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TAYLOR, EDWARD WILLIAM

THE DEVELOPMENT AND EVALUATION OF A THEORETICAL MODEL
FOR PREPARING INDUSTRIAL EDUCATION TEACHERS TO SERVE
HANDICAPPED LEARNERS IN MAINE

The Ohio State University  Ph.D.  1980

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THE DEVELOPMENT AND EVALUATION OF A THEORETICAL MODEL FOR PREPARING INDUSTRIAL EDUCATION TEACHERS TO SERVE HANDICAPPED LEARNERS IN MAINE

DISSERTATION

Presented in Partial Fulfillment of the Requirements for the Degree Doctor of Philosophy in the Graduate School of The Ohio State University

By

Edward William Taylor, B.A., M.Ed.

* * * * *

The Ohio State University

1980

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College of Education
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CHAPTER I
INTRODUCTION

This document contains the results of a study which was undertaken to determine, assess, and make provisions for the needs of industrial educators in the education of handicapped learners. While this study was primarily concerned with industrial education in Maine, the competencies were identified by means of an extensive search of literature dealing with projects and studies undertaken throughout the United States. The initial selection of competencies for this study was done by examining the nature of research procedures used in other investigations. The identified competencies were then examined by experts from various programs in Ohio and further edited and screened. These experts were individuals who had experience with industrial education (industrial arts and/or vocational education) as well as classroom experience with special-needs learners. The competencies were examined
by selected teacher educators at the Ohio State University
and reviewed for appropriateness, adequacy, and inclusiveness.
The resulting list of competencies, 147 in number, was then
validated by industrial educators at the junior and senior
high school levels in Maine.

The results, as competencies and enabling objectives,
have potential value for application in any location where
industrial education for the handicapped is a priority. The
competencies are organized in segments to permit training to
be given to industrial educators via in-service education,
and to those in pre-service programs in industrial education.

It is hoped that this study will make a significant
contribution to pre- and in-service professional education
for industrial educators in Maine. It has provided direction
for the statewide delivery of training as mandated in the
State Plan for Vocational Education - 1980:

"During FY 1980, activities will be coordinated
with UMPG (sic) to study the feasibility of in-
corporating into the industrial arts and trade
and industry degree program, courses on education
for the handicapped student." (State of Maine, 1979,p.214.)

The need for this training is also expressed in this document:

"Presently, industrial arts and trade and in-
dustry instructors are not receiving the train-
ing to effectively work [sic] with the handi-
capped student". (State of Maine, 1979,p.214.)
Background of the Problem

There is a growing concern for expanding educational opportunities for individuals who have been identified as handicapped. This concern has affected all phases of public education and has been reinforced by the passage of federal legislation. Specifically, PL 94-142 as written, provides massive funding, with no expiration date, for free, appropriate public education of all handicapped children. This law involves the total education of the individual and includes ages 3 - 21. The original intent of the act was to provide funding in increasing steps up to a 40% level. The actual funding for this act has not followed the original intent, in that in its third and fourth funding years, only 12%, not the specified 20% and 30%, was appropriated. While 12% still represents massive funding, it confounds the problem in that the law specifies increased services and more stringent compliance for states during these years.

Phelps and Hollaran (1976) noted the implications of this act for vocational education. Among them were the following:

1. Individual Education Plans must be initiated and maintained for each individual identified as handicapped.
2. Each individual (and/or his parents) is guaranteed legal due process.

3. The location of educational processes is to be the least restrictive environment consistent with the individual's needs.

4. Testing (measurement) and evaluation must be non-discriminatory.

5. Student records must be kept confidential.

These implications, while noted for vocational education, apply to any and all public education. Industrial education, including industrial arts and vocational education, is certainly affected by the provisions of this act.

Aside from specific legal mandates for inclusion of the handicapped in industrial education, there appears to be an ideological concern as well. If the handicapped are to function in a technological democracy, they have the same need for technological literacy as do the non-handicapped.

In essence, recent legislation and the pressure of societal mores have dictated that the handicapped not be discriminated against. The handicapped have the same rights, privileges, and obligations as do non-handicapped persons. An established obligation is that of making informed
decisions regarding matters which affect self and society. Many of these matters affect and are affected by the technological developments in our industrial and scientific communities. It appears, therefore, that the handicapped have a definite need for technological literacy in order that they may function as effective and efficient citizens.

In addition to this general need for technological literacy, many handicapped persons have a need for more specialized industrial education to prepare them to function as self-sufficient and productive citizens within our society. Their needs do not differ significantly from those of the non-handicapped. However, the means of fulfilling the needs of the handicapped do present some difficulties to industrial education delivery systems. Some of these difficulties are obvious, such as access to buildings, etc., while others are less obvious, such as required modifications of facilities, curriculum activities, and machinery.

In addition to PL94-142 (The Education for All Handicapped Children Act of 1975), two other pieces of federal legislation have been frequently cited as significant for the education of handicapped persons. They are particularly significant to industrial education in that they contribute to the education
of handicapped persons as self-sufficient wage-earners.

PL94-482 (The Vocational Education Amendments of 1976) sets specific requirements for a state which requests vocational funding. PL93-112 (The Rehabilitation Act of 1973; Sections 503, 504) required that handicapped persons be employed, via affirmative action, in those enterprises doing more than set dollar amounts of business with the Federal Government. These and other relevant federal legislative acts will be further examined in Chapter Two.

Similar related legislation which supports the education of the handicapped has been enacted by state legislatures. For example, in the state of Maine, they include LD 965 (1973) "An Act Relating to Exceptional Children" and LD 1965 which provides the present approach to education of exceptional children in Maine (Department of Education and Cultural Services, 1977). These two laws provide for the following in Maine school systems:

1. Pupil Evaluation Team
2. Screening, Referral and Evaluation Process
3. Placement and Programming Policy
4. Due Process Procedures
5. Provisions for Record Keeping and Confidentiality

5. Program Review and Evaluation

The provision of these laws, along with those of federal law, is examined in more detail in Chapter Two.

The legal and ideological reasons, along with the efforts at the state level, provide a background for the present study. The next section contains a description of the problem of this study.

Statement of the Problem

The discussion of the background of the study suggests that a significant problem concerning the modification of the present delivery system for industrial education exists. For legal and educational reasons, the handicapped must have access to the benefits of industrial education. The present delivery systems, both secondary and post-secondary, need to be modified to provide these services. Some areas of change that are indicated include modification of facilities, modification of curriculum, development of different teacher strategies, change in teacher preparation, and other professional activities such as evaluation, counseling, and placement procedures.

This study proposes to concentrate on modifications which allow the prospective and practicing teacher to function
efficiently with handicapped individuals. These modifications are examined from the standpoint of recommendations for improving the pre- and in-service education of industrial education teachers. These improvements in teacher education should include meeting needs identified by professionals in the field.

The feasibility of incorporating identified professional competencies and other activities concerning education for the handicapped into the industrial arts and trade and industry degree programs at the University of Southern Maine is examined. Other potential methods of delivering this training for professionals in the schools of Maine are also examined. Resultant courses and related professional experiences will provide strategies and techniques for industrial educators to better serve the needs of handicapped learners.

The developed objectives are based on clusters of competencies developed around a clinical teaching model. The materials will be designed so that elements of them can be used in either in-service programs or pre-service teacher education programs.
Significance of the Problem

The significance of this study lies in its contribution to on-going efforts to deliver a viable teacher preparation and recertification program. The Department of Industrial Education and Technology at the University of Southern Maine has the responsibility for providing professional preparation of industrial educators within the state of Maine. Both pre- and in-service efforts are conducted through this department.

The University of Southern Maine and specifically the Department of Industrial Education and Technology have been given the mandate to study the feasibility of incorporating courses on education for the handicapped into the Industrial Arts and Trade and Industry degree programs (Maine State Plan for Vocational Education - 1980, p. 214). This study was designed to provide information regarding perceived needs of teachers and administrators regarding the content of these courses.

An assessment of programs which serve the handicapped in Maine was done in 1977 by the Department of Education and Cultural Services. It stated that one-half of the handicapped in the state were not receiving appropriate education as
specified in PL 94-142, (State of Maine, 1977). A more recent report completed in 1979 indicated a need for pre-vocational and vocational training for handicapped students. Statistics from 1977 showed that only two per cent of students enrolled in vocational programs were identified as handicapped (State of Maine, 1979, p. 71). In another section of the same document, the average incidence of individuals identified as handicapped in the total school system for 1978-79, was listed as 8.93 per cent (p. 23). Reasons given for this discrepancy included the inability to deal with the special needs of the handicapped population by teachers and administrators, as well as the custom of offering vocational classes to students only in their last two years of high school.

The same report recommended that the University of Maine should give special consideration to pre-vocational and vocational needs of special education students (p. 82). Under certification and recertification recommendations, it was suggested that courses in special education should be included in initial certification and recertification of all instructors and teachers at elementary, secondary, and vocational schools. It was further suggested that these
courses should include special education and techniques for the adaptation of all disciplines to the needs of handicapped students.

A need for continued development in the training of educators was evident from both these reports and interest was shown in occasional workshops within the state. It was felt that more realistic staff development efforts would be possible if existing needs were known. Knowledge about the existing needs of instructors for methods and techniques for use with handicapped persons would help those responsible for in-service training by focusing attention on problem areas. This could lead to the development of effective strategies for use in classrooms and laboratories at both pre- and in-service levels.

One of the responsibilities of the Department of Industrial Education and Technology is the state-wide delivery of in-service training. This is in keeping with the present concept of a "University College of Education". The concept of a "University College of Education" involves the various campuses of the University of Maine in a coordinated delivery of professional education for educators. This concept includes pre- and in-service components in all disciplines. Therefore, the Department of Industrial Education and Technology is the appropriate part of the
educational system in Maine to provide delivery of the developed training.

Purpose of the Study

The purpose of this study is to identify appropriate learning experiences for industrial educators in an area which has been neglected in many traditional teacher education programs. This neglected area contains the methods, activities, strategies, and modifications of existing curriculum, facilities and programs which are required for success by those students who are (or have been) identified as handicapped. Specifically, this study was designed to provide a content basis for teacher education efforts in industrial education for competencies needed by industrial educators who serve handicapped learners. The competencies proposed in this study have been identified by an examination of the literature and were validated by practicing professionals in the state of Maine.

Another purpose of this study was to identify, modify, or adapt an appropriate delivery system which will allow teachers and prospective teachers to receive this education within the state of Maine. While it was recognized that this education might be given at the pre-service level only for future teachers, it was decided to ask those practicing
professionals in the field for their opinion of the best
time for this education. The information was gathered by
means of a questionnaire and was used in the development of
the suggested objectives and delivery system.

A third purpose of the study was to develop a list of
objectives and competencies, which when verified, would
provide a means of structuring in-service programs for
those teachers in the field who are unable to receive
education in any other way.

Procedure Of The Study

This study concerned itself with the identification
and validation of professional competencies which can be
used to fulfill perceived needs of industrial education
personnel in the education of handicapped students. The
use of competencies to describe requisite knowledge and
skill has many precedents in industrial education. Many
taxonomies of competencies or behaviors have been developed
for teaching industrial education (Cotrell, 1972; Kruppa,
et al., 1973; Gallagher, 1976). This study examined the
literature for competencies which dealt specifically with
education for the handicapped as differentiated from those
which were related to industrial education and teaching
in general.
It was recognized that the educational process is holistic in that many of the educational techniques and knowledges used by teachers in the classroom were applicable regardless of the educational discipline involved or client-learners served. However, varying degrees of emphasis and use of knowledge and skill have been utilized to meet the different needs of learners. The specific competencies examined in this study were those which were needed and used extensively by industrial educators when providing educational experiences for handicapped learners.

The procedure developed for this study consisted of identification of competencies, verification of the need for these competencies, assessment of preferred timing for teacher education, development of teaching objectives, and evaluation of these developed objectives. These procedural steps are described briefly below and an expanded description is found in Chapter III, Procedure of the Study.

Identification of Competencies

The competencies were initially identified by an examination of the literature, particularly literature which contained related research and development efforts in other states. After identification of possible competencies from the literature, they were screened by a selected panel of educators with experience in industrial and special education.
This panel consisted of the members of an ad hoc committee set up by the Ohio Vocational Education Association to study needed changes for industrial education of handicapped learners. After the competencies were verified by the members of this panel, they were further screened by a panel of teacher educators familiar with industrial and/or special education.

**Verification of Competencies**

A verification of the needs of industrial education personnel in Maine was then done by use of a survey in which the respondents were asked to rate the competencies as "essential, nice to know, or not essential" based on their classroom experience. These respondents were also asked to indicate when training for each competency was desirable - pre-service, in-service, or other. The competencies contained knowledge and techniques related to the education of handicapped persons in an industrial education setting. The verification was done by teachers and administrators from the industrial arts and trade and industry programs in secondary schools in Maine. These educators were asked to respond based on their classroom experience with handicapped learners. The total population of industrial educators in Maine was surveyed along with administrators of their programs.
Review of Objectives and Competencies

For purposes of organization, the competencies identified in the literature were clustered prior to evaluation by the panel of experienced industrial/special education personnel and prior to verification of needs in Maine. The clustering was based on a clinical teaching approach, and the competencies in these clusters were carefully examined for inclusion, adequacy and correct categorization in the procedure used to develop the survey instrument. Based on the analysis of needs in Maine, these clusters were then further detailed by objectives and learning activities. These objectives provide a basis for the development of learning experiences for industrial educators, which will provide necessary knowledge and skills to educate handicapped learners.

The delivery of this education may be included in specific undergraduate courses or may be infused throughout the pre-service program, in curriculum, methods, and field experiences. Parts of these materials may also be used separately where a particular need is indicated by educators in the field.

The resulting objectives and competencies were evaluated for face and content validity by members of national committees. The evaluation was done by members of the Special
Needs Committee of the Industrial Arts Division of the American Vocational Association, and by members of the Students With Special Needs Committee of the American Industrial Arts Association. These experts were asked to indicate the level of proficiency which would be desirable for classroom teachers for each of the competencies ordered under the developed objectives.

Limitations and Delimitations

This study was conducted subject to the following limitations and delimitations:

1. This study was delimited to particular knowledges and skills perceived by industrial educators, although it is recognized that the knowledges and skills identified may well be requisite skills for educators in other disciplines.

2. The initial selection of competencies to be considered was delimited by an examination of studies in the literature and by a determination of the appropriateness of the competencies of these studies to the present effort.

3. The verification of the selected competencies was delimited to the population of Maine industrial educators and administrators.

4. The use of written materials in the survey limited contact with the industrial educators and local administrators to that medium.
5. The nature of the subject as well as the use of a survey research method may have limited the rate of return.

6. The evaluation of the developed objectives and competencies was limited by selection of only joint members of both the American Vocational Association and the American Industrial Arts Association Committees on Special Needs.

Assumptions of the Study

It was necessary in a study of this nature to make some basic assumptions. The assumptions made by this investigator were:

1. There is a need to modify the curriculum and learning environment to increase the benefit to handicapped individuals from industrial education in the classroom/laboratory setting.

2. There are specific needs that are unique to industrial educators preparing to modify their programs of study for handicapped learners, and these needs can be identified in terms of knowledge and skills (competencies) to be used in the classroom/laboratory.

3. Some of these needs have already been identified in previous studies along with recommendations for the
professional preparation of teachers which may have implications for the pre- and in-service education of industrial education personnel.

4. Regional differences among industrial education personnel in Maine may exist although professional needs may be similar to those posed by industrial education personnel in other states.

5. The perceived needs of industrial arts teachers and trade and industry teachers for knowledge and skills relating to the education of handicapped learners are more alike than unlike.

Definition of Terms

The following terms were used frequently throughout the study, therefore a discussion and definition was included below:

**Industrial Education**

Industrial Education should be regarded as a general term which embraces all forms of education which relate to industry. In fact, such studies as engineering and industrial management have often been overlooked. For example, a definition published by the American Vocational Association (1971) is given below:

*Industrial education - A generic term applying to all types of education related to industry*
including industrial arts education, vocational industrial education (trade and industrial education), and much technical education. (p. 37)

In Maine, the term "industrial education" has been used to describe those educational activities which include industrial arts education and trade and industrial vocational education. These two parts of education, while having different purposes (outcomes for the learner), do share some of the same understandings, skills, and attitudes as overall objectives. Professionals in both industrial arts and in trade and industry vocational education have been traditionally considered as industrial educators in Maine. Close professional affiliations exist between both groups. The State Department of Education and Cultural Services also recognizes this grouping as evidenced by its publication of a "Directory of Maine Industrial Arts and Trade and Industry Teachers". The consultant for this group is one individual. Certification of teachers, however, is specific and usually not overlapping.

A recent definition of industrial education, by the Department Chairman of the Industrial Education and Technology Department at the University of Southern Maine, indicates the broad based use of the term within the State
Industrial education is a generic term inclusive of all programs which draw their content from, and are concerned with industry.

(Berry, 1979.)

Because it is usually used in a more limited way, "industrial education" has been defined for this study as:

Those parts of education which provide information to the student about industrial technology. Specifically, industrial education shall include learning in those areas traditionally known as Trade and Industrial Vocational Education and Industrial Arts.

Special Education

The law in Maine is based on Chapter 404 of the Maine State Law of 1973. The passage of PL 94-142 did not create any conflict with Maine State law, therefore the existing state statute is used in the state. The term exceptional children is defined as:

...any persons who reach the age of 5 years on or before October 15 of any school year and until the end of the school year in which such persons reach the age of 20 years who require special services in the areas of vision, audition, speech and language, cerebral or perceptual functions, physical mobility functions, behavior, mental development, or maturation, or multiples of these functions, as defined by the commissioner, so that their educational program and potential may be realized. (Chapter 404, Paragraph 3123, Maine State Law.)
Special education as defined by Maine Law includes:

...classroom, home, hospital, institutional or other instruction; educational diagnosis and evaluation; transportation and other supportive assistance, services, activities or programs, as defined by the commissioner, required by exceptional children.
(Chapter 404, Paragraph 3123, Maine State Law)

Based on the above discussion the following definition of Special Education has been used in this study:

Those parts of specific and general education of any discipline which are designed, adapted or developed to be delivered to learners with special needs. Special needs are typically associated with those learners who have been identified as either handicapped or disadvantaged.

**Handicapped Learners**

Based on the above discussion of Maine State Law which describes "exceptional children", the following definition of Handicapped Learners was developed. It is also based on the categories of handicapping conditions listed by the United States Office of Education (1975). "Handicapped Learners" have been defined for this study as:

Those learners who have been identified as having one or more of the following handicaps:

- Emotionally Disturbed
- Mentally Retarded
- Learning Disabled
- Speech Handicapped
- Visually Handicapped
- Deaf
- Hard of Hearing
- Crippled and Health-impaired
- Deaf, Blind and other Multi-handicapped. (United States Office of Education, 1975)
Summary

This study is based on an identified need, the necessity of upgrading industrial educators in the state of Maine to provide for the effective education of an identified handicapped population. Support for this statement has been given in reports done in the state of Maine. A mandate has been given to the University of Southern Maine to examine the feasibility of including education to meet this need in industrial arts and trade and industry teacher education programs. This study was planned as an initial step in fulfillment of the need in that it identifies competencies perceived as necessary by educators in the public schools.

This chapter describes the need for upgrading teachers in industrial education for skills and knowledges which are absent from present teacher preparation and certification procedures in Maine. It describes the outcomes of the study and lists the assumptions, limitations, and delimitations of the study.

The second chapter reviews the literature pertinent to the legal need for education of the handicapped, other projects which have been conducted to
determine the needs of industrial educators and, suggested methods of providing information about the needs of the handicapped for industrial educators.

Chapter three details the methodology of this study and analysis procedures.

Chapter four presents the data obtained and their analysis.

Chapter five contains the developed list of objectives and competencies and summarizes the importance as found by educators in Maine and the level of proficiency as suggested by the review of national experts.

Chapter six contains the summary of the study, conclusions, and recommendations of the study.
CHAPTER II

REVIEW OF THE LITERATURE

This chapter will examine pertinent literature about projects which have been conducted to describe or promote the education of the handicapped learners in industrial education. The chapter will concentrate on the following areas: legislative or legal support for education of the handicapped, identification of needs as expressed by industrial educators, and identification of competencies listed as important for industrial educators in the education of the handicapped.

Throughout this review, an effort to describe the methodology and reported results of these projects will be made. This chapter will answer the question, "What has been done?" and will examine two others, "What needs to be done?" and "How can it be done?" A further description of "How?" will be included in Chapter III where the methodology for this study is described.
When one attempts a study of this nature, an investigation involving two separate disciplines, it seems appropriate to examine the philosophical underpinnings of both. The two disciplines considered were industrial education and special education. Combination of the practices of these two disciplines was due in part to legislation and in part to an increasing awareness of the responsibility of education to provide for the needs of all students as individuals. If indeed a general goal of education is to provide an opportunity for each individual to maximize his/her potential, then industrial education, as a part of general education has an obligation to be accessible (physically and academically) by all members of the student population.

