.
 - 1) strongly agree
 - 2) agree
 - 3) disagree
 - 4) strongly disagree

14. I believe that vocational training at the high school level does not prepare handicapped students for entry level job skills (skills required to enter a job).
- 1) strongly agree
 - 2) agree
 - 3) disagree
 - 4) strongly disagree
15. I believe that in most high schools, vocational training is designed to take care of special education and disadvantaged students.
- 1) strongly agree
 - 2) agree
 - 3) disagree
 - 4) strongly disagree
16. I believe that most handicapped students are not capable of completing a regular high school vocational program.
- 1) strongly agree
 - 2) agree
 - 3) disagree
 - 4) strongly disagree
17. I believe that special "segregated" vocational training programs are necessary for most handicapped students to be able to acquire the necessary job skills.
- 1) strongly agree
 - 2) agree
 - 3) disagree
 - 4) strongly disagree
18. I believe that handicapped students ought to be hired for a job only if there are no qualified people who are not handicapped seeking the job.
- 1) strongly agree
 - 2) agree
 - 3) disagree
 - 4) strongly disagree
19. I believe that certain jobs ought to be reserved for the handicapped.
- 1) strongly agree
 - 2) agree
 - 3) disagree
 - 4) strongly disagree

20. I believe that handicapped students should not be allowed to prepare for any kind of hazardous occupations.
- 1) strongly agree
 - 2) agree
 - 3) disagree
 - 4) strongly disagree
21. I believe that the less employers know about the handicapping conditions, then the better chance the handicapped student has to succeed on the job.
- 1) strongly agree
 - 2) agree
 - 3) disagree
 - 4) strongly disagree
22. I believe that handicapped students when employed lose their jobs more often than those who are not handicapped.
- 1) strongly agree
 - 3) agree
 - 3) disagree
 - 4) strongly disagree
23. I believe that when handicapped students lose their jobs, it is usually because of their inability to perform the job tasks involved.
- 1) strongly agree
 - 2) agree
 - 3) disagree
 - 4) strongly disagree
24. I believe that handicapped students are less satisfied with their work when employed than the non-handicapped.
- 1) strongly agree
 - 2) agree
 - 3) disagree
 - 4) strongly disagree
25. I believe that employers are generally less satisfied with the job performance of handicapped students than they are of those who are not handicapped.
- 1) strongly agree
 - 2) agree
 - 3) disagree
 - 4) strongly disagree

MY OWN EXPERIENCES OR CONTACT WITH VOCATIONAL EDUCATION

1. Contacts I have had with vocational education have been basically by means of:
 - 1) no contact
 - 2) contact with professors in vocational education
 - 3) contact with students and/or graduates from vocational education programs
 - 4) participated in vocational education program myself in high school or post-high school
 - 5) contact through newspapers, radio, or TV
2. How many incidences have you had contact with the aspects of vocational education listed in the previous question?
 - 1) none
 - 2) 1 to 5 times
 - 3) 6 to 10 times
 - 4) 11 to 20 times
 - 5) more than 20 times
3. Indicate the kind of contact you have had with vocational education. (Circle only one)
 - 1) no contact
 - 2) by study or reading
 - 3) casual or accidental
 - 4) through visiting programs as a result of a class
 - 5) achieved by my own incentive
4. Experiences I have had from contacts with different aspects of vocational education are:
 - 1) no contact
 - 2) not important to me
 - 3) important for my future professional work
 - 4) decisive for my future professional work

APPENDIX E

MODULE EVALUATION FORM

MODULE EVALUATION FORM

Evaluation of Module # _____

1. The most useful aspects of this module are:

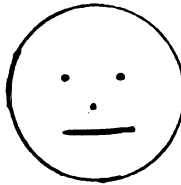
2. The least useful aspects of this module are:

3. As far as my learning the intent (objectives) of this module, I would rate this module:



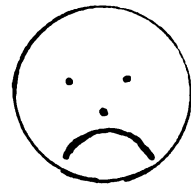
1

2



3

4



5

4. Suggestions I have for improving the organization, content, and teaching of this module.

APPENDIX F

FINAL COURSE EVALUATION FORM

FINAL COURSE EVALUATION FORM

MICHIGAN STATE UNIVERSITY
COLLEGE OF EDUCATION
DEPARTMENT OF ELEMENTARY AND SPECIAL EDUCATION

Vocational Education Seminar

Now that you have taken the "Vocational Education for Handicapped" course,
make some statements as to what objectives and activities or modules you would

Emphasize:

Delete:

Revise:

Add:

APPENDIX G

**LETTER TO VOCATIONAL EDUCATION
SPECIAL NEEDS PROJECT DIRECTORS**

LETTER TO VOCATIONAL EDUCATION
SPECIAL NEEDS PROJECT DIRECTORS

May 6, 1976

Dear

We are developing a new course at Michigan State University for special education undergraduate majors in Vocational Education for Handicapped Students. We would like the assistance of special education teachers working in vocational training programs for high school handicapped students in the state of Michigan, in helping us to decide whether or not the course content we have developed is the content needed by teachers in the field.