Industrial Education has been defined for this study as:

Those parts of specific and general education which provide information to the student about industry and technology (Industrial Technology). Specifically, industrial education, for this study, shall include learning in those areas traditionally known as Trade and Industry Vocational Education and Industrial Arts general education. (cf. p. 16)
While this definition was adequate for the study under consideration, it was restrictive in that there are areas of learning which were related to education and industry which were not included. Some examples, strictly within the State of Maine, included: Agriculture, Forestry, Wood Harvesting, and Health Occupation. While these areas were generally considered a part of Vocational Education, they were not included in the study because they were not part of trade and industry or industrial arts (Industrial Technology) education as defined by Maine.

Special education has been defined for this study as:

Those parts of specific and general education of any discipline which are designed, adapted, or developed to be delivered to learners with special needs. Special needs are typically associated with those learners who have been identified as either handicapped or disadvantaged. (cf. p. 17)

While the role of special education within the schools is changing in practice, the underlying concept of providing individualized, appropriate education to those persons who need it has not changed. The role of the special educator appears to be changing from that of
a manager of a self-contained classroom only, to a broader concept of a resource person within the school. (Brolin, 1978; Holmes, et al., 1975) The responsibilities of the special educator are likewise changing in that consultation, providing resources (facilities, learning materials, and strategies), and serving as an integral part of the pupil evaluation team are often included.

This brief discussion of industrial education and special education and the separate efforts of both to accomplish the goal of maximizing the potential of each student is indicative of the changing role of education in America. Other indicators of this change include the concern with the learning disadvantaged - those who, for one reason or another, are unable to succeed in the "normal" classroom. Often the terms "disadvantaged" and "handicapped" have been used interchangeably or together.

One other indication of, or possibly a clarification of, this changing role of education includes the idea of drop-in, drop-out education. A life-long process of education with multiple entry and exit points has been advocated by Shane and others (Hull, 1977; Illinois
State Board of Education, 1979). This concept is beginning to be seen in recent federal legislation in the form of extended upper and lower age limits for certain provisions of education mandates.

The changing role of education in general could be characterized by the word "appropriate" (including individualized and remedial when that is appropriate) education experiences for "all" (including the disadvantaged and handicapped) students at public expense. The responsibility of educators in this process was stated by Miller and others (1978) as: "Creating means that are responsive both to the legislative intent and to the educational needs of the handicapped and non-handicapped students." (Miller, et al., 1978, p. 1)

A suggested way of considering this responsibility was to have agencies and educational institutions become "client centered" rather than concentrating on "crisis intervention." (Munsen, et al., 1978)

Legislative and Legal Support for Education of the Handicapped

Federal Legislation

An examination of the federal legislation and activities which were specifically targeted at facilitating
the process of providing education for the handicapped
was in order. At least one study (Special Education in
Maine, 1977) cited two causes for federal action with
regard to education of the handicapped. These two causes
included the personal interests of both Presidents
John F. Kennedy and Lyndon B. Johnson, and; the growth of
the consumer movement throughout American Society.
These causes came at a time when there was much concern
for the civil rights of minority groups in American
Society. Members of minority groups have been frequently
labeled as "disadvantaged," both economically and in other
areas of American Society.

The history of federal legislation can easily be
traced to 1961 with the creation of the President's Panel
on Mental Retardation. The mandate of this panel was to
develop a national plan for services to this group.

The Vocational Education Act of 1963 called for the
creation of an advisory council on vocational
education. This was later referred to as the Essex
Council. In its 1967 Report it suggested specific
training for the handicapped among other recommendations.
The 1965 Elementary and Secondary Education Act included handicapped individuals in Title I. In the 1968 Amendments to this act, support was given for state operated schools and hospitals (PL 89-313). Title VI of the act (PL 89-750) was written to initiate, expand, and improve programs and services for exceptional children. It also encouraged an increase in the number of teaching personnel in the education of the mentally retarded through grants to state departments of education, colleges, and universities.

The Vocational Amendments of 1968 (PL 90-576) created a Bureau of Education for the Handicapped which was to provide technical assistance to states for this education. Also included in the Vocational Amendments of 1968 was a stipulation that ten per cent of monies received were to be used for the education of the handicapped.

In 1973, PL 91-230 provided for the establishment of thirteen regional resource centers which were to provide in-service funding for education of teachers. Also in 1973 the Rehabilitation Act of 1973 was passed. It was important in that it protected the civil rights of the handicapped. Two sections, SS 503 and SS 504 were of
particular interest. Section 503 mandated that any employer doing more than $2500 worth of business with the federal government take affirmative action to recruit, train, hire, and promote handicapped individuals. Also included in Section 503 was the provision that any employer doing more than $50,000 worth of business with fifty or more employees be required to develop and maintain an affirmative action program with stated policies and practices (Razeghi and Halloran, 1978).

Section 504 addressed discrimination on the basis of handicap in any private or public program which received federal financial assistance. Specifically, these programs must:

1. Provide equal opportunities, benefits, aids, and services for handicapped even though these opportunities do not produce equal results for the employer.

2. These aids, benefits, and services were to be provided in the same setting unless their effectiveness was jeopardized by doing so.

3. Barrier free environments must be provided for program and facility accessibility.
4. Equal recruitment, training, promoting, and compensating must be provided for the handicapped. (Razeghi and Halloran, 1978).

While the Rehabilitation Act of 1973 did not address public education, per se, the implications for handicapped persons exiting public education were significant. Therefore it became imperative that the education institutions prepare these people to function in this environment.

The Education Amendment of 1974 (PL 93-380) further specified the rights of handicapped youngsters within the education institution of society. It specified "Due Process" rights of handicapped youngsters and their parents. It also specified the use of the least restrictive educational environment which was appropriate for the educational services. It set the delivery of full educational services as the goal for states and required that they develop a plan to provide these services.

In 1975, the Education for All Handicapped Children Act (PL 94-142) was passed. This has become the national mandatory special education law. It charged local and state boards of education with responsibility for free,
appropriate public education for all handicapped persons aged 3 to 21. (Razeghi and Halloran, 1978). Its impact was far-reaching, including industrial education and all other disciplines of education. The full impact of this legislation was strengthened because it incorporated but did not limit the provisions of preceding legislation. It provided massive funding with no expiration date and made the education for handicapped children a matter of national policy.

The Education for All Handicapped Children Act mandated a state plan for education of the handicapped and stipulated some of the provisions of that plan. Some of these stipulations included the establishment of screening, referral, and evaluation processes; placement and programming policies; and record keeping and confidentiality practices for school systems. For the individual student, a pupil evaluation team must be established and an individual education plan must be written and reviewed yearly. (Special Education in Maine, 1977).

The Education Amendments of 1976 (PL 94-482) further amplified the provisions of PL 94-142 by specifying criteria which must be met by states in order to receive
vocational funding under Title II. These criteria included:

1. Assurances that set-aside monies are used correctly and that the State Plan for Education of the Handicapped is in agreement with the State Vocational Plan.

2. One and five year plans which describe programs must be provided.

3. Assurance that the educational services will be a part of appropriate education for individuals.

4. Ten per cent of state grants were to be used for the handicapped and these funds are to be matched 50/50 by the state.

5. The handicapped are to be represented on national and state advisory boards.

These legislative acts are all in effect on the national level and should be appropriate for all students no matter which is their state of residence.

State Legislation

Individual states have also passed legislation for the education of handicapped children and, in some cases, adults. Each state was required to formulate a state plan.
for the full range of educational services according to the Educational Amendments of 1974. The State of Maine has developed such a plan, based in part, on its own legislative action. A description of that state's legislation and program will be given below.

The Department of Education and Cultural Services listed three causes for state legislative action in Maine. These were:

1. Pressure from specific groups
2. Court actions
3. Impact of federal legislation

(State of Maine, 1977)

Historically, the first evidence of concern for handicapped individuals within the state was the founding in 1869 of the Governor Baxter State School for the Deaf by the Portland School Board. This school has continuously provided services for the hearing-impaired within the state. Following World War I the State of Maine established the Division of Vocational Rehabilitation to aid returning veterans of that war. It continued to be a major influence in education of the handicapped in Maine, although the majority of its services was for adults.
Public Education in the state received its first impetus during the 1954-56 Biennium when a program for the mentally retarded was funded. This program was primarily for the educable mentally retarded.

In 1971, the Commissioner of Education was asked by the State Legislature to draft a plan of action for Exceptional Children. In 1973, LD 965, "An Act Relating to Exceptional Children" was passed. The impact of this act was to provide free public education with state support for those children identified as "exceptional". This legislation was further amended by LD 1956 and has resulted in a state-wide plan for education of exceptional children.

Briefly, the plan included the following six steps for the education of handicapped learners:

1. **Pupil Evaluation Team** - This team was to be established by school administrative units and must include the following: administration, instructional staff, student personnel, and the student - for each student identified as exceptional.

2. **Screening, Referral, and Evaluation Process** - Screening was to be done by examining the total population
and identifying potential users of special education services (the total population includes those entering and transferring students).

Referral was done as a result of this screening and other provisions such as teacher input, self-referral and parental referral. The referral was to the Pupil Evaluation Team for further evaluation and educational action.

Evaluation was done by using a multi-source assessment including available instrumentation and observation. The tests used included formal, informal, and sometimes diagnostic tests. All decisions, including the evaluation, were to be made by the pupil evaluation team.

3. Placement and Planning - It was the policy of the Maine Department of Education and Cultural Services that "all exceptional children be provided equal educational opportunities by all administrative units" (State of Maine - Regulations; Chapter 404, Title 20, Section 3121). The administrative unit bore the burden of proof in placement in other than a regular educational setting. The range of possible services was also included in Chapter 404, Title 20, State of Maine - Regulations.
The Individual Education Plan was formulated by the Pupil Evaluation Team (Section 3124 - Regulations).

4. **Due Process and Procedure** - Due process and procedure was guaranteed to the child and/or parents or legal guardian by LD 965 and LD 1956. This was incorporated in Regulations, Section 3131.

5. **Record Keeping and Confidentiality** - According to the Buckley Amendments (The Family Educational Rights and Privacy Act - Title V, Sections 513-514 of PL 93-380) the individual's right to privacy was preserved. At the same time, parents may review and/or question all records.

6. **Program Review and Evaluation** - Besides the individual review of individualized Educational Plans (specified by federal law), the programs were to be reviewed by the following agencies:

   - **Elementary** - Elementary School Self Evaluation
   - **Secondary** - Accreditation by the New England Association of Universities and Colleges

The foregoing discussion outlined the present procedure used within the State of Maine. These procedures are in fulfillment of the federal mandates and the requirements of the state legislature (State of Maine, 1977).
Identification of the Need for Industrial Education for Handicapped Learners.

Since education of the handicapped has been identified as a national priority by the passage of PL 94-142 in 1975, there have been efforts in many states to identify needs and plans of action. A review of some of these activities is presented in the following section.

The state of Wisconsin was examined by Kumar (1977) with regard to educational techniques for the handicapped and barriers to the access in the sixteen Vocational, Technical, and Adult Education Districts. This study was a part of the Program Evaluation and Planning (1977-82) Project. The objectives of Kumar's study were to:

1. Evaluate special needs projects in the areas of agriculture, business, home economics, trade and industry, health distributive education, and pre-vocational programs. From this evaluation he attempted to discover what techniques were successful in instruction of the handicapped.

2. Analyze and report on the barriers which prevented the handicapped from enrolling in or completing vocational training programs. He cited two reasons for
concern with the handicapped in vocational programs: federal legislation, and high therapeutic value of these programs.

After a search of the literature and visits to all sixteen Vocational, Technical, and Adult Education Centers, and pilot testing, Kumar developed a four part instrument containing eight pages and 189 items. The sections included:

I. Personal information
II. Successful Teaching Techniques
III. Barriers to enrollment in programs
IV. Barriers to completion of programs

The instrument included respondent supplied information for the first part and a five-point Likert type scale for the following three parts. The reporting procedure included grouping the "agree" and the "strongly agree" responses together, as well as the "disagree" and "strongly disagree" responses to yield percentages.

Conclusions included that teachers:

1. Had confidence in testing for evaluative purposes
2. Used varying instructional approaches
3. Were somewhat reluctant to engage in behavior modification.

4. Were somewhat reluctant to support mainstreaming.

5. Had a need for in-service training in teaching methods.

6. Had a need for in-service training in teaching materials.

7. Had a need for awareness of needs and desires of the handicapped.

The analysis of barriers included three areas:

1. Within handicapped individuals, families and other advocates

2. Within the helping system

3. Within society

Two recommendations were listed for pre-service teacher education programs. These included an emphasis on interdisciplinary skills and the ability to develop teaching materials for use in the classroom. (Kumar, 1977)

The Department of Vocational Education, Colorado State University, at Fort Collins, conducted a study dealing with evaluation of programs for the disadvantaged. (Colorado State University, 1976) The purpose of this
The study was to develop a packet of individual instruments for use in evaluating and improving the effectiveness of all special vocational education programs. The special vocational education programs were limited to those which were funded with federal vocational funds and located in eastern Colorado. The sample was further limited to ten selected programs classified as Cooperative General, Supplemental Services, and Alternative Schools.

The instruments developed were pilot tested and included the following topics:

1. General attitude
2. Student attitude
3. Vocational teacher attitude
4. Special program information
5. Related instructional material
6. Attendance and tardiness
7. Public relations
8. Student follow-up
9. Special program follow-up

The instruments were claimed to meet Ahmann's criteria for content validity and a test, re-test procedure was used to check reliability. Since the items were of the
"yes, no, comment" variety, the congruence of answers in the reliability test was confirmed by inspection. (Colorado State University, 1976)

The results of the project were the development of nine instruments based on the topics listed above. Each instrument contained between ten and twenty-six items and all were of the alternate response, with comment format.

A series of four workshops was held in the State of Ohio in the Spring of 1977. These workshops included presentations by selected individuals in different regions of the state. Topics included Implications for Special Education, Implications for Vocational Education, Vocational Education Alternatives for Handicapped, Task (Work) Related Competencies, Teaching Strategies, Instructional Materials, (Macer, 1977). In the beginning of each workshop, an attitude assessment instrument was completed by the participants. The instrument contained fifty-nine items and the format was a seven point Likert scale with no neutral response.

Another project conducted by the Ohio Department of Education, Division of Vocational Education, produced a handbook for those involved in educating the handicapped.
This was basically a "how to" handbook which suggested procedures for setting goals, vocational assessment, structuring programs, and evaluating student performance. Also included were discussions about needs of the handicapped and suggested techniques and methods. (Buffer, 1978)

In the State of Kentucky, Holmes and others (1975) surveyed the perceptions of personnel in three areas related to education of the handicapped: Vocational Education, Special Education, and Vocational Rehabilitation. This study was conducted state-wide and was concerned with vocational planning for the handicapped. Areas investigated included:

1. Direct instruction services/functions
2. Support services
3. Professional training
4. Cooperative efforts
5. Support services desired
6. Problems encountered

Holmes found that least emphasis was placed on social skill training, citizenship and community awareness, and
occupational exploration. He found that members of each agency consistently rated themselves as needing more preparation than they had. However, each agency group tended to rate its services as high and the services of other agencies lower. An attempt was made to obtain information about perceptions of importance and status (amount of it being done) for services.

Also noted was the frequency of inter- and intra-agency requests for assistance. It appeared that both were practiced, but that intra-agency requests were more likely to be reported as satisfactory. The researchers also noted a need for better role clarification and suggested that more emphasis be given to cooperative agreements between agencies to reduce service gaps and overlaps.

The study went on to discuss a possible service model containing regular vocational teachers, special vocational teachers, and consulting teachers to work through schools and agencies. Suggestions were given for improving teacher certification guidelines and included courses in characteristics of the handicapped, methods of teaching the handicapped, and behavior modification for
the handicapped.

Pre- and in-service programs were suggested for both teachers and agency personnel in the following specific areas:

1. occupational exploration
2. specific training (Vocational), and
3. skill improvement.

The skills were listed as: task analysis, writing behavioral objectives, formal and informal assessment, behavioral management, social development, and language development as they relate to vocational preparation by teachers of the handicapped. Field experiences were also suggested for teachers (internships, field trips, actual case work, practicums, and visits to exemplary programs).

The State of Michigan also conducted a state-wide survey of coordinators of special needs projects (Manzetti et al., 1976). The purposes of this study were to obtain information about what type of students were being mainstreamed and where they were located. Other purposes included finding information about the types of teacher training being used and the problems encountered by the teachers.
The survey was a twenty-four item questionnaire with all but two items objective in nature. It was sent to 116 coordinators after an initial telephone contact. Validation of the instrument was by review by qualified professionals in measurement and evaluation as well as vocational educators and special educators.

Findings of the study indicated that educable mentally retarded were mainstreamed at most locations and the emotionally impaired were mainstreamed in the fewest locations. The majority of regular classroom teachers had received some training to aid them in working with handicapped students. It was found that parents of the handicapped students and special education staff were the most supportive of mainstreaming, while regular teachers and parents of non-handicapped students tended to be less supportive.

It was also found that the majority of handicapped students who were mainstreamed were in vocational programs as contrasted with college preparation or general education programs. The speech and language impaired were mainstreamed for a greater part of the day, while the educable mentally retarded, learning disabled, and
multiply handicapped were mainstreamed for less than half of the day.

Problems that were identified included the following:

1. Cooperation of regular teachers regarding curriculum modification
2. Curriculum modification itself
3. Lack of methods and materials
4. Inabilities of handicapped students
5. Poor teacher preparation

(Manzetti, et al., 1976)

In Virginia, a study was done by Sheppard (1975) to identify problems and competencies needed by vocational and technical education personnel who were involved in teaching special needs students. The objectives of the study were three-fold:

1. To identify in-service needs and problems of teachers who were teaching the handicapped and disadvantaged.
2. To identify those competencies perceived as being critical in working with handicapped and disadvantaged.
3. To determine teaching techniques, resource persons, and/or curriculum materials which were most helpful - as perceived by vocational teachers.

A survey questionnaire was developed and sent to vocational-technical administrators, instructors, and counselors. The sample included 108 persons.

Some of the most frequently listed teaching techniques, resource persons and/or curriculum materials found to be useful included:

1. A V aids
2. Demonstration method of teaching
3. Field trips
4. Films
5. Games
6. Hands-on activities
7. Individual instruction
8. Guest speakers

The results of the request for persistent problems encountered on a day-to-day basis were categorized as:

1. Problems related to the student
2. Problems related to vocational education personnel
3. Problems related to classrooms, curriculum, and instructional materials.
The following problems were listed by several respondents:

1. Student's lack of motivation
2. Student's personal problems
3. Student's poor attendance
4. Vocational education personnel's lack of instructional materials and packages.
5. Vocational education personnel's inability to provide quality instruction for all students
6. Inability of textbooks to reach all students.

The instrument listed sixteen competencies. All were ranked important or very important. They were ranked on a four point scale.

Recommendations included in-service program development by teacher educators as well as inclusion of course work at the pre-service level to develop competencies needed for education of the handicapped. Also included was the recommendation that school boards increase in-service efforts. (Sheppard, 1975)
Gardiner (1977) conducted a survey of career education in the New England states. The states surveyed were to include Massachusetts, New Hampshire, Maine, Vermont, and Rhode Island. However, due to a weighted randomized sampling technique, the sample population was predominantly from Massachusetts. Due to the time of the initial mailing, and other factors such as length of the instrument and its complexity, the return ratio was 38%.

The purposes of the survey were to gather demographic data, data about curriculum and instruction, the scope and breadth of career education, students, and opinions on future needs. (Gardiner, 1977)

The instrument contained 231 items, most of them answered by yes, no, or NA (not applicable.) Methods and activities were rated on a five-point scale (Almost always - Never). The data on opinions of future needs was obtained by rank ordering eleven statements.

Findings included the following:

1. More males than females work in career education for the handicapped.

2. A significant proportion of programs do not use advisory committees in curriculum development activities.
3. Few respondents were working where career education is infused throughout the entire curriculum.

4. A significant number of respondents did not know the per cent of students ready for the job market for a given year.

Summary recommendations included the following:

1. Teacher training in career education for the mildly handicapped should be increased.

2. Procedures should be established to involve the community in career education programs.

3. Methodology of career education should be appropriately evaluated and the results disseminated.

4. Curriculum development projects which will yield validated curriculum products for mildly handicapped students in career education should be funded.

5. Funding, from state, federal and local governments should be increased.

The reviewer is cautioned that there is a possibility of a response set bias when interpreting the results of this study. (Gardiner, 1977)
It should be noted that these studies indicated the following:

1. There was a need for training in the teacher education programs for knowledges and skills related to education of handicapped learners, and

2. These improvements in teacher education should be implemented at both the undergraduate pre-service and the post-employment in-service levels.

Based on these analyses, it was decided to pursue further those studies which suggested and/or utilized competencies for industrial educators in the area of education of handicapped learners.

Rationale for Use of Clinical Teaching Model

Before examining specific studies which dealt with competencies for industrial educators, it was decided to examine the nature of attitudes, skills and knowledge needed by teachers of handicapped learners. The following studies were reviewed to help develop a model for the education of industrial educators.