Would you kindly give the enclosed instrument to one of the special education teachers working directly with your vocational training program for handicapped students. The role may be classified as one or a combination of the following:

- 1) Work-Study Coordinator.
- 2) Instructor of a special vocational education class (Homemaking, Industrial Arts, etc.) for special education students.
- 3) Support person in a vocational training program for handicapped students (offer related math and reading skills, counseling, job placement, etc.).

Please give the instrument to a special education teacher who has worked in this role for at least two years. We appreciate your help in determining the appropriate content for this new course.

Sincerely,

Virginia Kozlowski, Graduate Assistant

Dr. Donald Burke, Professor

APPENDIX H

**LETTER TO SPECIAL EDUCATION TEACHERS
WORKING IN VOCATIONAL TRAINING PROGRAMS**

LETTER TO SPECIAL EDUCATION TEACHERS
WORKING IN VOCATIONAL TRAINING PROGRAMS

May 6, 1976

Dear Special Education Teacher:

We are developing a new course at Michigan State University for special education undergraduate majors in Vocational Education for Handicapped Students. The attached instrument is made up of questions that pertain to what may be the major content of such a course. Your response to these questions will help us to determine if this is the content needed by teachers in the field, and therefore should be the major focus of the new course.

Would you kindly respond to these questions as soon as possible. It is important to us that we get a response from you so do the best you can and do not worry about your responses being "inappropriate."

Would you also respond to the following items concerning your role in a vocational training program for handicapped students at the secondary level. Please return in the enclosed self-addressed stamped envelope.

Sincerely,

Virginia Kozlowski, Graduate Assistant

Dr. Donald Burke, Professor

APPENDIX I

BACKGROUND INFORMATION FOR SPECIAL EDUCATION TEACHERS WORKING IN VOCATIONAL TRAINING PROGRAMS

BACKGROUND INFORMATION FOR SPECIAL EDUCATION
TEACHERS WORKING IN VOCATIONAL TRAINING PROGRAMS

SPECIAL EDUCATION TEACHERS WORKING IN VOCATIONAL TRAINING PROGRAMS

1. Name of your school district _____
2. Which role description in working with vocational training programs for handicapped students fits your job the best?

_____ Work-Study Coordinator

_____ Instructor of a special vocational education class (Homemaking, Industrial Arts, etc.) for special education students.

_____ Support person in a vocational training program for handicapped students (offer related math and reading skills, counseling, job placement, etc.)

_____ Other (describe) _____

3. How many years have you worked in the above role?

_____ less than 2 years

_____ 2 to 5 years

_____ 5 years or more

4. Indicate the type of teaching certificate you hold.

_____ Elementary	_____ Provisional
_____ Secondary	_____ Permanent

5. Is your approval to teach

_____ temporary

_____ full

In which of the following areas:

_____ mentally impaired

_____ emotionally impaired

_____ visually impaired

_____ hearing impaired

_____ physically impaired and otherwise health impaired

_____ learning disabled

_____ other (specify) _____

_____ none

APPENDIX J

**LETTER TO SPECIAL EDUCATION DIRECTORS
FOR LOCAL SCHOOL DISTRICTS**

LETTER TO SPECIAL EDUCATION DIRECTORS
FOR LOCAL SCHOOL DISTRICTS

May 6, 1976

Dear

We are developing a new course at Michigan State University for special education undergraduate majors in Vocational Education for Handicapped Students. We would like the assistance of special education teachers working in the field in helping us to determine whether or not the course content we have developed is the content needed.

Would you kindly give the enclosed instruments to at least one special education teacher working at the elementary level and one special education teacher at the secondary level in your school district. If you have a Work-Study Coordinator, please give an instrument to that person also.

Please do not give the instruments to special education teachers who are directly involved in vocational training programs such as 1) teacher of a special vocational class, and 2) support person offering related reading and math skills for a vocational training program.

Please give the instrument to a teacher who teaches in a special class placement or serves as a resource consultant either at the elementary or secondary level. The teacher may be responsible for some pre-vocational instruction as part of the special class placement.

Thank you for your help in determining the content of this new course.

Sincerely,

Virginia Kozlowski, Graduate Assistant

Dr. Donald Burke, Professor

APPENDIX K

**LETTER TO SPECIAL EDUCATION TEACHERS
NOT WORKING IN VOCATIONAL TRAINING PROGRAMS**

LETTER TO SPECIAL EDUCATION TEACHERS
NOT WORKING IN VOCATIONAL TRAINING PROGRAMS

May 6, 1976

Dear Special Education Teacher:

We are developing a new course at Michigan State University for special education undergraduate majors in Vocational Education for Handicapped Students. The attached instrument is made up of questions that pertain to what may be the major content of such a course. Your response to these questions will help us to determine if this is the content needed by teachers in the field, and therefore should be the major focus of the new course.

Would you kindly respond to these questions as soon as possible. It is important to us that we get a response from you so do the best you can and do not worry about your responses being "inappropriate."

Would you also respond to the following items concerning your special education teaching placement. Please return in the enclosed self-addressed stamped envelope.

We appreciate your assistance in helping us to determine the appropriate content for this new course.

Sincerely,

Virginia Kozlowski, Graduate Assistant

Dr. Donald Burke, Professor

APPENDIX L

**BACKGROUND INFORMATION FOR SPECIAL EDUCATION TEACHERS
NOT WORKING IN VOCATIONAL TRAINING PROGRAMS**

BACKGROUND INFORMATION FOR SPECIAL EDUCATION TEACHERS
NOT WORKING IN VOCATIONAL TRAINING PROGRAMS

SPECIAL EDUCATION TEACHERS NOT WORKING IN VOCATIONAL PROGRAMS

1. Name of your school district _____
2. Indicate the level in which you work with special education Students.

_____ elementary
_____ junior high
_____ senior high
_____ Work-Study Coordinator
3. How many years have you been teaching special education at this level?

_____ less than 2 years
_____ 2 to 5 years
_____ 5 years or more
4. Indicate the type of teaching certificate you hold.

_____ Elementary
_____ Secondary
_____ Provisional
_____ Permanent
5. Is your approval to teach

_____ temporary
_____ full

In which of the following areas:

- _____ mentally impaired
_____ emotionally impaired
_____ visually impaired
_____ hearing impaired
_____ physically or otherwise health impaired
_____ learning disabled
_____ other (specify) _____
_____ none

APPENDIX M

CONTENT VALIDITY FORM

CONTENT VALIDITY FORM

Vocational Education for Handicapped Students

1. Please rate each test item as to the relevancy to the area of Vocational Education for Handicapped Students. If your answer is "No" please comment.

1 Yes _____ No _____ Comment:

#2 Yes _____ No _____ Comment:

#3 Yes _____ No _____ Comment:

#4 Yes _____ No _____ Comment:

#5 Yes _____ No _____ Comment:

#6 Yes _____ No _____ Comment:

#7 Yes _____ No _____ Comment:

2. Are there major aspects which you feel ought to be covered in a test for this course that are not included?

No _____ Yes _____ Comments:

APPENDIX N

INTER-RATER RELIABILITY SCORE SHEET

INTER-RATER RELIABILITY SCORE SHEET

Name of rater _____

Directions: Please indicate the number of points you would give the subject identified below for the following test items - according to the scoring manual. (You must assume the answers on the scoring manual are correct since this is the content taught in the course and you are not making a judgment on content validity.)

Subject No. _____ Pre-test _____ Post-test _____

MSU class _____

Special Ed teacher in voc ed program _____

Question 1

- ____ 1)
 ____ 2)
 ____ 3)
 ____ 4)
 ____ 5)
 ____ 6)
 ____ 7)
 ____ 8)
 ____ 9)
 ____ 10)

Total # 1 _____

Question 3

- ____ 1)
 ____ 2)
 ____ 3)
 ____ 4)
 ____ 5)
 ____ 6)
 ____ 7)
 ____ 8)
 ____ 9)

Total # 3 _____

Question 2

- ____ 1)
 ____ 2)
 ____ 3)
 ____ 4)
 ____ 5)
 ____ 6)
 ____ 7)

Total # 2 _____

Question 4

- ____ 1)
 ____ 2)
 ____ 3)
 ____ 4)
 ____ 5)
 ____ 6)
 ____ 7)
 ____ 8)
 ____ 9)
 ____ 10)

Total # 4 _____

Question 5

Voc Ed teacher _____
 Special Ed teacher _____
 Paraprofessional _____
 Total # 5 _____

Question 6

Regular Voc Ed Coop
 Advantages _____
 Disadvantages _____
 Questions 1) _____
 2) _____

Special Ed Work Study

Advantages _____
 Disadvantages _____
 Questions 1) _____
 2) _____
 Total # 6 _____

Question 7

multiple choice _____
 explanation _____
 Total # 7 _____

Total for test _____

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