Hughes (1978) examined attitudes of vocational educators and others relative to education of the handicapped. He examined vocational teachers in North
Carolina by utilizing Lazar's (1973) Attitudes Toward Handicapped Individuals (ATHI) Scale. He concluded that vocational educators are accepting handicapped individuals in their programs. By comparison with other groups previously tested with the ATHI Scale, he found that vocational educators hold attitudes similar to those of other practicing educators. By studying specific items in the ATHI, Hughes found that vocational educators were neither conclusively supportive nor totally rejecting of mainstreaming.

Hughes pointed out that the attitude of vocational instructors is important and affects the success of the integration of handicapped learners in vocational education programs. He stated that attitudes affect the instructor's interaction with handicapped students and willingness to modify curriculum and/or laboratory areas. The attitude of the instructor affects the group climate of the classroom and influences the instructor's relationship with parents, employers, other school personnel, and the community in general. He further suggested that changing teacher behavior caused by teacher attitudes would affect student achievement. Hughes suggested that an active and
positive teacher interaction with the handicapped would foster a positive learning environment with all students.

Hughes suggested the following characteristics of a positive attitude based in part on the works of Paul, et al., (1977) and Birch (1974):

1. Belief in the right to an education for all students,

2. Having, and openly showing, a respect and appreciation for differences,

3. Willingness to share information and competencies as a team member,

4. Openness to include parents and other school personnel in planning for and providing instruction to students,

5. Flexibility with respect to curriculum and instructional procedures, and

6. Recognition that social and personal development can be taught, and that they are just as important as skill achievement.  

(Hughes, 1978, p. 79)

Haraysmiw and Horne (1975) investigated attitudes of educators involved with the integration of handicapped into classes. They compared attitudes of those teachers
with handicapped in their classes with the attitudes of those who did not have handicapped in classes. These authors used a 52 item Likert type questionnaire containing social distance type questions and found that teachers with integrated handicapped students tended to have more favorable attitudes as did younger teachers. They found that there was no significant difference between male and female teachers. Haraysmiw and Horne also found that there was a tendency for teachers with less education (as measured by degrees held) to have a more positive attitude. Finally, they found that teachers who had more special education coursework did not necessarily have a more positive attitude.

They concluded that retraining programs and in-service experiences and workshop approaches would appear to be viable alternatives for re-education of classroom teachers. They also concluded that current teacher education programs were effecting some good attitudinal perceptions.

Miller, et al. (1978) examined the opinions of parents of hearing impaired students and educational personnel involved in their education. In an open
interview survey, they found that, of parents, only 40% responded with concerns about cognitive development as contrasted with 90% who focused on non-cognitive objectives such as roles in the occupational structure (work habits, attitudes, personal independence, self sufficiency, sense of responsibility, etc). Teachers responded similarly: cognitive development was noted by 39% and social and personal development was noted by 80%. Administrators did not see cognitive and personal development as dichotomous alternatives and therefore responded highly in both types of responses (cognitive, 75%; personal/social, 96%).

Miller, et al., suggested that education personnel do the following while educating children who may have special needs:

1. Evaluate common and individual differences
2. Formulate plans for promoting variable outcomes
3. Monitor change continuously for need of further intervention.

Higgs (1975) examined a population of students, counselors, college students (in education) and parents to determine the effect increased contact had on attitude
formation about the handicapped. He found that attitudes could and did change with more exposure to and knowledge about handicapping conditions. He found that generally, more contact led to a more positive attitude. He used the Attitude Toward Disabled Persons Scale developed by Yuker, Block, and Young in 1970.

These studies suggested that attitudes of teachers were important and had a direct bearing on the effectiveness of education for handicapped learners. Although they did not address handicapped learners per se, Rosenthal and Jacobson (1968) did demonstrate the affect of teacher attitudes on student achievement. Their work was further clarified by Good and Brophy in 1973 when they listed five steps necessary for teacher expectations to become a basis for self-fulfilling prophecies:

1. The teacher expects specific behavior and achievement from particular students.

2. Because of these different expectations, the teacher behaves differently toward different students.

3. This teacher treatment tells each student what behavior and achievement the teacher expects from him and affects his self concept, achievement motivation and levels of aspiration.
4. If the teacher treatment is consistent over time and if the student does not actively resist or change it in some way, it will tend to shape his achievement and behavior. High-expectation students will be led to achieve at high levels, while the achievement of low-expectation students will decline.

5. With time, the student's achievement and behavior will conform more and more closely to that originally expected of him.

(Good and Brophy, 1975, p. 75)

These studies suggested that a necessary part of the successful teaching of handicapped learners was a positive attitude and that a positive attitude could be based in part on knowledge of and about handicapping conditions affecting learners. This positive attitude could form a viable and necessary part of the classroom environment and could positively affect the achievement of learners in the environment.

Bond and Weisgerber (1977) developed a module which encouraged the development of positive attitudes regarding mainstreaming the handicapped in vocational education. The purposes of this module were to lead the teacher to understand what attitudes were, how they affected learning and other behaviors and to develop attitudes
which positively affect teaching in classrooms where handicapped students are mainstreamed. They examined causes of negative and positive attitudes as they affect the teaching/learning process. Bond and Weisgerber listed the following as causes of negative attitudes:

1. Fear that teachers cannot teach the handicapped effectively.

2. Need for increased effort on the part of the teachers.

3. Concern for psychological or physical welfare of those involved.

They listed the following as bases for positive attitudes:

1. Handicapped have a legal and moral right to equal education.

2. Handicapped are on the same continuum as non-handicapped in terms of individual strengths and weaknesses.

3. Acceptance of the handicapped student by teachers, other students, and other school personnel fosters positive attitudes.
4. Participation in regular classes has important benefits other than just learning specific skills that are taught.

Besides a positive attitude, it was found that other skills and knowledges were needed by educators who were planning to include education for handicapped learners in "regular" classes. Some of the knowledges cut across subject matter lines and involve the whole school system. Others were needed by individual teachers and were involved with the planning, organizing, and controlling of the teaching/learning process.

In 1977, Paul, Turnbull, and Cruickshank developed a guide for implementation of mainstreaming of handicapped learners. While not exclusively for industrial education, this guide provided help for the planning and initiation of mainstreaming for teachers in all disciplines. It was the opinion of these authors that mainstreaming would be most successful if it were approached from a total school system involvement. They called for extensive in-service programs as a group for all persons involved. While recognizing the difficulty of implementing this approach, they strongly recommended it because it forced the
personnel involved to recognize the responsibilities of
the total school system and to work together in a team
effort to achieve them. Responsibilities identified
included: placement, individualizing instruction, social
adjustment, and parental consultation. The team approach
was considered essential for effectiveness in providing
needed change in school systems to accommodate students
with learning handicaps.

Paul, Turnbull and Cruickshank called for changes in
the education of all future teachers which included
development of skills based on understanding and
cooperation between special educators and teacher educators.

Weisgerber (1977) developed a series of self-
assessment modules in seven areas which were designed to
improve knowledge and skills of vocational educators who
were or would become involved in instruction of
handicapped learners in regular classes. In one of the
modules, Mainstreaming the Handicapped in Vocational
Education, Developing a Plan for Action, he emphasized
three phases: planning instruction, carrying out
instructional plans, and evaluating outcomes of instruction.
In this self-reporting module, the educator was asked to
assess his knowledge and attitudes about handicapped
students, the material to be taught, and resources available to the teacher. The educator was led to re-examine goals and list modifications to curriculum, equipment, facilities, materials, and instructional approach.

The educator was asked to evaluate the individual student's development of skills, work attitudes and habits. These were to be listed, along with areas for further development. The educator was then asked to assess the overall outcomes of instruction and to solicit student opinions about them.

Phelps and Wentling (1977) examined current procedures for identification, assessment, and evaluation of special needs learners. They identified a problem with current identification processes in that they used labels which had an effect on attitudes of students and teachers. They identified problems in the use of current assessment information. Included were the use of technical language, concern with causes of problems in the learner instead of the educational effects of the problem, and the lack of assessment of occupational interests or aptitudes. They
found that format of these assessments frequently consisted of a lengthy narrative of little use by teachers interested in including the special needs student in their classroom.

Phelps and Wentling suggested a four phase system for assessment and evaluation. They suggested that data should be collected prior to instruction, during instruction, at the end of specific units of instruction, and after the conclusion of the program (follow-up). They further suggested that this information about the achievement of students be shared with all instructors involved and all appropriate administrators throughout the total program.

In 1977, the (then) Center for Vocational Education at The Ohio State University reviewed vocational education for the handicapped (Hull, 1977). In this review, it was noted that one of the reasons for vocational education of the handicapped was that their on-the-job performance compares favorably with that of non-handicapped. Hull further developed the rationale that all persons are limited in that they are not capable of performing all skilled activities, therefore, exclusion of those
identified as "handicapped" constituted discrimination. This discrimination, he stated, "... is much too costly to perpetuate at public expense" (Hull, 1977, p. 3).

In his review, Hull listed some studies as being significant in the development of lists of competencies for vocational educators who teach handicapped students. Of particular interest were the following:

1. Kruppa, Hritz, and Thrower (1973)
2. Bitter (1971)
3. Brolin and Thomas (1972)
5. Clark and Oliverson (1973)
6. Albright, Nichols, and Pinchack (1975)
7. Nielson, Johnson, and Frank (1975)

These will be examined further in the next section of this chapter.

Hull suggested four alternatives for providing vocational education for handicapped learners. They included regular vocational classes, special vocational classes, work study and on-the-job training programs, and individualized vocational training, and cited a need for interagency cooperation. In terms of teacher education,
he suggested five methods of infusing education for special needs learners in the curriculum:

1. team teaching
2. guest lectures
3. use of modules
4. requirement for enrollment in special education courses
5. development of interdisciplinary courses.

He called for the cooperation of all agencies included in teacher training. (Hull, 1977)

Based on these studies, it was noted that educational planning and practice should be based on an analysis of the needs of the individual handicapped learner. Identification of those learners who were handicapped and an assessment of their individual needs should precede instruction. Instruction should be structured to meet these individual needs and careful evaluation of the outcomes of the learning process was necessary throughout the educational process in order to manage it effectively.

After careful consideration, and upon the advice of Dr. James J. Buffer, a modified form of the clinical teaching model was adapted for this study. Based on this discussion and the use of this model in programs providing
industrial education activities for handicapped learners, the following descriptors were chosen to organize the teaching-learning process: Diagnosis, Prescription, Treatment, Nurture, and Evaluation.

The clinical teaching approach appeared to present some particular advantages for the present study in that, while it accommodates the continuous cyclical nature of learning, it provides a means of examining the parts of this process, and allows the specification of understandings, skills, and attitudes for each part. The steps in the model are described below.

**Diagnosis** consists of identification and categorization of handicapping conditions which affect learners. It also includes the process of measuring the extent or severity of those handicapping conditions as well as measurement or identification of other factors which affect the individual's learning style, interests, and aptitudes.

**Prescription** consists of procedures dealing with the selection and sequencing of educational activities used to achieve identified individual objectives. These activities include, but are not limited to, teacher strategies, materials, facility utilization, learner activities, and
assistance from resource personnel.

**Treatment** consists of the delivery of prescribed educational services and procedures in the classroom/laboratory setting. These services and procedures include teaching activities, learning experiences, and strategies which were prescribed to fulfill individual learning objectives.

**Nurture** consists of the management of a favorable learning environment over a sufficient amount of time to allow internalization and achievement of objectives. This management over time concept is considered to be a period during which the initial intervention (treatment) is complete and the environment is conducive to refinement of skills and internalization of knowledges and attitudes.

**Evaluation** consists of the assessment of changes in the learner, adequacy of the initial prescription, and effectiveness of the treatment and nurture period. It also includes assessment of teacher activities and provides feedback to involved persons. This evaluation leads quite easily into a new diagnosis and a repetition of the complete cycle with new objectives, etc.
Based on the adoption of this clinical-teaching model, it was decided to examine studies which utilized a competency based description of teacher activities for the education of handicapped learners.

**Identification of Competencies for Industrial Education of Handicapped Learners**

The following studies were reviewed because they included (used) a competency basis to describe education for industrial educators who were to work with handicapped learners. The competencies included in these studies were considered for inclusion in the initial listing of competencies for this study. Of the studies listed by Hull (1977); Kruppa and others, (1973), Albright and others, (1975) and Nielsen and others, (1975), were found to contain competencies for possible inclusion in this study. Bitter (1971) was concerned with special education for the EMR adolescent and did not include competencies for a specific group (i.e. emotionally disturbed and socially maladjusted) and did not include competencies specific to industrial education. Brolin and Thomas (1972) and Clark and Oliverson (1973) were not found to contain competencies which were appropriate for this study.
Besides those studies already mentioned, this investigator also identified the following studies which were reviewed as sources for the initial identification of competencies:

Brolin (1973)
Sheppard (1975)
Meers (1977)
Sipes (1975)
Williams (1977)
Seligman (1978)
Yung, Jennings, and Haynie (1979)
Andreyka (1976)
Brock (1978)
Krantz and Weatherman (1976)
Keene State College (1975)
Phelps (1976)

These lists of competencies were examined for possible inclusion in the initial identification of competencies for the present study. In the review of the developed lists of competencies, it was realized that some of these lists contained statements and items which were not appropriate for this study. It was decided to examine the content of
these instruments, and the methodology used to generate and validate the competencies rather than to analyze each competency individually. Accordingly, three general criteria were used to determine the appropriateness of the lists of competencies. These, along with specific questions about each are listed below. Under the first criterion (Appropriateness of list for the clinical teaching model), the following questions were considered:

1. Are the items (competencies) behavioral in nature?

2. Do the items clearly fit into a part of the clinical teaching model as identified for this study (Diagnosis, Prescription, Treatment, Nurture, Evaluation)?

3. Are the items competencies or are they tasks or operations?

4. Are items included for all parts of the model?

5. Are the items specific for the education of the handicapped?

Under the second criterion (Research procedure utilized to generate initial list), the following questions were considered:
1. Is this list based on a review of appropriate literature, or other suitable knowledge base?

2. Is this list based on other lists, if so, do they meet the overall criteria?

3. Are the competencies organized in a manner such that they represent any teaching model or theoretical referent?

Under the third criterion (Nature of expert review or evaluation), the following questions were considered:

1. Were the competencies reviewed by "experts," if so, how were they selected?

2. Were the "experts" knowledgeable about industrial education and/or special education at the teacher education level?

3. Were the competencies reviewed or evaluated by practitioners?

4. Were the practitioners asked to describe their needs based on their experience or were they asked for their opinion of what should be?

5. Was there any validation on a wider than local scale (state, national)?
Each of the studies listed above was examined with reference to these questions. A discussion of each is included below.

Kruppa, Hritz and Thrower developed a master list of competencies for an undergraduate specialization in industrial education and special education in 1973. This specialization was designed to provide dual major graduates who would work with non-handicapped and special needs students at the secondary school level. The competencies which were developed were designed to describe the overall functioning of the graduate in the dual role of industrial educator and special educator. It has since formed the basis of a curricular option for industrial teacher education at Trenton State College in New Jersey.

While these statements were behavioral in nature, they also contained many operations and tasks. Many of the items, by design of the study, were not specifically representative of competencies needed for the education of handicapped learners and could not be categorized under the clinical teaching format of this study.
While the items were organized by means of the guidelines of the National Association of State Directors of Teacher Education and Certification, the organizational system was not considered useful for the present study because of its wide scope. There was no review procedure listed for validation of the completed list although personnel knowledgeable about industrial and special education were utilized in the initial generation phase. There was no evaluation or review by practitioners although their input was solicited in the initial generation phase by means of invitational regional meetings in New Jersey.

Based on the above analysis, the competencies generated in the study were not considered appropriate for inclusion in the present study.

Albright, Nichols, and Pinchak (1975) conducted a study to generate professional competencies for teachers of disadvantaged and handicapped students. The list of competencies was sent to the total population of vocational teachers working with OWA, OWE, and special needs groups in Ohio. Based on an analysis of the reported importance and frequency of the competencies, the resulting list of 112 competencies was judged by the authors to be of considerable
importance.

The competencies appeared to be appropriate for use in the present study in that they are behavioral in nature and may be ordered to fit the clinical teaching model. While not all competencies identified by this study were exclusively descriptive of procedures used for education of the handicapped, most were. The competencies were organized under the following headings: Program Management, Curriculum, Classroom Management, Coordination, Remediation, and Counseling. The initial list of competencies was generated by a process involving consultants and committees and these competencies were validated by teachers, local supervisors, and teacher educators. The evaluation was done in an empirical manner and the total population of practitioners of the OWE, OWA, and special needs teachers in Ohio were involved.

Based on this review of the study, it was decided to include the identified competencies in the initial stage of the present study.

In 1976, Nielson, Johnson, and Frank conducted a study to investigate teacher competencies for teachers of EMR (Educable Mentally Retarded) handicapped learners. The
items were described as "competency/task/attitude" and were for the most part behavioral in nature. Many of the items were not competencies but involved the development of attitudes or the performance of a task or operation. While most aspects of the clinical teaching model were represented in some form, diagnosis was not. Most of the items were specifically descriptive of education of the handicapped, although they were primarily limited to the teaching of EMR students.

In their description of the procedure used to generate the project, the authors referred to an applied research procedure involving expert opinion, theory, and teachers' experience. They also described an overall evaluation model for the final implementation in school systems of the developed curriculum products of this project. In terms of the competency identification phase, the instrument was sent only to teachers directly involved in the project. The items were not organized in any theoretical framework or model. While the evaluation was done in an empirical manner, it was used as a pre- and post-test for workshop participants and did not include outside evaluation.

Based on the above analysis, the competencies found by Nielson, Johnson, and Frank were judged not appropriate
for inclusion in the initial identification stage of the present study.

In 1978, the Department of Counseling and Personnel Services of the University of Missouri-Columbia conducted a study of a competency-based approach to Career Education (Brolin, 1978). The missions of the study were to design and develop an in-service staff development model, develop appropriate teacher materials and experiences to train school personnel, and to disseminate the resulting program. This study was based on a theoretical model of three domains: daily living skills, personal-social skills, and occupational guidance and preparation. Twenty-two learner competencies were identified and these were further broken down into 102 sub-competencies.

Of the initial twenty-two competencies, five were concerned with Occupational Guidance and Preparation. Each of the competencies listed (except no. 21: obtaining a specific occupational skill) provides sub-competencies which further detail the learning outcomes.

While this work is based on competencies, they are generalized and not appropriate for the present study.
revealed that they were not suitable for the clinical teaching model except as learning goals or outcomes for the student. There was no description of an empirical validation, nor was the initial selection process for the competencies described. Because of this analysis, and because there were no competencies listed for some parts of the clinical teaching model, the competencies in this study were not included in the initial selection process for competencies in the present study.

In 1975, Sheppard conducted a study to identify problems encountered and competencies needed by industrial educators in Virginia. He noted that because there were no certification requirements for teaching the handicapped in vocational-technical programs, many teachers were unprepared for the handicapped learner in their classes.

He sent a questionnaire to 108 industrial education personnel who were selected as EPDA (Educational Professional Development Act) awardees. The instrument was pilot tested with graduate students for ambiguity. His results indicated that all 16 competencies listed were rated as important or very important.
His recommendations included the initiation of in-service programs and change in pre-service teacher education to include experiences which would build the skill of industrial educators in the teaching of handicapped and disadvantaged learners.

While the competencies identified in this study appeared to be behavioral in nature and could fit fairly well into the clinical teaching model, this list of competencies did not meet the conditions of criteria 2, in that there was no evidence of the use of research procedures to generate the competencies and they do not appear to fit any theoretical teaching model. While the competencies were reviewed by practitioners, and an assumption of the study was that needs were to be described in terms of experience, the validation sample was the population of an EPDA project and were members of a special course. Because this competency list did not meet the criteria for inclusion in the initial selection of the present study, these competencies were not used.

Meers (1977) developed a list of competencies for special vocational needs personnel. These competencies met the requirements of criterion 1, in that they were
appropriate for the clinical teaching model and were behavioral competencies. However, this list of competencies provided no information regarding the nature of the process used to generate the initial list and no information regarding validation or review by experts or practitioners. Therefore, these competencies were not considered appropriate for inclusion in the initial identification of competencies for the present study.

Sipes (1975) conducted a study to identify the importance as perceived by undergraduate teacher education majors. He asked his respondents to rate 80 competencies on their perceived importance. The competencies were behavioral in nature and were suitable for the clinical teaching model. Most of the items described educational processes for special needs students. These competencies were not evaluated by actual practitioners based on experience, but were based on the competencies developed by Meers and published in 1977. The competencies were reviewed by members of one industrial education program. Because the competencies were not reviewed by practicing teachers of the handicapped and because the initial selection process was not based on identified procedures,
this list was not included in the initial selection of
competencies for the present study.

In 1977, Williams identified competencies
appropriate for the teacher education of four specific
groups of educators:

1. Elementary school teachers (43)
2. Secondary school special educators (23)
3. Industrial educators (38), and

Competencies were initially identified by an examination of
the literature and input from faculty members at Central
Connecticut State College. The competencies were
behavioral in nature and were judged to fit adequately
into the clinical teaching model. The items represented
all phases of the model and were specific for education
of the handicapped. The 38 competencies listed for
industrial education were examined for inclusion in the
initial identification phase of the present study. The
competencies appeared to fulfill the conditions of the
second criterion dealing with use of research procedures
to generate the initial list. A review of the literature
was undertaken to provide additional background knowledge.
The competencies were evaluated by practitioners on a state-wide basis and the evaluation was conducted in an empirical manner. Williams suggested that one of the thirty-eight competencies was not as useful as the others because of a low validation (3.5 on a 5.0 scale), but it was decided to include it in the present study at the initial selection level.

In 1978, Seligman identified competencies needed by industrial arts teachers for teaching special education students. These competencies were behavioral in nature and fit into the clinical teaching model. There were items for all parts of the model and the items were specific for the education of the handicapped.

The procedure used to generate the initial competencies was judged to meet the conditions for the second criterion dealing with use of research procedures. The selection was based on appropriate literature and the competencies represent a teaching model based on twelve areas:

1. Factual material about special needs students
2. Definition of instructional goals and objectives
3. Development and planning of instructional programs

4. Management of the classroom

5. Description and assessment of student behavior

6. Evaluation of the instructional process

7. Counseling students

8. Communication with parents

9. Communication with other professionals

10. Maintenance of a professional role

11. Implementation of instructional programs

12. Program administration

The competencies were reviewed by teacher education experts who were knowledgeable about special and industrial education. They represented teacher educators in the profession, not merely members of the faculty at the institution where the study was conducted. The evaluation of the competencies was conducted with past graduates of the program and the results were empirically analyzed.

Based on the above analysis, the competencies developed in this study were included in the initial selection of competencies for the present study.
Yung, Jennings, and Haynie (1979) undertook a project at the University of Arkansas at Pine Bluff to provide education for industrial educators of special needs students. The project was a three phase approach which was to assess needs, develop curriculum, and deliver materials to educators in the state. The authors reviewed the literature and sought expert advice from teacher educators at the University of Pennsylvania and the University of Arkansas. Based on these activities, they developed a list of forty-two competencies. These in turn were tested with a stratified sample of vocational teachers and administrators. Findings included an indicated need for in-service training as well as indications that it was not provided sufficiently at that time. The selection of 42 competencies was validated in that most were rated as "important" or "very important." Based on the results of the questionnaire, 18 objectives for the curriculum development phase were identified. The conclusions of the study included:

1. One-fifth to one-third of vocational students need special services;
2. Most administrators are aware of the need for in-service programs in this area.

3. Tasks which are important should be used in in-service training programs as should those in which teachers indicated a low level of confidence.

Based on a review of the work of Yung, Jennings, and Haynie (1979), their study was found to meet all the conditions of all three criteria. The competencies, although organized around a teaching model with different descriptions (needs assessment, planning, instruction and evaluation), are competencies which lend themselves to use within the clinical teaching model. Furthermore, the range of competencies was broad enough to include activities for each part of the clinical teaching model. This list was based on a review of the literature and other lists of competencies, most of which have been reviewed in the present study. Consultation was also sought from faculty members of two universities and a state department of education. The validation was empirical in nature and conducted state-wide in Arkansas. Practitioners were asked to rate the importance and their confidence (present ability) for each competency.
Based on this review of the study and the fulfillment of the criteria for inclusion in the present study, this list of competencies was included in the initial competency selection.

In 1976 Andreyka surveyed professional competencies and assessment criteria for vocational program personnel in Florida. The personnel surveyed included selected vocational teachers, administrators, and county vocational directors. While his list of competencies included 90 items, some were operations and tasks. Only some of the items were judged to be unique to the education of the handicapped; many appeared to be general teacher competencies. The items on the instrument were not grouped around any teaching model, however, the items were grouped for the later development of assessment criteria. The items were organized or grouped into categories such as "A": Program Planning, Development, and Evaluation" (Andreyka, 1976, p. 50), however other categories were identified as "Teaching Methods - Media" (p. 52), "Student Evaluation" (p. 57), and "Management" (p. 57). Other categories included Guidance, School Community Relations, and Student Organization. Many
items on the list did not appear to be suitable for use in the clinical teaching model and few items described practices involved in diagnosis, prescription, or evaluation.

Based on the above review, this list of competencies was not included in the initial competency selection for this study.

In 1978 Brock described the vocational segment of the Special Education program at the University of Wisconsin - Stout. This program description was based on 17 competencies for the overall teacher education program. The 17 competencies were based on the results of a study conducted in 1975. The initial study contained 31 competencies under teacher education (Brock, 1975). The 1975 study contained competencies which were not described in behavioral terms. They specified student outcomes and were in the form of "The student must be provided with . . ." (Brock, 1975, p. 51). These competencies or outcomes did not fit the clinical teaching model and therefore were judged not appropriate for use in the initial identification of competencies for the present study. It should be noted that an empirical
validation of these competencies was made and that they were developed by experts with knowledge and expertise in special and vocational education at the teacher education level.

From these outcomes (Brock, 1975), the competencies for teacher education were developed in 1978. While these competencies (Brock, 1978) were detailed with student objectives as well as the means of delivery in various courses, they were not judged appropriate for the present study in that they did not fit the clinical teaching model. Therefore they were not included in the initial selection of competencies for the present study.

Krantz and Weatherman (1976) conducted a study to determine the competencies needed for individuals to be selected as coordinators of special needs programs for the State of Minnesota. One of the outcomes of this study was the generation of a list of 44 competencies for the coordinator's position. These competencies were initially identified by soliciting written statements from an expert jury. They were then refined and edited in a workshop session. The resulting competencies did not appear to be suitable for the clinical teaching
model utilized in the present study. The initial method of generation of competencies, i.e., solicitation of statements describing the role of a coordinator's position, did not meet the requirements of criterion 2. The developed competencies did not fit any teaching model. The evaluation procedure used incumbent coordinators and was empirical in nature, but was not suitable for the evaluation criterion for the present study. Based on this review, the competencies generated by Krantz and Weatherman (1976) were not used for the initial selection of competencies for the present study.

Phelps (1976) conducted a study to develop a competency based program to provide in-service education for secondary school personnel serving special needs students. The list of competencies which was developed was initially generated by an examination of professional literature as well as recently completed research reports. The competencies were reviewed by experts selected on a basis of experience in vocational education for special education students. The actual development of the list was preceded by a needs assessment and occupational analysis (vocational educator). The evaluation procedure
for the resultant competencies included the initial panel of experts, field testing by practitioners and local administrators. They were then reviewed by teacher educators and secondary school personnel including local program directors.

The competencies themselves were found to fit the clinical teaching model and to be behavioral in nature. There are items for all parts of the model and the items are specific for the education of the handicapped. Based on this review the competencies were judged suitable for inclusion in the initial identification phase of this study.

In 1975 a study was conducted to provide a staff development program for the State of New Hampshire (Keene State College, 1975). One of the inputs to the information collecting phase of this project included the development of a list of competencies for the education of handicapped students. These competencies were based on a review which included the work of Brolin and Thomas (1972), Hull and Hollaran (1974) and Kruppa, et al., (1973). There was no separate expert review phase in this project.
The list of competencies developed in the Keene State College report were applicable to the education of handicapped learners. Many, however, were not behavioral in nature and were based on the respondent's reporting his knowledge of or about the item and his perception of its importance. The items did not clearly fit into the clinical teaching model. Based on the above review, the competencies developed by Keene State College (1975) did not appear to be suitable for the initial competency selection in the present study.

Summary

This chapter has provided a selected review of the literature pertaining to industrial education for handicapped learners. Legal requirements, at the national level as well as at the state level in Maine, have been reviewed. Studies which describe the need for pre- and in-service training for industrial educators in numerous states have been reviewed. Overall considerations for the inclusion of special needs students in on-going programs have been reviewed as well as studies which advocate specific lists of competencies for industrial educators who teach handicapped learners.
The clinical teaching approach was selected as a model for organization of the competencies for this study. The parts of the model, as described, have been separately supported by the studies reviewed. Another result of this review was the selection of five lists of competencies which formed the list of initial competencies for this study.

The process of development, refinement, and final selection of competencies for this study will be explained in Chapter III, the Procedure of the Study.
CHAPTER III

PROCEDURE

Introduction

Chapter III describes the procedures used to conduct this study. It includes the procedures used in the selection of competencies, their assessment and validation, and the final verification procedure used for the competencies in Maine.

This chapter describes the steps used in the examination of the literature, selection of competencies, and verification of them in Maine. The selection and organization of the population to be surveyed is discussed and Chapter III also describes some of the guidelines used to formulate the objectives for the curriculum materials developed in Chapter IV.

While Chapter IV contains the presentation of the data from the assessment in Maine and its detailed analysis, some information about this assessment is presented in Chapter III.
Identification of the Problem

The initial step in a study of this nature was to identify the problem or topic area. In the case of this study the topic or problem area was suggested by the concern at all levels; local, state and national, for the ability of industrial educators to provide education for handicapped or special needs learners. A description of this background information was included in Chapter I.

Once the problem area or topic was identified, the next step was to define the problem so that it could be stated in succinct terms. Also at this time it was necessary to examine the resources available to determine the feasibility of possible solutions.

In the case of the present study, it was determined that a need for education, both at the pre-service and at the in-service levels existed for industrial educators in the State of Maine. This determination was reinforced by discussions with teacher educators, local administrators and teachers, and state department personnel. It was further reinforced in current state department reports and literature. Some of these were cited in Chapters I and II.
After the topic area, problem, and feasibility of
the study were established, an extensive review of
pertinent literature was completed to determine what
had been done in similar situations in other locations.

Examination of the Literature

The examination of the literature was begun in Maine
and included customary library methods as well as
computer searches of various data bases. The initial
computer search was done through the library of the
University of Southern Maine and utilized the Dialog
Service of the Lockheed Missiles and Space Company, Inc.
in Palo Alto, California, via a telecommunication
terminal.

The initial searches sought information about teacher
attitudes as well as industrial education and handicapped
and/or disadvantaged learners. The following data bases
were reviewed through this means:

Comprehensive Dissertation Abstracts (Xerox
University Microfilms, Ann Arbor, MI.)
Exceptional Child Education Resources
(Council for Exceptional Children, Reston, VA.)

Note: ECER is a valuable supplement to Educational Resources Information Center data base (ERIC) since only about one-fourth of the ECER citations are duplicated in ERIC.
(Dialog, May 1978, p. 18)

Educational Resources Information Center
(National Institute of Education, Washington, D. C. and ERIC Processing and Reference Facility, Bethesda, MD.)

Psychological Abstracts (American Psychological Association, Washington, D. C.)

Social Scisearch (The Institute for Scientific Information, Philadelphia, PA.)

AIM/ARM (Sept. 1967-76) (The Center for Vocational Education, The Ohio State University, Columbus, OH.)

Based on the results of this preliminary review and manual searches at libraries in Maine and at The Ohio State University, the review was expanded to include competencies necessary for teacher education for industrial educators who worked with handicapped learners. Accordingly, two retrospective searches and an on-going current awareness search were initiated through the Mechanized Information Center at The Ohio State University.

When it was found that some AIM/ARM and Vocational
Technical (VT) listings were unavailable through the Education Library, permission was sought and obtained to utilize the resources of the National Center for Research in Vocational and Technical Education at The Ohio State University for additional review of these materials.

As a result of this search of the literature, a listing of fifteen separate sets of competencies was compiled for use in developing the initial list of competencies for this study. These studies were examined and evaluated for suitability for use in this study. The review was based on the criteria listed in Chapter II and the results are reported there.

The criteria included consideration of appropriateness of items of the list for the clinical teaching model, research procedures used to generate the list of competencies, and the nature of expert review or evaluation.

Under the first criterion, (Appropriateness of list for the clinical teaching model), the following questions were considered:

1. Are the items (competencies) behavioral in nature?
2. Do the items clearly fit into a part of the clinical teaching model as identified for this study (Diagnosis, Prescription, Treatment, Nurture, Evaluation)?

3. Are the items competencies or are they tasks or operations?

4. Are items included for all parts of the model?

5. Are the items specific for the education of the handicapped?

Under the second criterion, (Research procedure utilized to generate initial list), the following questions were considered:

1. Is this list based on a review of appropriate literature, or other suitable knowledge base?

2. Is this list based on other lists, if so, do they meet the overall criteria?

3. Are the competencies organized in a manner such that they represent any teaching model or theoretical referent?

Under the third criterion, (Nature of expert review or evaluation), the following questions were considered:

1. Were the competencies reviewed by "experts", if so, how were they selected?

2. Were the "experts" knowledgable about industrial education and/or special education at the teacher education level?
3. Were the competencies reviewed or evaluated by practitioners?

4. Were the practitioners asked to describe their needs based on their experience or were they asked for their opinion of what should be?

5. Was there any validation on a wider than local scale (state, national)?

6. Was the evaluation conducted in an empirical manner?

The studies utilized in the generation of the initial list of competencies for this study are listed in Table I:

<table>
<thead>
<tr>
<th>Author</th>
<th>No. of Competencies</th>
</tr>
</thead>
<tbody>
<tr>
<td>Phelps (1976)</td>
<td>31</td>
</tr>
<tr>
<td>Seligman (1978)</td>
<td>60</td>
</tr>
<tr>
<td>Albright, et al. (1975)</td>
<td>112</td>
</tr>
<tr>
<td>Williams (1977)</td>
<td>38</td>
</tr>
<tr>
<td>Yung, et al. (1979)</td>
<td>42</td>
</tr>
</tbody>
</table>
These competencies were individually reviewed and tentatively ordered in one of these six categories: Diagnosis, Prescription, Treatment, Nurture, Evaluation, and Other.

Development of an Assessment Instrument

An instrument was generated by using all the competencies from the five studies listed above. The competencies were ordered by categories in the above order to provide insight for reviewing each category for inclusiveness.

Table 2 illustrates the relative number of competencies from each study for each part of the clinical teaching model.
### TABLE 2

**Studies and Number of Competencies for Each Part of the Clinical Teaching Model**

<table>
<thead>
<tr>
<th>Study</th>
<th>Diagnosis</th>
<th>Prescription</th>
<th>Treatment</th>
<th>Nurture</th>
<th>Evaluation</th>
<th>Other</th>
</tr>
</thead>
<tbody>
<tr>
<td>Phelps (1976)</td>
<td>2</td>
<td>7</td>
<td>7</td>
<td>3</td>
<td>3</td>
<td>9</td>
</tr>
<tr>
<td>Seligman (1978)</td>
<td>4</td>
<td>13</td>
<td>8</td>
<td>21</td>
<td>5</td>
<td>9</td>
</tr>
<tr>
<td>Albright, et al. (1975)</td>
<td>13</td>
<td>14</td>
<td>18</td>
<td>19</td>
<td>14</td>
<td>34</td>
</tr>
<tr>
<td>Williams (1977)</td>
<td>2</td>
<td>10</td>
<td>8</td>
<td>5</td>
<td>3</td>
<td>10</td>
</tr>
<tr>
<td>Yung, et al. (1979)</td>
<td>3</td>
<td>11</td>
<td>8</td>
<td>9</td>
<td>6</td>
<td>5</td>
</tr>
<tr>
<td>Total</td>
<td>24</td>
<td>55</td>
<td>49</td>
<td>57</td>
<td>31</td>
<td>67 (283)</td>
</tr>
</tbody>
</table>
A copy of the Initial Competency Selection Instrument is located in Appendix A of this Document. This instrument was distributed to a panel of identified experts with experience in industrial education and special education. These experts were asked to:

1. Rate each competency regarding its value for teacher education of industrial educators of handicapped learners.

2. If item does not appear to be categorized correctly, please note that on copy.

3. If there are any competencies which are missing, please note that on copy.

Each of the respondents was personally contacted by this investigator and these instructions were also given orally. The experts included in this phase of the study included members of an ad hoc committee established by The Ohio Industrial Arts Association with the help of Dr. James J. Buffer. The individuals who participated in this review were:

Ms. Karen Carson, Franklin County Program for the Mentally Retarded

Mr. Lawrence Dennis, National Center for Research in Vocational and Technical Education.

Dr. Michael L. Scott, Ohio State Department of Education
Mr. Robert T. Krisco, Ohio State School for the Deaf

Mr. Christopher Wanner, Ohio State School for the Blind

Mr. Frank New, Ohio State Department of Education

These reviewers were given the questionnaire after initial contact either by telephone or in person. The reviewers were to:

1. Evaluate each competency item regarding its perceived value for the preparation of industrial education personnel to work with handicapped learners. Use the descriptors: "Essential", "Nice to Know", or "Not Needed".

2. If an item is not categorized correctly with reference to the procedures of the clinical teaching model, note that in the left hand margin and indicate where it should be categorized.

3. If any competencies were omitted, please write them in at the bottom of the page(s).

The results of their written review are presented on the copy in Appendix A and include comments and additions at the end of the instrument. A meeting was arranged on 29 October, 1979, during which this instrument and its evaluation were discussed. The results of this meeting and the evaluation of the instrument were compiled into the second edition of the instrument or "Selected Competencies for the Industrial Education of
Handicapped Learners". A copy of this revised instrument is included in Appendix B of this document.

The overall number of competencies was reduced to 159 by eliminating duplications. As a result of this procedure, the number of items listed as "Other" was reduced by more accurate assignment of these competencies to alternate categories. The distribution of competencies for the "Selected Competencies for the Industrial Education of Handicapped Learners" is included in Table 3.

**TABLE 3**

Number of Competencies in Each Category of the Clinical Teaching Model for the "Selected Competencies for the Industrial Education of Handicapped Students" Instrument

<table>
<thead>
<tr>
<th>Category</th>
<th>Number of Competencies</th>
</tr>
</thead>
<tbody>
<tr>
<td>Diagnosis</td>
<td>15</td>
</tr>
<tr>
<td>Prescription</td>
<td>37</td>
</tr>
<tr>
<td>Treatment</td>
<td>29</td>
</tr>
<tr>
<td>Nurture</td>
<td>39</td>
</tr>
<tr>
<td>Evaluation</td>
<td>10</td>
</tr>
<tr>
<td>Other</td>
<td>29</td>
</tr>
<tr>
<td>Total</td>
<td>159</td>
</tr>
</tbody>
</table>
The "Selected Competencies for the Industrial Education of Handicapped Learners" instrument was reviewed by each member of the advisory committee for this study. This investigator met with each member of his graduate committee individually to discuss and edit the list of competencies. The list of competencies after revision was submitted to The Ohio State University Research on Human Subjects Committee. The Protocol Document and the List of Competencies submitted to this committee is included in Appendix C. The final questionnaire developed for distribution to educational personnel.

It should be noted that the questionnaire presented in Appendix D is in the final format as it was mailed to industrial educators, administrators, and personnel involved in programs dealing with handicapped individuals and programs for the disadvantaged in Maine.

Preparation of the final camera-ready copy and the actual printing of this questionnaire and accompanying cover letter were done professionally by the Pilot Press, Inc., of South Portland, Maine.

An analysis of the final form of the questionnaire showed that the overall number of competencies remained
about the same as in earlier editions while the number of competencies classified as "Other" was greatly reduced. The distribution of competencies in the various categories for the final edition, "Competencies for Industrial Education Teachers of Handicapped Learners", is shown in Table 4.

**TABLE 4**

_Distribution of Competencies by Category of "Competencies for Industrial Education Teachers of Handicapped Learners" Instrument_

<table>
<thead>
<tr>
<th>Category</th>
<th>Number of Competencies</th>
</tr>
</thead>
<tbody>
<tr>
<td>Diagnosis</td>
<td>19</td>
</tr>
<tr>
<td>Prescription</td>
<td>42</td>
</tr>
<tr>
<td>Treatment</td>
<td>28</td>
</tr>
<tr>
<td>Nurture</td>
<td>34</td>
</tr>
<tr>
<td>Evaluation and Dissemination</td>
<td>19</td>
</tr>
<tr>
<td>Other</td>
<td>5</td>
</tr>
<tr>
<td>Total</td>
<td>147</td>
</tr>
</tbody>
</table>
Procedure for Data Collection

The questionnaire was mailed to the total population of Industrial Arts teachers and Trade and Industry instructors in the State of Maine. These were identified with the help of the Maine State Department of Education and Cultural Services and Mr. Thomas Birmingham, Consultant for Industrial Arts Education. Besides the Industrial Arts and Trade and Industry teachers, the questionnaire was sent to the principal of each public or private school (secondary, middle, or junior high school) building where these teachers were teaching, and to the twenty-three identified Vocational Region or Vocational Center Directors in the State of Maine. Also included in the population were those individuals identified by the Maine State Department of Education and Cultural Services as teachers and administrative personnel involved in Programs for the Handicapped or in Programs for the Disadvantaged. The following table lists the numbers of individuals in each category:
TABLE 5

Number and Categories of Educational Personnel in Maine Involved in This Study

<table>
<thead>
<tr>
<th>Personnel Categories</th>
<th>Number</th>
</tr>
</thead>
<tbody>
<tr>
<td>Industrial Arts Teachers</td>
<td>388</td>
</tr>
<tr>
<td>Trade &amp; Industry Teachers</td>
<td>194</td>
</tr>
<tr>
<td>Vocational Region and Vocational Center Administrators</td>
<td>23</td>
</tr>
<tr>
<td>Building Principals</td>
<td>192</td>
</tr>
<tr>
<td>Personnel involved in Programs for the Handicapped</td>
<td>5</td>
</tr>
<tr>
<td>Personnel involved in Programs for the Disadvantaged</td>
<td>50</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>852</strong></td>
</tr>
</tbody>
</table>

It should be noted that there were some individuals identified as "principals" who were also identified as administrators involved with "Programs for the Handicapped" or with "Programs for the Disadvantaged". These individuals were listed under the "principals" heading. It should also be noted that some of the individuals listed under "Disadvantaged programs" were also listed under the title of "Handicapped". These individuals (2) were listed under "Disadvantaged" and not repeated for the "Handicapped". There were two
Industrial Arts Teachers/Trade and Industry Teachers who were listed under both headings, and they were sent only one questionnaire. One Industrial Arts Teacher was known to be in another position and no questionnaire was sent to him.

Each of the persons selected for inclusion in the population was sent a questionnaire, cover letter, and a franked return envelope. Each individual questionnaire was identified with a control number for follow-up purposes.

The control number was determined by assigning the digits according to area of the state, primary role identification, and individual serial number in the population. The following chart (Figure I) was developed to illustrate this numbering system.

<table>
<thead>
<tr>
<th>Digit</th>
<th>Range</th>
<th>Meaning</th>
</tr>
</thead>
<tbody>
<tr>
<td>1,2</td>
<td>01-20</td>
<td>Region of the State of Maine in which the respondent was located</td>
</tr>
<tr>
<td>3</td>
<td>1-8</td>
<td>Type of program or role of respondent</td>
</tr>
<tr>
<td>4,5,6</td>
<td>001-852</td>
<td>Individual identification number for each respondent</td>
</tr>
</tbody>
</table>

**FIGURE I**
System for Assignment of Control Numbers to Individual Questionnaires
Some respondents were identified with more than one role or type of responsibility; their number was selected according to the following order:

1. Teacher
2. Administrator (Vocational Director)
3. Administrator (individual school)
4. Disadvantaged Program Affiliation
5. Handicapped Program Affiliation

Each respondent was assigned only one number describing his role or responsibility. These numbers are listed below:

Regions of the State of Maine (01-20):

01. Northern Aroostock County
02. Southern Aroostock County
03. Northern Penobscot County
04. Southern Penobscot County
05. Hancock County
06. Washington County
07. Waldo County
08. Knox County
09. Northern Oxford County
10. Sagadahoc County
11. Southern Oxford County
12. Franklin County
13. Somerset County
14. Piscataquis County
15. Kennebec County
16. Lincoln County
17. Androscoggin County
18. Northern Cumberland County
19. Southern Cumberland County
20. York County

The type of program or role of the respondent was numbered according to the following list:

1. Industrial Arts Teacher - Senior High School

2. Industrial Arts Teacher - Junior High School, Middle School, or Elementary School.

3. Trade and Industry Instructor

4. Vocational Administrator - Region or Vocational Center

5. High School Administrator - Principal

6. Junior High School, Middle School, or Elementary School Principal

7. Personnel associated with a program for Disadvantaged

8. Personnel associated with a program for Handicapped

An individual identification number was assigned to each respondent. 001-852 identified individuals as participants in the study, including personnel in all levels and roles.
A follow-up was conducted approximately two and a half weeks after the initial mailing. It was done by mail and included all the respondents who had not returned questionnaires. At the time of the first follow-up, 15.1% had returned questionnaires.

The rates of return for each of the identified types of programs or roles are listed in Chapter IV.

Data Analysis Procedure

The data obtained from the questionnaire were analyzed to determine the perceived importance of each item. The competencies were first individually analyzed according to the response of the total group. They were then analyzed by examining the perceived best time for this training. The results of these analyses are presented in Chapter IV.

The analysis was done with the aid of the computer services at the University of Southern Maine. The analysis procedure included use of the SPSS (Statistical Program for the Social Sciences) program and yielded the information presented in Chapter IV.
The competencies were then reorganized to include objectives and competencies suitable for teacher education activities. These objectives and competencies were then sent to joint members of the American Vocational Association and the American Industrial Arts Association Special Needs Committees. The results of this review are presented in detailed form in Chapter IV and in summary form in Chapter V.

Nature of the Population

The target population of the curriculum materials developed by this study was determined to be the industrial educators involved in industrial arts and trade and industry programs in the secondary schools of Maine. Since the individuals included in this population had various backgrounds, the demographic data gathered by this study are reported in Chapter IV.

The teachers in the study were employed by various local districts throughout the state and according to Maine law, have applied for and received at least a provisional certificate. A provisional certificate required the completion of at least 90 semester hours of academic work and involvement in continued course work in identified areas of teacher education.
Based on this analysis of the population, it was expected that all members of the population have some familiarity with teaching and learning methods (either by virtue of coursework taken or by practice on the job). It was also expected that these teachers have completed some formal instruction in curriculum development and utilization.

The following general guidelines were developed for use in selection of objectives for the curriculum materials for this study.

1. Is the objective necessary for or related to a competency or competencies identified by this study as "essential"?

2. Is the objective "feasible"? (Is it able to be achieved within the context of pre- or in-service education for industrial educators?)

3. Is the objective descriptive of an activity which is appropriate for industrial education or is it appropriate to education in general?

4. Is the objective suitable for use in customary industrial education teacher education? (Does the objective require the extensive use of knowledge, instruments, or materials not customarily used in industrial teacher education?)
Summary

Chapter III has presented the procedure used in this study. It has detailed the procedures used in the examination of the literature, tentative evaluation of competencies by experts, use of these competencies to determine needs of industrial educators in Maine and has described some of the guidelines to be used in the development of curriculum materials.

Chapter IV will further detail the analysis of the data obtained in the state-wide needs assessment and will present the developed curriculum materials and the results of their review.

Figure 2 illustrates the overall structure of this study. It should be noted that the researcher's graduate committee was active throughout the whole conduct of the study and is shown only at the steps of reviewing competencies for use in the needs assessment.
FIGURE 2
Structure of the Study
CHAPTER IV

PRESENTATION AND ANALYSIS OF COLLECTED DATA

Introduction

This chapter presents the data obtained in the study. It includes data from the questionnaire which was sent to different groups of educational personnel in Maine, as well as demographic data about these respondents.

This chapter also includes the results of the review by members of the national committees regarding special needs students established by the American Vocational Association (A.V.A.) and the American Industrial Arts Association (A.I.A.A.).

Data obtained from the survey in Maine are included in the first part of the chapter. A separate review of the developed objectives and competencies along with summary ratings are included in Chapter V.
Returns from the Survey in Maine

The questionnaire was initially sent to individuals identified on lists obtained from the State Department of Education and Cultural Services in Augusta, Maine. These lists identified all of the industrial arts and trade and industry teachers in the state, as listed by the State Department of Education and Cultural Services for the 1978-1979 academic year. The initial mailing also included vocational administrators and building principals for high schools and junior high schools with teachers in industrial arts and/or trade and industry programs. Also included in the initial mailing were those individuals in programs for handicapped and disadvantaged learners identified by the State Department of Education and Cultural Services.

The categories of participants, before any adjustment for duplication or other attrition factors included:

- Industrial Arts teachers (High School) 304
- Industrial Arts teachers (Junior High School) 90
- Trade and Industry teachers 194
- Vocational Administrators 23
Building Principals (High School) 127
Building Principals (Junior High School) 64
Personnel involved with Disadvantaged Learners 50
Personnel involved with Handicapped Learners 5
Total 857

Elimination of Duplication

Before mailing instruments to the groups of individuals listed above, some known duplications were removed and one individual known to be otherwise employed was excluded. Four of these individuals were industrial arts teachers (one at the junior high school level and three at the senior high school level). One duplicate was an individual who was a vocational administrator and involved in a program for disadvantaged learners. This individual was listed with the vocational administrators.

As a result of the mailing and received returns, it was discovered that there were many other duplicates within the lists, particularly between the industrial arts teachers and the trade and industry teachers.

Initial returns and percentages were as listed in Table 6.
TABLE 6
Comparison of Sub-Groups and Return Rates from Initial Mailing

<table>
<thead>
<tr>
<th>Sub-group</th>
<th>Mailed</th>
<th>Received</th>
<th>Percent</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Industrial Arts Teachers (Senior High School)</td>
<td>304</td>
<td>50</td>
<td>16.4</td>
</tr>
<tr>
<td>2. Industrial Arts Teachers (Junior High School)</td>
<td>90</td>
<td>14</td>
<td>15.6</td>
</tr>
<tr>
<td>3. Trade and Industry Teachers</td>
<td>194</td>
<td>27</td>
<td>13.9</td>
</tr>
<tr>
<td>4. Vocational Administrators</td>
<td>23</td>
<td>6</td>
<td>26.1</td>
</tr>
<tr>
<td>5. Building Principals (Senior High School)</td>
<td>127</td>
<td>13</td>
<td>10.2</td>
</tr>
<tr>
<td>6. Building Principals (Junior High School)</td>
<td>64</td>
<td>4</td>
<td>6.3</td>
</tr>
<tr>
<td>7. Personnel involved with Disadvantaged Learners</td>
<td>50</td>
<td>13</td>
<td>26.0</td>
</tr>
<tr>
<td>8. Personnel involved with Handicapped Learners</td>
<td>5</td>
<td>2</td>
<td>40.0</td>
</tr>
</tbody>
</table>
Change in Listing of Personnel

It was decided to conduct a follow-up in order to increase the rate of return. When conducting the follow-up for the teachers (Industrial Arts and Trade & Industry), it was noted that revised lists were available from the Department of Educational and Cultural Services. The initial mailing had gone to teachers identified as the teachers of record for the 1978-1979 academic year. By the time of the follow-up, revised lists for the 1979-1980 academic year were available. These were used to conduct the follow-up after comparison with the original lists.

As a result of comparing the two lists of industrial arts teachers, it was found that 53 of the teachers listed in 1978-1979 were not listed for the 1979-1980 school year. Of these 53 teachers, 41 were teachers in senior high schools and 12 were in junior or middle schools. The net change in numbers of industrial arts teachers in the population for this study was only a loss of three because there were new listings. There was a total of 50 new listings, 41 at the senior high school level, and nine at the junior high school level or middle school level. Therefore the population of senior high school
teachers still contained 304, and the junior high school industrial arts teacher group contained 87; for a total loss of three teachers.

The "new" listings contained people new to teaching as well as teachers who had moved from one teaching position to another. These "new" listings were sent a copy of the instrument along with the original cover letter and a copy of "Just a Short Note". Examples of these materials are located in Appendixes D and E, along with the cover letter used for the follow-up of the original population.

The change of personnel resulted in the loss of two small (one or two-man) industrial arts programs within the state for the 1979-1980 academic year. The loss of these programs resulted in a decrease in the number of principals. Both of the affected programs were senior high programs, and the number of principals was then 125 at the senior high school level and remained 64 for the junior high school level.

When the two lists of trade and industry teachers were compared, it was found that 35 of the teachers listed in 1978-1979 were not listed in 1979-1980.
There were, however, 24 new listings for trade and industry teachers in 1979-1980. There was therefore a total net change of -11 trade and industry teachers.

The 24 "new" trade and industry teachers were individuals who were new to teaching and/or were relocating within the state. These new trade and industry teachers were sent a copy of the instrument, the original cover letter along with a copy of "Just a Short Note". Copies of these materials are located in Appendixes D and E.

There were no changes in the numbers of individuals involved in programs for the disadvantaged or handicapped as a result of the new lists. Therefore, at the time of the follow-up, the population contained the following:

<table>
<thead>
<tr>
<th>Role (Sub-group)</th>
<th>Number</th>
</tr>
</thead>
<tbody>
<tr>
<td>Industrial Arts Teachers (Senior High School)</td>
<td>304</td>
</tr>
<tr>
<td>Industrial Arts Teachers (Junior High School)</td>
<td>87</td>
</tr>
<tr>
<td>Trade and Industry Teachers</td>
<td>183</td>
</tr>
<tr>
<td>Vocational Administrators</td>
<td>23</td>
</tr>
<tr>
<td>Building Principals (Senior High School)</td>
<td>125</td>
</tr>
<tr>
<td>Building Principals (Junior High School)</td>
<td>64</td>
</tr>
</tbody>
</table>
Personnel involved with Disadvantaged Learners 50
Personnel involved with Handicapped Learners 5

Total 841

As a result of returns from the follow-up, the rate of participation increased, also the description of the sub-groups of the population became more accurate. By means of the reply card sent to all participants as a part of the follow-up materials (See Appendix E), the researcher was informed of additional duplication within and between the sub-groups. Other information came from notes and letters from respondents. The use of the postal reply card also provided for a respondent to refuse to participate and to state that intention.

Based on information received from the reply cards and comparison with the lists of the participants, it was found that the sub-groups contained additional duplications which are listed below

Industrial Arts Teachers (Senior High School) 15
Industrial Arts Teachers (Junior High School) 3
Trade and Industry Teachers 2
These duplications affected the total number of individuals in the sub-groups. It is possible that an individual is able to be a member of more than one role group in Maine. Some examples include a part-time vocational/industrial arts teacher who may teach half days in separate facilities. Another example may be an industrial arts teacher who is also a principal. For the purposes of this study, such duplication was eliminated. Each individual was assigned to only one role group. In cases of duplication, the order of assignment was as follows:

1. Industrial Arts Teacher - Senior High School
2. Industrial Arts Teacher - Junior High School
3. Trade and Industry Teacher
4. Vocational Director
5. Building Principal - Senior High School
6. Building Principal - Junior High School
7. Personnel involved with Disadvantaged Learners
8. Personnel involved with Handicapped Learners

It should be noted that in the last two categories, Personnel involved with Disadvantaged and Handicapped
Learners, there was considerable duplication. This duplication was partly between these groups themselves, and also with administrative categories such as vocational directors and principals. There was one duplication involving a vocational director and programs for handicapped learners. Another occurred between a principal and a person listed with a program for disadvantaged learners. These, in addition to duplication between listings of personnel involved with handicapped and disadvantaged learners resulted in the following numbers of members in each group:

7. Personnel involved with Disadvantaged Learners 50

8. Personnel involved with Handicapped Learners 3

The lists of individuals in categories of the subgroups were again adjusted based on the reported duplication. The final numbers in these groups and relative percentages of the total population are listed in Table 7.
TABLE 8

Number and Percent of Returns From Sub-groups in Maine
(Includes both usable and unusable returns)

<table>
<thead>
<tr>
<th>Sub-group</th>
<th>Total</th>
<th>Usable</th>
<th>Returns and Percents</th>
<th>Total</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Industrial Arts (Sr. High School)</td>
<td>289</td>
<td>110</td>
<td>38.1</td>
<td>125</td>
<td>43.3</td>
</tr>
<tr>
<td>2. Industrial Arts (Jr. High School)</td>
<td>84</td>
<td>35</td>
<td>41.7</td>
<td>38</td>
<td>45.2</td>
</tr>
<tr>
<td>3. Trade and Industry Teachers</td>
<td>181</td>
<td>61</td>
<td>33.7</td>
<td>70</td>
<td>38.7</td>
</tr>
<tr>
<td>4. Vocational Administrators</td>
<td>23</td>
<td>11</td>
<td>47.8</td>
<td>11</td>
<td>47.8</td>
</tr>
<tr>
<td>5. Building Principals (Sr. High School)</td>
<td>125</td>
<td>36</td>
<td>28.8</td>
<td>43</td>
<td>34.4</td>
</tr>
<tr>
<td>6. Building Principals (Jr. High School)</td>
<td>64</td>
<td>12</td>
<td>18.8</td>
<td>18</td>
<td>28.1</td>
</tr>
<tr>
<td>7. Personnel involved with Disadvantaged</td>
<td>50</td>
<td>21</td>
<td>42.0</td>
<td>25</td>
<td>50.0</td>
</tr>
<tr>
<td>8. Personnel involved with Handicapped</td>
<td>3</td>
<td>2</td>
<td>66.7</td>
<td>2</td>
<td>66.7</td>
</tr>
<tr>
<td>Totals</td>
<td>819</td>
<td>288</td>
<td>35.2</td>
<td>332</td>
<td>40.5</td>
</tr>
</tbody>
</table>

Note: Percentages are rounded to the nearest .1%
TABLE 7.
Final Number and Relative Percentage of Sub-groups in Total Population

<table>
<thead>
<tr>
<th>Sub-group</th>
<th>Number</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Industrial Arts Teachers (Senior High School)</td>
<td>289</td>
<td>35.3</td>
</tr>
<tr>
<td>2. Industrial Arts Teachers (Junior High School)</td>
<td>84</td>
<td>10.3</td>
</tr>
<tr>
<td>3. Trade and Industry Teachers</td>
<td>181</td>
<td>22.1</td>
</tr>
<tr>
<td>4. Vocational Administrators</td>
<td>23</td>
<td>2.8</td>
</tr>
<tr>
<td>5. Building Principals (Senior High Schools)</td>
<td>125</td>
<td>15.3</td>
</tr>
<tr>
<td>6. Building Principals (Junior High Schools)</td>
<td>64</td>
<td>7.8</td>
</tr>
<tr>
<td>7. Personnel involved with Disadvantaged Learners</td>
<td>50</td>
<td>6.1</td>
</tr>
<tr>
<td>8. Personnel involved with Handicapped Learners</td>
<td>3</td>
<td>0.3</td>
</tr>
<tr>
<td>Totals</td>
<td>819</td>
<td>100.0</td>
</tr>
</tbody>
</table>

Final Returns

After the follow-up was sent out and the returns received, a total of 332 responses were received. The distribution of these responses is reported in Table 8. It should be noted that the "new" members of each of the sub-groups were also sent a separate follow-up if they failed to respond to the initial appeal. Therefore, each
Individual included in the population was sent an initial appeal and a follow-up with return postage.

Follow-up of Non-Respondents

After consideration of the above return rates, it was decided to make another attempt to obtain information from those who chose not to respond in any way, either usable response or other. Accordingly, a systematic random sampling of the non-respondents from all categories was selected and a shorter (11 item) instrument was prepared and mailed. The instrument contained items from the original questionnaire (two from each of the categories): Diagnosis, Prescription, Treatment, Nurture, and Evaluation; plus one item from the Other category. The instrument also sought to obtain information as to why the individual chose not to respond to the original questionnaire. A copy of this follow-up instrument is located in Appendix G.

Of the 48 copies sent out, 20 (41.7%) were returned. There was no follow-up of this step of the study. A comparison of the results of this instrument is given after the presentation of the results of the original instrument. Besides the 11 items, the follow-up instrument contained the following question:
"If you chose not to respond, please check if any of the following were reasons for not filling out the original questionnaire:

( ) Questionnaire too long
( ) Questionnaire items too complicated
( ) Questionnaire asked wrong questions
( ) Topic not important
( ) Topic not appropriate in your situation
( ) Other responsibilities were pressing
( ) Other
( ) No reason

Some additional comments were received, among them statements to the effect that the original questionnaire had been returned. Since there was no control number on the "non-respondent" instrument, it was impossible to check for the return of the original. However, there was no return of the original questionnaire by those to whom a "non-respondent" instrument was sent. In other words, if the original questionnaire was returned, either it was not received by the researcher, or it was not returned with the correct control number (questionnaire sent to an individual was not returned by him/her). For a more detailed analysis of this step, a summary of the results is included in Appendix G.
Analysis of Background Information - Demographic Data

On the cover page of the instrument, the respondents were asked to answer several questions about their teaching experience, subject area, experience with disadvantaged and handicapped learners, and attained level of education. The information obtained about the respondents is presented in this section of the chapter, along with geographical information and other information about programs which was coded into the control number for each questionnaire. The information presented in this section is pertinent to the total population of respondents unless it is specified as being relevant to a group or part of that population.

Geographic Areas

The State of Maine was divided into twenty areas as explained in Chapter III. The number and percent of respondents from each area is listed below:

<table>
<thead>
<tr>
<th>Area</th>
<th>Number</th>
<th>Percent of the Total Population</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.</td>
<td>24</td>
<td>8.3</td>
</tr>
<tr>
<td>2.</td>
<td>4</td>
<td>1.4</td>
</tr>
<tr>
<td>3.</td>
<td>6</td>
<td>2.1</td>
</tr>
<tr>
<td>4.</td>
<td>27</td>
<td>9.4</td>
</tr>
<tr>
<td>5.</td>
<td>8</td>
<td>2.8</td>
</tr>
<tr>
<td>6.</td>
<td>10</td>
<td>3.5</td>
</tr>
<tr>
<td>7.</td>
<td>3</td>
<td>1.0</td>
</tr>
<tr>
<td>8.</td>
<td>3</td>
<td>1.0</td>
</tr>
<tr>
<td>9.</td>
<td>4</td>
<td>1.4</td>
</tr>
</tbody>
</table>
The range of respondents is 0 - 64 (0% - 22.2%).

While these data vary from area to area, this may be partly explained by differences in population density.

**Experience in Education (Teaching)**

The respondents from all groups were asked to supply the number of years of teaching experience as of June 1980. The reported number of years and percent of the population is shown in Table 9.

**TABLE 9**

<table>
<thead>
<tr>
<th>Years</th>
<th>Number Reporting</th>
<th>Percent of Total Respondents</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.</td>
<td>15</td>
<td>5.9</td>
</tr>
<tr>
<td>2.</td>
<td>13</td>
<td>5.1</td>
</tr>
<tr>
<td>3.</td>
<td>13</td>
<td>5.1</td>
</tr>
<tr>
<td>4.</td>
<td>16</td>
<td>6.3</td>
</tr>
<tr>
<td>5.</td>
<td>14</td>
<td>5.5</td>
</tr>
<tr>
<td>6.</td>
<td>12</td>
<td>4.7</td>
</tr>
<tr>
<td>7.</td>
<td>3</td>
<td>1.2</td>
</tr>
<tr>
<td>8.</td>
<td>10</td>
<td>4.0</td>
</tr>
</tbody>
</table>
Table 9 - Continued

|   |     |  
|---|-----|-----|
| 9 | 21  | 8.3 |
| 10| 18  | 7.1 |
| 11| 18  | 7.1 |
| 12| 7   | 2.8 |
| 13| 9   | 3.6 |
| 14| 8   | 3.2 |
| 15| 6   | 2.4 |
| 16| 6   | 2.4 |
| 17| 2   | 0.8 |
| 18| 7   | 2.8 |
| 19| 9   | 3.6 |
| 20| 7   | 2.8 |
| 21| 2   | 0.8 |
| 22| 6   | 2.4 |
| 23| 5   | 2.0 |
| 24| 4   | 1.6 |
| 25| 2   | 0.8 |
| 26| 3   | 1.2 |
| 27| 2   | 0.8 |
| 28| 6   | 2.4 |
| 29| 1   | 0.4 |
| 30| 2   | 0.8 |
| 31| 1   | 0.4 |
| 32| 2   | 0.8 |
| 33| 2   | 0.8 |
| 34| 0.4 |
| 35| 0.4 |
|   |     |
|   |     |
|   |     |
| No response | 35 |

Total | 288 | 100.3 |

Note: Total does not equal 100% because of round-off error.
While these data are widely distributed, it should be noted that administrators and building principals were included as well as teaching personnel. This may account for the relatively similar percentages throughout the range (1 - 41 years). It may also account for some of the missing responses for this item (35). The higher number of first through fifth year teachers may be due to personal acquaintance of the researcher with these individuals.

Level of Program

Information about the level of program can be obtained by examining the returns from different subgroups. The reported level of program was confused by the non-teaching personnel (administrators, those involved with handicapped and disadvantaged learners) and teaching personnel in areas other than industrial education. Table 10 shows the usable returns in different groups (at different levels).
<table>
<thead>
<tr>
<th>Sub-Group</th>
<th>Number Received</th>
<th>Total in Group</th>
<th>Percent Return in Group</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Industrial Arts</td>
<td>110</td>
<td>289</td>
<td>38.1</td>
</tr>
<tr>
<td>Senior High School</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2. Industrial Arts</td>
<td>35</td>
<td>84</td>
<td>41.7</td>
</tr>
<tr>
<td>Junior High School</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>3. Trade and Industry</td>
<td>61</td>
<td>181</td>
<td>33.7</td>
</tr>
<tr>
<td>4. Vocational Administrators *</td>
<td>11</td>
<td>23</td>
<td>47.8</td>
</tr>
<tr>
<td>(47)</td>
<td>(148)</td>
<td>(31.8)</td>
<td></td>
</tr>
<tr>
<td>5. Principals - Senior High *</td>
<td>36</td>
<td>125</td>
<td>28.8</td>
</tr>
<tr>
<td>6. Principals - Junior High</td>
<td>12</td>
<td>64</td>
<td>18.8</td>
</tr>
<tr>
<td>7. Teachers of Disadvantaged</td>
<td>21</td>
<td>50</td>
<td>42.0</td>
</tr>
<tr>
<td>8. Teachers of Handicapped</td>
<td>2</td>
<td>3</td>
<td>66.7</td>
</tr>
<tr>
<td>Total</td>
<td>288</td>
<td>819</td>
<td></td>
</tr>
</tbody>
</table>
It should be noted that the two categories marked by an asterisk (*), are considered as one group throughout most of the analysis. It was observed that both the Vocational Administrators and the High School principals were at the secondary level (Grades 8 - 12), and that there were relatively few vocational administrators (23). For that reason they were grouped with the principals of high schools for analysis of the competencies.

**Area of Technical Specialization**

Respondents were asked to indicate their area(s) of specialization and were provided the list of areas found in Table II. It should be noted that respondents in administrative roles were asked to fill out the same information, some did; however there were 35 missing responses.

There were 598 areas checked by the 253 respondents who answered this item. Table II gives the choice as printed on the instrument, the number of responses, and the percentage based on the 253 respondents to this item. "Other" included various areas which were written in by the respondents. The following are typical of responses
which were written in. The numbers after the items are the number of times that particular response was written in:

Welding (8)
Small Engines (9)
Administration (13)
Photography (6)
Leather (5)
Cooperative Education (5)

There were a large number of other responses which are not listed here because few respondents chose the same responses.
<table>
<thead>
<tr>
<th>Technical Area</th>
<th>Number</th>
<th>Percent of Population</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Automotives</td>
<td>64</td>
<td>25.3</td>
</tr>
<tr>
<td>2. Business</td>
<td>7</td>
<td>2.8</td>
</tr>
<tr>
<td>3. Construction</td>
<td>48</td>
<td>19.0</td>
</tr>
<tr>
<td>4. Culinary Arts</td>
<td>7</td>
<td>2.8</td>
</tr>
<tr>
<td>5. Distributive Ed.</td>
<td>3</td>
<td>1.2</td>
</tr>
<tr>
<td>6. Electrical</td>
<td>46</td>
<td>18.2</td>
</tr>
<tr>
<td>7. Electronics</td>
<td>17</td>
<td>6.7</td>
</tr>
<tr>
<td>8. Energy and Transportation</td>
<td>29</td>
<td>11.5</td>
</tr>
<tr>
<td>9. Fisheries</td>
<td>24</td>
<td>9.5</td>
</tr>
<tr>
<td>10. Forestry</td>
<td>1</td>
<td>0.4</td>
</tr>
<tr>
<td>11. General</td>
<td>46</td>
<td>18.2</td>
</tr>
<tr>
<td>12. Graphic Arts</td>
<td>1</td>
<td>0.4</td>
</tr>
<tr>
<td>14. Heating/AC/</td>
<td>0</td>
<td>0.0</td>
</tr>
<tr>
<td>15. Manufacturing</td>
<td>38</td>
<td>15.0</td>
</tr>
<tr>
<td>17. Metals</td>
<td>53</td>
<td>20.9</td>
</tr>
<tr>
<td>18. Plastics</td>
<td>14</td>
<td>5.5</td>
</tr>
<tr>
<td>19. Wood Harvesting</td>
<td>2</td>
<td>0.8</td>
</tr>
<tr>
<td>20. Woods</td>
<td>59</td>
<td>23.3</td>
</tr>
<tr>
<td>21. Other</td>
<td>53</td>
<td>20.9</td>
</tr>
</tbody>
</table>

Total: 598

Note: Percentages are based on the number of respondents (253).
Experience with Handicapped Students

Respondents were asked to indicate which (if any) type of experience they had with handicapped learners. The respondent was provided with a list which contained five categories. Table 12 shows the number and percent of respondents who indicated experiences with various handicapped conditions.

**TABLE 12**

<table>
<thead>
<tr>
<th>Categories</th>
<th>Number</th>
<th>Percent</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Mentally Retarded</td>
<td>118</td>
<td>48.8%</td>
</tr>
<tr>
<td>2. Neurologically Impaired</td>
<td>63</td>
<td>26.0%</td>
</tr>
<tr>
<td>3. Orthopedically Handicapped</td>
<td>16</td>
<td>6.6%</td>
</tr>
<tr>
<td>4. Sensory Impaired</td>
<td>18</td>
<td>7.4%</td>
</tr>
<tr>
<td>5. Other</td>
<td>27</td>
<td>11.2%</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td>242</td>
<td><strong>100.0%</strong></td>
</tr>
</tbody>
</table>

Some (46) respondents did not report any experience with any of these handicapping conditions. However, 153 respondents indicated experience with two of these conditions; and an additional 59 indicated that they had experience with three areas of impairment. Experience with four of these areas was indicated by 28 respondents.
"Other" areas of experience listed by respondents included the following:

- Emotional Disturbed (Behavior) 9 3.7%
- Slow Learners ("Remedials") 7 2.9%
- Learning Disabled 4 1.7%
- Lack of Reading Skills 2 0.8%

The numbers indicate the number of times these words were written. Responses to the other category also included, "Juvenile Offender", "From other Country", "epileptic", etc.

**Educational Level**

Respondents were asked to indicate the highest educational degree attained. They reported the following numbers. The number of responses was 236, missing responses were 52.

- Bachelor's 143 60.6%
- Master's 66 28.0%
- Post-Master's 27 11.4%

It should be noted that a degree is not essential for an individual to be fully certified and/or employed as a teacher in Maine. This is especially true in the case of the vocationally certified Trade and Industry Instructor.
Analysis of Competencies from Instrument

This part of the chapter presents the data obtained from educational personnel in Maine for each of the competencies on the instrument exhibited in Appendix D. Participants were asked to determine the appropriateness of the competencies for industrial education personnel. The choices, "Essential", "Nice to Know", and "Not Essential" indicated the importance of the competency as perceived by the respondent. It was decided to consider the categories "Nice to Know" and "Not Essential" as Non-Essential. Therefore in the analysis of importance, a competency was judged as being either "Essential" or "Non-Essential".

For ease of management, the competencies were examined in groups organized by the major functions of the clinical teaching model (Diagnosis, Prescription, Treatment, Nurture, and Evaluation) as described in Chapter III.

The criterion for acceptance of a competency as essential was set at 50%. This decision was consistent with the rationale provided by Gallagher (1976) when conducting related research. Since the purpose of this study was to identify competencies which will enable present and future industrial educators to teach those students identified as
handicapped, it was expected that at least 50% of those educational personnel evaluating each competency would rate it as essential. It should be noted that 96 out of 147 (or 65.3%) competencies were considered essential by the group as a whole.

After the competencies were examined for importance, those judged to be essential (as indicated by greater than 50% of the respondents rating them "Essential") were examined to determine the appropriate time for acquiring these skills (Pre-service, In-service, or Other). This analysis is presented after all groups of competencies are examined for importance.

The analysis of when the appropriate time for teachers to acquire these skills was based on three choices: Pre-service, In-service, and Other. The choice of "Other" presented some analysis difficulties unless it was accompanied by a comment which specified what "Other" was. Since this was not a common occurrence, it was not considered a viable choice. All comments from the questionnaire and those received separately are listed in Appendix J and K. Few gave any indication of when education should take place.
Analysis of Diagnosis Competencies

An overall table showing those role-groups who considered Diagnosis competencies essential is presented in Table 13. It should be noted that of the original 19 competencies listed under Diagnosis, 9 (47.4%) were considered essential by 50% or more of the respondents. These competencies were: No. 1, 2, 4, 6, 8, 9, 12, 13, and 15. The emphasis of the present study is on the determination of competencies for industrial education teachers. The industrial education teaching personnel were in agreement with the overall population for most of the competencies. Competencies number: 6, 8, and 13, however, showed differences between the senior high school industrial arts, junior high school industrial arts, and the trade and industry teachers. Number 6: "Develop a process and procedure for student selection" - was considered essential by the junior high industrial arts teachers and the trade and industry teachers, but only by 45.5% of the senior high school industrial arts teachers. There were some comments offered to the effect that teachers are not able to "select" students or that this is done by guidance, administrative personnel.
Competency 8: "Identify symptoms of drug abuse" - was considered essential by both junior high school and senior high school industrial arts teachers, but not by the trade and industry teachers.

Competency 13: "Utilize vocational evaluation systems and/or instruments which are appropriate for special needs learners" - was considered essential by junior high school industrial arts teachers and trade and industry instructors but not senior high school industrial arts teachers. It should be noted that all other groups found this competency essential.

While the emphasis of this study is on competencies for industrial education teachers, it should be noted that Competency 3: "Tentatively identify a student's preferred learning style" - was found to be essential by principals and others while teaching personnel rated it non-essential. Industrial arts teaching personnel did not consider Competency 7: "Assess student reading level" - essential while trade and industry teachers and others did consider it essential.
Competencies No. 10, 16, and 17, were considered essential by the trade and industry teachers but not the other industrial education teaching personnel or the population as a whole. Competencies 18 and 19 were not considered essential by any of the sub-groups or the total population.
TABLE 13

Number and Percent of Individuals in Sub-groups Who Rated Diagnosis Competencies Essential

<table>
<thead>
<tr>
<th>Competency</th>
<th>Overall</th>
<th>I.A. Teachers T. &amp; I. Principals</th>
<th>Personnel involved with Non-Response</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Number</td>
<td>Sr. HS</td>
<td>Jr. HS</td>
</tr>
<tr>
<td>1</td>
<td># 163</td>
<td>53</td>
<td>19</td>
</tr>
<tr>
<td></td>
<td>% 63.4</td>
<td>53.0</td>
<td>59.4</td>
</tr>
<tr>
<td>2</td>
<td># 198</td>
<td>64</td>
<td>26</td>
</tr>
<tr>
<td></td>
<td>% 75.6</td>
<td>63.4</td>
<td>78.8</td>
</tr>
<tr>
<td>3</td>
<td># 129</td>
<td>44</td>
<td>15</td>
</tr>
<tr>
<td></td>
<td>% 49.6</td>
<td>44.0</td>
<td>44.1</td>
</tr>
<tr>
<td>4</td>
<td># 205</td>
<td>68</td>
<td>28</td>
</tr>
<tr>
<td></td>
<td>% 78.2</td>
<td>66.7</td>
<td>87.3</td>
</tr>
<tr>
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* Indicates the competency is considered essential at the 50% level.
TABLE 13 - Continued

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*Indicates the competency is considered essential at the 50% level.
Analysis of Prescription Competencies

An overall table showing those role-groups which considered Prescription competencies essential is given in Table 14. It should be noted that 28 of the original 42 (66.7%) were considered essential by the overall group. These were the following competencies: No. 21, 22, 23, 24, 25, 26, 29, 30, 31, 33, 34, 40, 41, 42, 44, 45, 46, 47, 49, 50, 51, 52, 54, 55, 56, 57, 60, 61. It should be noted that the industrial education sub-groups differed in their ratings of these. For example, the trade and industry teachers differed from the industrial arts teachers in their rating of the following competencies: 22, 37, 38, 41, 42, 43, 45, and 51. The junior high school industrial arts teachers differed from the senior high school industrial arts teachers and the trade and industry teachers on the following competencies: 26, 52, 55, 56, and 57. The senior high school industrial arts teachers differed with the junior high school industrial arts teachers and the trade and industry teachers on the following competencies: 29, and 30.

It should be noted that the senior high school industrial arts teachers found competency 32 essential
while the other industrial education teachers and other personnel in the population did not. In similar fashion, junior high school industrial arts teachers found Competency 48 essential while other industrial education teachers and other personnel in the population did not. The trade and industry teachers found Competencies 38 and 43 essential while the remainder of the population did not.
# TABLE 14

**Number and Percent of Individuals in Sub-groups Who Rated Prescription Competencies Essential**

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<th>Competency</th>
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<th>Personnel Involved</th>
<th>Non-Response</th>
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* Indicates the competency is considered essential at the 50% level.
**TABLE 14 - Continued**

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* Indicates the competency is considered essential at the 50% level.
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* Indicates the competency is considered essential at the 50% level.
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</tr>
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<td>%</td>
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<td>78.8</td>
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<tr>
<td>%</td>
<td>46.8</td>
<td>39.4</td>
<td>44.1</td>
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<td>40.0</td>
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<td>71.9</td>
<td>86.0</td>
<td>71.1</td>
<td>80.0</td>
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<tr>
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<tr>
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<td>47.1</td>
<td>53.8</td>
<td>55.3</td>
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<tr>
<td>%</td>
<td>53.2</td>
<td>51.5</td>
<td>44.1</td>
<td>56.9</td>
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<tr>
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<td>51.2</td>
<td>53.6</td>
<td>36.4</td>
<td>52.9</td>
<td>53.8</td>
<td>55.6</td>
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<td>95</td>
<td>34</td>
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<td>16</td>
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</tr>
<tr>
<td>%</td>
<td>39.6</td>
<td>36.2</td>
<td>43.8</td>
<td>32.7</td>
<td>41.7</td>
<td>20.0</td>
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* Indicates the competency is considered essential at the 50% level.
TABLE 14 - Continued

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<th>Competency</th>
<th>Overall</th>
<th>I.A. Teachers</th>
<th>T. &amp; I. Principals</th>
<th>Personnel Involved</th>
<th>Non-Response</th>
</tr>
</thead>
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<td>Sr. HS</td>
<td>Jr. HS</td>
<td>with</td>
</tr>
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<td># 89</td>
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<td>13 2 10</td>
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<td>37.1 20.0</td>
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<td># 136</td>
<td>44 16 30</td>
<td>28 5 12</td>
<td>1</td>
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<tr>
<td></td>
<td>% 54.2</td>
<td>45.8 47.1 57.7</td>
<td>71.8 50.0</td>
<td>66.7 50.0</td>
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<tr>
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<td># 131</td>
<td>51 15 27</td>
<td>22 4 10</td>
<td>2</td>
<td>37</td>
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<td>% 52.2</td>
<td>53.1 44.1 52.9</td>
<td>57.9 40.0</td>
<td>50.0 100.0</td>
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</tr>
</tbody>
</table>

* indicates the competency is considered essential at the 50% level.
Analysis of Treatment Competencies

Of the 28 competencies listed under Treatment, 21 (75.0%) were judged to be essential by the overall group. These competencies were: 62, 63, 64, 65, 68, 69, 70, 71, 72, 73, 74, 77, 78, 79, 82, 83, 85, 86, 87, 88, and 89. While there was general agreement among the ratings of the industrial education teaching personnel and the overall group, there were some exceptions. In the following four competencies: 63, 65, 69, and 79, the industrial arts senior high school teachers were slightly below the 50% level while both the junior high school industrial arts teachers and the trade and industry teachers were above it. It should be noted that the overall group rated these competencies above 50%.

Among those competencies not accepted as essential at the 50% level, 75: "Inform school officials of their responsibilities regarding placement and supportive services for the handicapped enrolled in the pre- and vocational program" - was rated essential by the junior high school industrial arts teachers and the trade and industry teachers as well as the junior high school principals. The senior high school industrial arts
teachers rated it at 38.9%. Competency 67: "Conduct orientation for available academic and vocational programs" was considered essential by 54.9% of the trade and industry teachers but not by any of the industrial arts teaching personnel. It should be noted that all other groups except personnel involved with handicapped rated it above 50%.

More detail about the ratings of these Treatment competencies is given in Table 15.
TABLE 15

Number and Percent of Individuals in Sub-groups Who Rated Treatment Competencies Essential

<table>
<thead>
<tr>
<th>Competency Overall</th>
<th>I.A. Teachers</th>
<th>T. &amp; I. Principals</th>
<th>Personnel Involved</th>
<th>Non-Response</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Sr. HS Jr. HS Teachers</td>
<td>Sr. HS &amp; Jr. HS Teachers</td>
<td>with Disadvantaged</td>
<td>Handicapped</td>
</tr>
<tr>
<td>Number</td>
<td>Number</td>
<td>Number</td>
<td>Number</td>
<td>Percentage</td>
</tr>
<tr>
<td>62 *</td>
<td>167</td>
<td>63</td>
<td>21</td>
<td>36</td>
</tr>
<tr>
<td>%</td>
<td>66.8</td>
<td>65.6</td>
<td>63.6</td>
<td>69.2</td>
</tr>
<tr>
<td>63 *</td>
<td>145</td>
<td>46</td>
<td>17</td>
<td>31</td>
</tr>
<tr>
<td>%</td>
<td>58.9</td>
<td>49.5</td>
<td>51.5</td>
<td>62.0</td>
</tr>
<tr>
<td>64 *</td>
<td>151</td>
<td>52</td>
<td>22</td>
<td>28</td>
</tr>
<tr>
<td>%</td>
<td>59.7</td>
<td>53.6</td>
<td>66.7</td>
<td>53.8</td>
</tr>
<tr>
<td>65 *</td>
<td>131</td>
<td>47</td>
<td>19</td>
<td>29</td>
</tr>
<tr>
<td>%</td>
<td>52.0</td>
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</tr>
<tr>
<td>66</td>
<td>110</td>
<td>44</td>
<td>11</td>
<td>22</td>
</tr>
<tr>
<td>%</td>
<td>44.2</td>
<td>46.3</td>
<td>34.4</td>
<td>43.1</td>
</tr>
<tr>
<td>67</td>
<td>109</td>
<td>35</td>
<td>8</td>
<td>28</td>
</tr>
<tr>
<td>%</td>
<td>44.0</td>
<td>36.8</td>
<td>25.0</td>
<td>54.9</td>
</tr>
<tr>
<td>68 *</td>
<td>166</td>
<td>59</td>
<td>22</td>
<td>33</td>
</tr>
<tr>
<td>%</td>
<td>65.9</td>
<td>60.8</td>
<td>66.7</td>
<td>63.5</td>
</tr>
<tr>
<td>69 *</td>
<td>135</td>
<td>47</td>
<td>21</td>
<td>31</td>
</tr>
<tr>
<td>%</td>
<td>54.0</td>
<td>49.0</td>
<td>63.6</td>
<td>60.8</td>
</tr>
<tr>
<td>70 *</td>
<td>211</td>
<td>76</td>
<td>33</td>
<td>43</td>
</tr>
<tr>
<td>%</td>
<td>84.4</td>
<td>80.9</td>
<td>97.1</td>
<td>82.7</td>
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</table>

* indicates the competency is considered essential at the 50% level.
**TABLE 15 - Continued**

<table>
<thead>
<tr>
<th>Competency</th>
<th>Overall I.A. Teachers T. &amp; I. Principals</th>
<th>Personnel Involved with Disadvantaged Handicapped</th>
<th>Non-Response</th>
</tr>
</thead>
<tbody>
<tr>
<td>Number</td>
<td>Sr. HS</td>
<td>Jr. HS</td>
<td>Teachers</td>
</tr>
<tr>
<td>71 * #</td>
<td>171</td>
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<tr>
<td>%</td>
<td>68.7</td>
<td>68.8</td>
<td>65.6</td>
</tr>
<tr>
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<td>161</td>
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<tr>
<td>%</td>
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<td>66.7</td>
<td>63.6</td>
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<tr>
<td>%</td>
<td>58.2</td>
<td>53.6</td>
<td>62.5</td>
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<tr>
<td>%</td>
<td>80.1</td>
<td>73.2</td>
<td>90.9</td>
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<tr>
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<tr>
<td>%</td>
<td>47.1</td>
<td>38.9</td>
<td>58.1</td>
</tr>
<tr>
<td>76 * #</td>
<td>29</td>
<td>15</td>
<td>2</td>
</tr>
<tr>
<td>%</td>
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<td>15.6</td>
<td>6.3</td>
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<tr>
<td>%</td>
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<td>87.8</td>
<td>93.8</td>
</tr>
<tr>
<td>78 * #</td>
<td>202</td>
<td>74</td>
<td>28</td>
</tr>
<tr>
<td>%</td>
<td>80.8</td>
<td>75.5</td>
<td>87.5</td>
</tr>
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<td>79 * #</td>
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<tr>
<td>%</td>
<td>50.4</td>
<td>49.0</td>
<td>50.0</td>
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<tr>
<td>80 * #</td>
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</tr>
<tr>
<td>%</td>
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<td>38.8</td>
<td>16.1</td>
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* indicates the competency is considered essential at the 50% level.
<table>
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<th>Jr. HS Teacher</th>
<th>T. &amp; I. Principals Sr. HS</th>
<th>Jr. HS</th>
<th>Personnel Involved with Responses Disadvantaged</th>
<th>Handicapped</th>
<th>Non-Responses</th>
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</thead>
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<td>20</td>
<td>19</td>
<td>5</td>
<td>9</td>
</tr>
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<td>17</td>
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<td>16</td>
</tr>
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<td>19</td>
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<td>7</td>
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<td>29</td>
<td>7</td>
<td>18</td>
</tr>
<tr>
<td>86 *</td>
<td>195</td>
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</tbody>
</table>

* indicates the competency is considered essential at the 50% level.
Analysis of Nurture Competencies

Of the 34 Competencies originally listed under Nurture, 21 (61.8%) were considered essential as rated by the overall group at the 50% level. Those rated essential: 90, 92, 97, 98, 99, 102, 104, 105, 106, 108, 110, 111, 112, 115, 117, 118, 119, 120, 121, 122, and 123. While there was general agreement about these competencies among the sub-groups, the following differences should be noted. The junior high school industrial arts teachers did not rate competencies 97, 106, and 117 as essential, although the senior high school industrial arts teachers and the trade and industry teachers, as well as the other sub-groups did. The junior high school industrial arts teachers also rated competency 116 as essential, while the other industrial education personnel and other sub-groups did not.

The trade and industry teachers differed from the industrial arts teachers, both junior and senior high school levels, about competencies 98, 110, and 113. Competency 98: "Locate support for those with personal adjustment problems (e.g. drug abuse, test anxiety, etc.)"; and Competency 113: "Establish a policy and procedure for job placement." - the trade and industry teachers rated them essential while the other industrial education teachers
did not. The trade and industry teachers did not rate Competency 110: "Organize instructional environments that encourage exploratory activities" as essential, while all other sub-groups did. The senior high school industrial arts teachers did not consider Competency 99: "Develop a procedure for job relocation or rotation within the lab." essential while all the other groups did.

These results and other data are found in Table 16.
<table>
<thead>
<tr>
<th>Competency</th>
<th>Overall</th>
<th>I.A. Teachers</th>
<th>T. &amp; I. Principals</th>
<th>Personnel Involved</th>
<th>Non-Responses</th>
</tr>
</thead>
<tbody>
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<td></td>
<td></td>
<td>Disadvantaged</td>
<td>Handicapped</td>
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<tr>
<td>Sr. HS</td>
<td>Jr. HS</td>
<td>Teachers</td>
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<td></td>
<td></td>
</tr>
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<td>25</td>
<td>22</td>
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<td>50.0</td>
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<td>60.8</td>
<td>75.7</td>
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<tr>
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<td># 108</td>
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</tr>
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<td>25.0</td>
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<td># 78</td>
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<td>9</td>
<td>15</td>
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<td>29.4</td>
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<td>95</td>
<td># 71</td>
<td>24</td>
<td>11</td>
<td>15</td>
<td>10</td>
</tr>
<tr>
<td>% 29.1</td>
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<td># 60</td>
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<td>14</td>
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<tr>
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<td># 129</td>
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<td>10</td>
<td>33</td>
<td>26</td>
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<tr>
<td>% 52.7</td>
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<td>31.3</td>
<td>64.7</td>
<td>72.2</td>
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</tbody>
</table>

* * indicates the competency was considered essential at the 50% level.
### TABLE 16 - Continued

<table>
<thead>
<tr>
<th>Competency Number</th>
<th>Overall %</th>
<th>I.A. Teachers %</th>
<th>Sr. HS Jr. HS Teachers %</th>
<th>Principals %</th>
<th>Sr. HS Jr. HS Principals %</th>
<th>Personnel Involved with Non-Responses</th>
</tr>
</thead>
<tbody>
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<td>29.2</td>
<td>25.0</td>
<td>37.3</td>
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</tr>
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<td>112</td>
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<td>22</td>
<td>22</td>
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<td>72.7</td>
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<td>81.6</td>
<td>90.0</td>
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<td>80.4</td>
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<td>90.0</td>
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<td>55.7</td>
<td>43.8</td>
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<tr>
<td>109</td>
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<td>45.4</td>
<td>59.4</td>
<td>68.0</td>
<td>65.8</td>
<td>90.0</td>
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</table>

* indicates the competency was considered essential at the 50% level.
<table>
<thead>
<tr>
<th>Competency Number</th>
<th>Overall</th>
<th>I.A. Teachers T. &amp; I. Principals</th>
<th>Personnel Involved with</th>
<th>Non-Responses</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Sr. HS</td>
<td>Jr. HS Teachers Sr. HS Jr. HS</td>
<td>Disadvantaged Handicapped</td>
<td></td>
</tr>
<tr>
<td>109</td>
<td>92</td>
<td>33 8 20 19 3 9 0</td>
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<td></td>
</tr>
<tr>
<td>110 *</td>
<td>136</td>
<td>49 20 21 26 6 13 0</td>
<td></td>
<td></td>
</tr>
<tr>
<td>111 *</td>
<td>189</td>
<td>69 30 32 32 9 16 0</td>
<td></td>
<td></td>
</tr>
<tr>
<td>112 *</td>
<td>158</td>
<td>59 24 33 26 7 8 0</td>
<td></td>
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<td>113</td>
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<td>33 7 28 24 2 10 1</td>
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</tr>
<tr>
<td>114</td>
<td>106</td>
<td>37 9 20 25 3 11 1</td>
<td></td>
<td></td>
</tr>
<tr>
<td>115 *</td>
<td>190</td>
<td>70 27 40 30 6 16 1</td>
<td></td>
<td></td>
</tr>
<tr>
<td>116</td>
<td>97</td>
<td>29 16 17 20 2 11 2</td>
<td></td>
<td></td>
</tr>
<tr>
<td>117 *</td>
<td>137</td>
<td>46 19 28 25 3 14 2</td>
<td></td>
<td></td>
</tr>
<tr>
<td>118 *</td>
<td>168</td>
<td>58 21 33 32 7 16 1</td>
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<td></td>
<td>66.9</td>
<td>59.2 65.6 64.7 84.2 70.0 80.0 50.0</td>
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* indicates the competency was considered essential at the 50% level.
<table>
<thead>
<tr>
<th>Competency</th>
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<th>I.A. Teachers</th>
<th>T. &amp; I. Principals</th>
<th>Personnel Involved</th>
<th>Non-Responses</th>
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<td>Teachers</td>
<td>Sr. HS</td>
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<tr>
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<td>68</td>
<td>21</td>
<td>39</td>
<td>30</td>
</tr>
<tr>
<td></td>
<td>% 73.1</td>
<td>70.1</td>
<td>65.6</td>
<td>76.5</td>
<td>78.9</td>
</tr>
<tr>
<td>120 *</td>
<td># 195</td>
<td>71</td>
<td>27</td>
<td>37</td>
<td>32</td>
</tr>
<tr>
<td></td>
<td>% 77.4</td>
<td>72.4</td>
<td>81.8</td>
<td>72.5</td>
<td>84.2</td>
</tr>
<tr>
<td>121 *</td>
<td># 188</td>
<td>63</td>
<td>28</td>
<td>37</td>
<td>35</td>
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<tr>
<td></td>
<td>% 75.2</td>
<td>64.9</td>
<td>84.8</td>
<td>72.5</td>
<td>92.1</td>
</tr>
<tr>
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<td># 193</td>
<td>66</td>
<td>29</td>
<td>40</td>
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<tr>
<td></td>
<td>% 77.2</td>
<td>68.8</td>
<td>87.9</td>
<td>78.4</td>
<td>89.5</td>
</tr>
<tr>
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<td># 190</td>
<td>69</td>
<td>29</td>
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<td>71.1</td>
<td>87.9</td>
<td>74.5</td>
<td>81.6</td>
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</table>

* indicates the competency was considered essential at the 50% level.
Analysis of Evaluation Competencies

Of the 19 competencies listed under Evaluation and Dissemination on the instrument, 12 (63.2%) were found to be essential by the total group. These competencies included: 124, 125, 126, 127, 128, 130, 131, 132, 133, 137, 138, and 142. While the industrial education teaching personnel were generally in agreement with the total population, there were some areas of difference.

The trade and industry teachers differed from the industrial arts teachers on Competency 133; "Conduct a parent-teacher conference."; and Competency 140; "Establish and/or utilize advisory groups effectively in instructional development and program operation." The trade and industry teachers rated 133 non-essential and 140 essential.

Senior high school industrial arts teachers differed from the other industrial education teaching personnel in rating the following competencies: 142: "Obtain public support for vocational programs provided for special needs students."; 136: "Utilize follow-up data and information regarding special needs students leaving or graduating to improve program."; and 139: "Share program development strengths and weaknesses with other professionals." In
Each case, the senior high school industrial arts teachers rated the competency non-essential while the other groups rated it essential.

This information and other data about these competencies can be found in Table 17.
TABLE 17

Number and Percent of Individuals in Sub-groups Who Rated Evaluation Competencies Essential

<table>
<thead>
<tr>
<th>Competency</th>
<th>Overall</th>
<th>I.A. Teachers</th>
<th>T. &amp; I. Principals</th>
<th>Personnel Involved</th>
<th>Non-Response</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Number</td>
<td>Sr. HS</td>
<td>Jr. HS</td>
<td>Teachers Sr. HS</td>
<td>Jr. HS</td>
</tr>
<tr>
<td>124 *</td>
<td># 198</td>
<td>71</td>
<td>28</td>
<td>37</td>
<td>34</td>
</tr>
<tr>
<td></td>
<td>% 79.8</td>
<td>73.2</td>
<td>87.5</td>
<td>74.0</td>
<td>89.5</td>
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<tr>
<td>125 *</td>
<td># 197</td>
<td>71</td>
<td>25</td>
<td>38</td>
<td>35</td>
</tr>
<tr>
<td></td>
<td>% 80.1</td>
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<td>80.6</td>
<td>76.0</td>
<td>92.1</td>
</tr>
<tr>
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<td>28</td>
<td>45</td>
<td>33</td>
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<td>84.8</td>
<td>90.0</td>
<td>86.8</td>
</tr>
<tr>
<td>127 *</td>
<td># 191</td>
<td>68</td>
<td>25</td>
<td>39</td>
<td>35</td>
</tr>
<tr>
<td></td>
<td>% 76.4</td>
<td>70.8</td>
<td>73.5</td>
<td>76.5</td>
<td>92.1</td>
</tr>
<tr>
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<td># 165</td>
<td>55</td>
<td>22</td>
<td>36</td>
<td>27</td>
</tr>
<tr>
<td></td>
<td>% 66.0</td>
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<td>66.7</td>
<td>70.6</td>
<td>71.1</td>
</tr>
<tr>
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<td># 79</td>
<td>29</td>
<td>5</td>
<td>14</td>
<td>19</td>
</tr>
<tr>
<td></td>
<td>% 32.1</td>
<td>30.2</td>
<td>15.6</td>
<td>28.0</td>
<td>50.0</td>
</tr>
<tr>
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<td># 167</td>
<td>60</td>
<td>22</td>
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<tr>
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<td>30</td>
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<td>29</td>
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<td>66.0</td>
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<tr>
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<td># 141</td>
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<td>20</td>
<td>34</td>
<td>20</td>
</tr>
<tr>
<td></td>
<td>% 56.6</td>
<td>54.1</td>
<td>60.6</td>
<td>66.7</td>
<td>52.6</td>
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</table>

* indicates the competency is considered essential at the 50% level.
<table>
<thead>
<tr>
<th>Competency</th>
<th>Overall</th>
<th>I.A. Teachers</th>
<th>T. &amp; I. Principals</th>
<th>Personnel Involved</th>
<th>Non-Response</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Number</td>
<td>Sr. HS Jr. HS</td>
<td>Teachers Sr. HS Jr. HS</td>
<td>with Disadvantaged Handicapped</td>
<td></td>
</tr>
<tr>
<td>133 *</td>
<td># 137</td>
<td>54 17 21</td>
<td>29 6</td>
<td>9 1</td>
<td>41</td>
</tr>
<tr>
<td></td>
<td>% 55.5</td>
<td>55.7 53.1 42.0</td>
<td>78.4 60.0</td>
<td>47.4 50.0</td>
<td></td>
</tr>
<tr>
<td>134</td>
<td># 79</td>
<td>31 6 17</td>
<td>17 2</td>
<td>6 0</td>
<td>42</td>
</tr>
<tr>
<td></td>
<td>% 32.1</td>
<td>32.0 18.8 34.0</td>
<td>45.9 22.2</td>
<td>31.6 0.0</td>
<td></td>
</tr>
<tr>
<td>135</td>
<td># 105</td>
<td>39 15 18</td>
<td>20 3</td>
<td>10 0</td>
<td>38</td>
</tr>
<tr>
<td></td>
<td>% 42.0</td>
<td>39.4 44.1 36.7</td>
<td>52.6 33.3</td>
<td>52.6 0.0</td>
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</tr>
<tr>
<td>136</td>
<td># 120</td>
<td>38 18 28</td>
<td>21 2</td>
<td>12 1</td>
<td>42</td>
</tr>
<tr>
<td></td>
<td>% 48.8</td>
<td>39.6 54.5 56.0</td>
<td>55.3 22.2</td>
<td>66.7 50.0</td>
<td></td>
</tr>
<tr>
<td>137 *</td>
<td># 151</td>
<td>50 21 31</td>
<td>28 5</td>
<td>15 1</td>
<td>39</td>
</tr>
<tr>
<td></td>
<td>% 60.6</td>
<td>52.1 61.8 60.8</td>
<td>73.7 62.5</td>
<td>75.0 50.0</td>
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<tr>
<td>138 *</td>
<td># 160</td>
<td>56 21 29</td>
<td>29 6</td>
<td>18 1</td>
<td>41</td>
</tr>
<tr>
<td></td>
<td>% 64.8</td>
<td>58.9 65.6 56.9</td>
<td>76.3 66.7</td>
<td>90.0 50.0</td>
<td></td>
</tr>
<tr>
<td>139</td>
<td># 123</td>
<td>42 17 24</td>
<td>22 5</td>
<td>12 1</td>
<td>37</td>
</tr>
<tr>
<td></td>
<td>% 49.0</td>
<td>42.9 50.0 48.0</td>
<td>57.9 50.0</td>
<td>63.2 50.0</td>
<td></td>
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<tr>
<td>140</td>
<td># 97</td>
<td>31 12 27</td>
<td>18 0</td>
<td>8 1</td>
<td>47</td>
</tr>
<tr>
<td></td>
<td>% 40.2</td>
<td>33.0 40.0 54.0</td>
<td>48.6 0.0</td>
<td>44.4 50.0</td>
<td></td>
</tr>
<tr>
<td>141</td>
<td># 66</td>
<td>23 9 13</td>
<td>10 2</td>
<td>8 1</td>
<td>47</td>
</tr>
<tr>
<td></td>
<td>% 27.4</td>
<td>24.5 29.0 26.5</td>
<td>27.0 20.0</td>
<td>44.4 50.0</td>
<td></td>
</tr>
<tr>
<td>142 *</td>
<td># 124</td>
<td>37 21 29</td>
<td>22 3</td>
<td>11 1</td>
<td>44</td>
</tr>
<tr>
<td></td>
<td>% 50.8</td>
<td>38.5 65.6 60.4</td>
<td>57.9 30.0</td>
<td>61.1 50.0</td>
<td></td>
</tr>
</tbody>
</table>

* indicates the competency was considered essential at the 50% level.
Analysis of "Other" Competencies

Of the five competencies listed as "Other", all five were judged to be essential at the 50% level by the total population. There was very little disagreement among or between any of the groups about these competencies. The analysis of these competencies is presented in Table 18.
### Table 18

Number and Percent of Individuals in Sub-groups Who Rated "Other" Competencies Essential

<table>
<thead>
<tr>
<th>Competency</th>
<th>Overall</th>
<th>I.A. Teachers</th>
<th>T. &amp; I. Principals</th>
<th>Personnel Involved</th>
<th>Non-Response</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
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<td>Jr. HS</td>
<td>Teachers</td>
<td>Sr. HS</td>
</tr>
<tr>
<td>143 *</td>
<td>#</td>
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<td>57</td>
<td>22</td>
<td>31</td>
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<tr>
<td></td>
<td>%</td>
<td>65.5</td>
<td>58.8</td>
<td>66.7</td>
<td>60.8</td>
</tr>
<tr>
<td>144 *</td>
<td>#</td>
<td>217</td>
<td>81</td>
<td>30</td>
<td>44</td>
</tr>
<tr>
<td></td>
<td>%</td>
<td>87.1</td>
<td>82.7</td>
<td>90.9</td>
<td>86.3</td>
</tr>
<tr>
<td>145 *</td>
<td>#</td>
<td>207</td>
<td>72</td>
<td>28</td>
<td>44</td>
</tr>
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<td></td>
<td>%</td>
<td>83.5</td>
<td>75.0</td>
<td>84.8</td>
<td>86.3</td>
</tr>
<tr>
<td>146 *</td>
<td>#</td>
<td>200</td>
<td>77</td>
<td>29</td>
<td>40</td>
</tr>
<tr>
<td></td>
<td>%</td>
<td>79.7</td>
<td>78.6</td>
<td>85.3</td>
<td>78.4</td>
</tr>
<tr>
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<td>157</td>
<td>58</td>
<td>22</td>
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<tr>
<td></td>
<td>%</td>
<td>63.3</td>
<td>59.8</td>
<td>64.7</td>
<td>72.5</td>
</tr>
</tbody>
</table>

* indicates the competency was considered essential at the 50% level.
Analysis of Preferred Timing of Training

For each of the competencies previously discussed, the respondent was asked to determine when the training should take place. The choices were: "Pre-service", "In-service", or "Other". As discussed before, the "Other" category was not further defined nor was there any part of the directions which described the meaning of that choice.

The results of this part of the questionnaire are presented in Tables 14 to 19, and the numbers and percents reported refer to the total population. Only those competencies which were considered essential are listed.

Preferred Timing of Training—Diagnosis Competencies

As noted in Table 19, the reported appropriate timing of training varies from competency to competency. In some cases it does not appear that the respondents showed a real preference for either pre- or in-service. Examples include Competencies: 1, 8, and 12. The time indicated by the respondents was evenly split between pre- and in-service. In these cases there was less than 5% difference.
In some cases there was a slight preference for either pre-service, such as Competency 4; or in-service, Competencies 6 and 13. In still other cases, there was a decided difference. Competencies 9 and 15 were chosen for pre-service, while Competency 2 was chosen for in-service training.

The nine Diagnosis competencies which were considered essential therefore, included three in each category; Pre-, In-service, and no difference.
<table>
<thead>
<tr>
<th>Competency</th>
<th>Total Respondents</th>
<th>Pre-Service</th>
<th>%</th>
<th>In-Service</th>
<th>%</th>
<th>Other</th>
<th>%</th>
<th>No Response</th>
</tr>
</thead>
<tbody>
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<td>1</td>
<td>243</td>
<td>120</td>
<td>49.4</td>
<td>113</td>
<td>46.5</td>
<td>10</td>
<td>4.1</td>
<td>45</td>
</tr>
<tr>
<td>2</td>
<td>246</td>
<td>65</td>
<td>26.4</td>
<td>169</td>
<td>68.7</td>
<td>12</td>
<td>4.9</td>
<td>42</td>
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<td>3</td>
<td>246</td>
<td>126</td>
<td>51.2</td>
<td>106</td>
<td>43.1</td>
<td>14</td>
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<td>42.6</td>
<td>113</td>
<td>49.1</td>
<td>19</td>
<td>8.3</td>
<td>58</td>
</tr>
<tr>
<td>5</td>
<td>249</td>
<td>121</td>
<td>48.6</td>
<td>116</td>
<td>46.6</td>
<td>12</td>
<td>4.8</td>
<td>39</td>
</tr>
<tr>
<td>6</td>
<td>246</td>
<td>146</td>
<td>59.3</td>
<td>92</td>
<td>37.4</td>
<td>8</td>
<td>3.3</td>
<td>42</td>
</tr>
<tr>
<td>7</td>
<td>239</td>
<td>109</td>
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<td>111</td>
<td>46.4</td>
<td>19</td>
<td>7.9</td>
<td>49</td>
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<tr>
<td>8</td>
<td>237</td>
<td>100</td>
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<td>113</td>
<td>47.7</td>
<td>24</td>
<td>10.1</td>
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<tr>
<td>9</td>
<td>246</td>
<td>138</td>
<td>56.1</td>
<td>98</td>
<td>39.8</td>
<td>10</td>
<td>4.1</td>
<td>42</td>
</tr>
</tbody>
</table>
Preferred Timing of Training--Prescription Competencies

As noted in Table 20, the reported appropriate timing of training varies with the competency. In some cases, it does not appear that the respondents exhibited a strong preference between pre-service and in-service. These competencies include: 26, 29, 30, 33, 46, 47, 51, and 61. There was less than 5% difference in the number of respondents rating these competencies. There was a decided difference in the reported appropriate timing of training in the following competencies:

Pre-service: 23, 24, 25, 40, 41, 52, and 60.

In-service: 21, 22, 31, 34, 42, 44, 45, 49, 50, 54, 55, 56, and 57.

There were therefore, 8 competencies for which there was not a decided preference, and 7 for which Pre-service was suggested, and 13 for which In-service was suggested as the best time for training.
TABLE 20

Appropriate Time of Training for Essential Prescription Competencies

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Preferred Timing of Training--Treatment Competencies

As noted in Table 21, the reported appropriate timing of training varies with the given competency. In some cases, it does not appear that the respondents exhibited a strong preference between pre-service and in-service. These competencies in the Treatment section included: 63, 65, 68, and 69. All of these showed little difference in average choice (less than 5% difference).

The majority of the Treatment competencies were suggested for pre-service training. These were Competencies: 62, 70, 71, 72, 73, 74, 77, 78, 79, 82, 83, 85, 86, 87, 88, and 89. Competency 64 was the only one that was clearly suggested for in-service training.

In summary, the majority of Treatment competencies were suggested for pre-service (16), four were rated evenly (within 5%), and one was suggested for in-service training.
## TABLE 21

**Appropriate Time of Training for**

**Essential Treatment Competencies**

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Preferred Timing of Training - Nurture Competencies

As noted in Table 22, the reported appropriate time for training varies with the given competency. In some cases, it does not appear that the respondents exhibited a strong preference between pre-service and in-service. These competencies were: 92, 108, 117, and 121. Each of these competencies averaged less than 5% difference between pre-service and in-service ratings.

The largest number of competencies under Nurture were chosen as being best taught at the pre-service level. There were 11 of these: 102, 104, 105, 110, 111, 115, 118, 119, 120, 122, and 123. Six other competencies were selected by the population as being appropriate for inclusion in in-service training; they were: 90, 97, 98, 99, 106, and 112.
### TABLE 22

**Appropriate Time of Training for Essential Nurture Competencies**

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Preferred Timing of Training—Evaluation Competencies

As noted in Table 23, the reported appropriate time for training differs for various competencies. In one case, it does not appear that a strong preference for either pre-service or in-service is shown by the respondents (Competency 137).

In other cases, there is a clear preference for pre-service training as shown in the results for Competencies: 124, 125, 126, 127, 130, 131, and 138. In the case of still other competencies, the indicated preference is for in-service training. These were: 128, 132, 133, and 142. The majority (7) of Evaluation Competencies were suggested for pre-service training. Four were selected as appropriate for in-service training, and one competency was considered suitable for either or both.
TABLE 23

Appropriate Time of Training for
Essential Evaluation Competencies

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<tr>
<th>Competency</th>
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<th>Other %</th>
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</table>
Preferred Timing of Training—"Other" Competencies

As noted in Table 24, the reported appropriate time for training varies with the given competency. In one case (Competency 143), it did not appear that the respondents exhibited a strong preference for either pre- or in-service training. In the case of Competencies 144 and 145, the respondents indicated that Pre-service was the appropriate time. In the cases of Competencies 146 and 147, In-service was selected as the appropriate time of training.

The "other" competencies, then were fairly evenly split between the pre- and in-service time for suggested training.
<table>
<thead>
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<th>Competency</th>
<th>Total Respondents</th>
<th>Pre-Service</th>
<th>%</th>
<th>In-Service</th>
<th>%</th>
<th>Other</th>
<th>%</th>
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<td>146</td>
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<td>38.3</td>
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<td>14.0</td>
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</table>
Summary of Preferred Timing of Training

In summary, after consideration of the respondents' choices of the appropriate times for training, the following essential competencies were selected for Pre-service training:

**Diagnosis:** 4, 9, 15.
**Prescription:** 23, 24, 25, 40, 41, 52, 60.
**Treatment:** 62, 70, 71, 72, 73, 74, 77, 78, 79, 82, 83, 85, 86, 87, 88, 89.
**Nurture:** 102, 104, 105, 110, 111, 115, 118, 119, 120, 122, 123.
**Evaluation:** 124, 125, 126, 127, 130, 131, 138.
**Other:** 144, 145.
**Total:** 46 Competencies

The following essential competencies were suggested for In-service training:

**Diagnosis:** 2, 6, 13.
**Prescription:** 21, 22, 31, 34, 42, 44, 45, 49, 50, 54, 55, 56, 57.
**Treatment:** 64.
**Nurture:** 90, 97, 98, 99, 106, 112.
**Evaluation:** 128, 132, 133, 142.
**Other:** 146, 147.
**Total:** 29 Competencies

The following competencies received ratings for pre-service and in-service which were within 5% of each other:

**Diagnosis:** 1, 8, 12.
**Prescription:** 26, 29, 30, 33, 46, 47, 51, 61.
**Treatment:** 63, 65, 68, 69.
Evaluation: 137.
Other: 143.
Total: 21 Competencies

Development of Objectives for Instruction

Throughout the identification and development of the list of competencies, input was sought from a variety of educational personnel. Input from practicing teachers and educational personnel was obtained by the survey questionnaire. Input was sought and obtained from nationally recognized professionals in industrial education by asking members of the Special Needs Committees from both the American Vocational Association (A.V.A.) and the American Industrial Arts Association (A.I.A.A.) to examine the developed objectives.

The list of objectives was developed by sorting and ordering the competencies found in the original instrument. The major headings of Diagnosis, Prescription, Treatment, Nurture, and Evaluation were retained. The objectives contained sub-parts which were the original competencies. A list of the objectives, with the competencies (and the original number of each competency) is provided in Appendix H.
The objectives with the competencies were then relisted to include some explanation for each competency. This document was the one sent to the national experts from the A.V.A. and the A.I.A.A. After consultation with Dr. Ronald Lutz, Chairman of both the A.V.A. and the A.I.A.A. committees for special needs, it was found that there were seven educators who were members of both committees. These seven educators were contacted by telephone and asked to critically examine a list of objectives which had been generated by this researcher from the original competencies. All seven agreed to examine and return the materials. Of the seven copies sent out, seven were returned. The following individuals participated:

Dr. Ronald J. Lutz, Professor, Department of Industrial Education and Technology, Central Michigan University, Mt. Pleasant, Michigan.

Dr. Michael Bender, Director of Special Education, John F. Kennedy Institute, Baltimore, Maryland.

Mr. C. R. Anderson, Specialist III, Vocational Programs for the Disadvantaged and Handicapped, School District of Kansas City, Missouri.

Mrs. Charlene Anderson, Vocational Programs for the Disadvantaged and Handicapped, School District of Kansas City, Missouri.

Dr. Dennis G. Tesolowski, Vocational Education for the Handicapped, Division of Vocational Education, Florida International University, Miami, Florida.
Dr. Robert M. Tomlinson, Chairman, Division of Industrial Education, University of Illinois, Urbana, Illinois.

Mr. Ronald D. Yuill, Industrial Arts Teacher and officer in the Indiana Industrial Education Association, Lafayette, Indiana.

The input sought from these individuals was their judgment of the level of proficiency needed by classroom teachers for each of these competencies. The following choices were provided on the list of objectives and competencies:

AWARENESS - Knows about the competency but does not have/need skill to perform task.

LOW LEVEL - Has the minimal skill/ability regarding the competency to perform the task with the assistance of others.

HIGH LEVEL - Has the skill/ability regarding the competency to perform the task independently.

NOT APPROPRIATE - Not necessary for the industrial educator to know about and/or do.
Analysis of Input from Members of Special Needs Committees

In the analysis of these objectives and competencies, a simple majority was used. The number of experts was small (7) and 57.1% or four was considered to be a majority. This report of the results includes three columns: "Objective Number", "Competency Number", and "Original Competency Number". "Objective Number" refers to the number of the objective on the document sent to the experts. The "Competency Number" also refers to the list of competencies and objectives sent to the experts. A copy of this document is located in Appendix L. The "Original Competency Number" refers to the number of that competency on the instrument sent to educational personnel in Maine. A copy of this instrument is located in Appendix D.

Based on the returns of the seven educators listed above, there were eight individual votes of "Not Appropriate". Those which were received are listed below:

<table>
<thead>
<tr>
<th>Objective</th>
<th>Competency</th>
<th>Original Competency</th>
</tr>
</thead>
<tbody>
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<td>135</td>
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<tr>
<td>28</td>
<td>1</td>
<td>141</td>
</tr>
</tbody>
</table>
Since none of these was noted as "Not Appropriate" by a majority (4 or more) of the respondents, they were included in the analysis of the other competencies.

### Competencies Needed at the Awareness Level

One of the competencies was listed by a majority (4 or more) of the experts as "needed at the awareness level". It is reported below:

<table>
<thead>
<tr>
<th>Objective</th>
<th>Competency</th>
<th>Original Competency</th>
</tr>
</thead>
<tbody>
<tr>
<td>2</td>
<td>2</td>
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</tbody>
</table>

### Competencies Needed at the Low Level

Some (12) of the competencies were selected by a majority of those responding as being needed at the "Low Level" of expertise. These are listed below:

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</table>
Competencies Needed at the High Level

Most of the competencies (92) were suggested for inclusion at the "High Level" of proficiency. These competencies are listed below:

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</table>

**Competencies Recommended for Inclusion But Skill Levels Unspecified**

A small number (15) of the competencies were recommended for inclusion, but there was not a clear distinction between "High Level" and "Low Level" and "Awareness". These competencies included the following:
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<th>Competency</th>
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Based on this analysis, most of the competencies were suggested for inclusion at a high level of proficiency. Each objective and competency along with the information obtained from the experts is listed in Appendix M. Additional comments submitted by these experts are in Appendix N.
Summary

This chapter has presented the data obtained from the questionnaire which was sent to educational personnel in Maine. It has also presented the organization of the original competencies into objectives and competencies in a form so that they could be evaluated by a selected panel of national experts. The results of this evaluation have been presented.

Chapter V presents a list of the developed objectives and competencies, along with a summarized rating of each competency on the original instrument. This provides a comparison of the ratings by both the educational personnel in Maine and the national panel of experts from the committees for special needs students. It also presents an analysis of present delivery options for Maine.
CHAPTER V
RECOMMENDED OBJECTIVES AND COMPETENCIES FOR
INDUSTRIAL TEACHER EDUCATION

Introduction

This study has developed a list of objectives and competencies needed by teachers of industrial education to provide instruction for handicapped learners in regular classes. The original problem of the study was to determine the training needs of industrial education personnel so that handicapped learners could be provided the legally mandated and educationally desirable services of industrial education. In order to achieve this goal, industrial educators must develop the necessary understandings and skills so that they can teach handicapped individuals in their classes.

The purpose of this chapter is to present the results of this study in a form that may be used to develop educational specifications for pre- and in-service preparation of industrial educators of handicapped learners. These results are based on the literature review process, evaluation by panels of experts, and the results of the
survey of the educational personnel in Maine.

**Identification of Competencies**

The list of competencies used in the survey in Maine was derived from an analysis of twelve published lists of competencies for industrial educators of handicapped learners and an evaluation of their origin. It was subsequently examined by a jury of experts representing industrial arts, vocational education, and special education. Following this examination, the list was revised and examined by a jury of teacher educators who were knowledgable about industrial education and/or special education. The resulting list of competencies was sent to the total population of industrial educators and involved administrators at the junior and senior high school levels in Maine.

**Development of Objectives and Competencies**

It was recognized that the 147 competencies required some additional structure in order to be operational in terms of the development of educational specifications for teacher education in an industrial education program. It was also recognized that these 147 competencies were
statements of desired professional behaviors necessary for successful teaching of the handicapped learners. Accordingly, the investigator critically analyzed each competency to further synthesize the competencies into clusters of related behaviors. A set of 34 behaviorally stated objectives was developed as a result of this analysis and synthesis process. Competencies were then categorized under each objective. A total of 120 competencies were listed. In a limited number of cases (7), the objective itself was rated by the national committees because there were no competencies listed for it. It should be noted that this figure represents 27 less than the list sent to the Maine educators. This was accomplished because the investigator was able to identify, through this analysis, concepts within competency statements which were generalizable. These statements were combined whenever possible when they were concerned with similar knowledge and skills.

After the clustering process, 34 objective statements endured. These were listed, along with the competencies for each, and this document was submitted to the investigator's advisor before the final copy was sent to
statements of desired professional behaviors necessary for successful teaching of the handicapped learners. Accordingly, the investigator critically analyzed each competency to further synthesize the competencies into clusters of related behaviors. A set of 34 behaviorally stated objectives was developed as a result of this analysis and synthesis process. Competencies were then categorized under each objective. A total of 120 competencies were listed. In a limited number of cases (7), the objective itself was rated by the national committees because there were no competencies listed for it. It should be noted that this figure represents 27 less than the list sent to the Maine educators. This was accomplished because the investigator was able to identify, through this analysis, concepts within competency statements which were generalizable. These statements were combined whenever possible when they were concerned with similar knowledge and skills.

After the clustering process, 34 objective statements endured. These were listed, along with the competencies for each, and this document was submitted to the investigator's advisor before the final copy was sent to
the joint members of the A.V.A. and A.I.A.A. Special Needs Committees for evaluation.

The objectives and competencies are listed in this chapter in order to show the total developed list and the relationship among the data gathered for each. It should be noted that information about the recommended timing for training of those competencies not considered essential by Maine educators appears only here.

The list of objectives and competencies includes all competencies found by the examination of the literature and the review process by panels of experts. Some of these competencies were rated "non-essential" by the educational personnel in Maine, but they were retained because it was felt that the members of the national committees might have a different opinion of the appropriateness of these competencies. It was found that the members of these committees did not reject any of the competencies as NOT appropriate. Since this finding was in contrast to the findings from the Maine educational personnel, it was decided to list all the competencies and objectives, with summary data, in this chapter.
Listing of Objectives and Competencies

This section of this chapter provides a listing of the developed objectives and competencies. The objectives and competencies are followed by a series of columns which indicate the data obtained about each. It should be noted that the numbers in parentheses ( ) indicate the number of the competency on the instrument which was mailed to educational personnel in Maine.

The first column on the right indicates the rating of Essential or Non-essential, as determined from the survey data obtained from the educational personnel in Maine.

The second column on the right indicates the reported best timing of the training of this competency. The choices were Pre-service, or In-service. Where there was not enough difference to discriminate (less than 5%), both are noted.

The third column indicates the perceived level of skill needed by the classroom teacher as reported by the joint members of the special needs committees of the American Vocational Association and the American Industrial Arts Association.
The Awareness level was described to the panel of national experts as "Knows about the competency, but does not have/need skill to perform the task." Examples of activities at this level of skill would include reading literature in professional journals; recognizing the existence of handicapping conditions, some knowledge of legislation, and the functions of various educational provisions for handicapped persons within the schools.

The Low level was described to the panel of national experts as "Has the minimal skill/ability regarding the competency to perform the task with the assistance of others." This level of skill would involve membership on pupil evaluation teams, the ability to carry out some prescriptive suggestions from special education consultants, etc.

High level was described to the panel of national experts as "Has the skill/ability regarding the competency to perform the task independently." Examples of this level of skill would include development of individual education plans, providing special functions within these plans, working as a member of a team with other professionals to provide individual special educational activities.
Not appropriate was described to the panel of national experts as "Not necessary for the industrial educator to know about and/or do." These activities would be therefore clearly identified as the responsibility of other educational personnel or personnel from other agencies or professions (social work, medicine, etc.).

Since the number of respondents for this part of the study was small (7), a simple majority is indicated (4 or more). If there was no majority, a line "-" is reported. An example is provided and explained on the following page.
Example:

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Objective 0: The teacher will maintain records (5).

Competencies:

2. The teacher will account for materials. Materials include hardware and software for use in instructional programs. (190)

Explanation:

"Objective 0" was derived from number 5 on the questionnaire sent to the Maine educational personnel. This objective was judged by them to be "Essential" and the preferred timing for training was "Pre-service". It was not rated by the national panel of experts from the A.V.A. and the A.I.A.A. (Objectives were not rated.)
"Competency 2" (under "Objective 2") was derived from number 190 on the questionnaire sent to Maine educational personnel. This competency was judged to be Essential, and the preferred timing of training was In-service. The desired level of skill as rated by the A.V.A. and A.I.A.A. national panel was "Low Level".

The listing of the developed objectives and competencies begins on the next page with the objectives grouped in the diagnosis category.
**DIAGNOSIS**

**Objective I:** Demonstrate knowledge of a screening-referral process for special needs students in secondary programs. (1)

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**Competencies:**

1. Identify learning styles.
   Learning styles include use of perceptual faculties such as visual, hearing, tactile, etc. Styles can be further described in terms of cognitive/psychomotor and verbal/non-verbal. (3)
Objective I:  **--Continued--**

Competencies:

2. Identify learning disabilities. Learning disabilities include visual, auditory, ambulatory impairment as well as emotional and behavioral disorders. Cognitive processes may be impaired by these conditions or as a result of drug therapy related to them. (4)

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   X X

3. Identify learning difficulties. Learning difficulties are caused by both the learner and the environment in interaction. (12)

   X X X
Objective I: -- Continued --

Competencies:

4. Identify personality patterns. Observe student behavior which tends to interfere with other students and make referrals for further analysis. (5)

5. Identify emotional factors. Emotional factors include blatant behavior such as hyperactivity, aggressiveness, withdrawal, etc. Also includes behavior which indicates the presence of emotional tensions, or excessive anxiety. (15)
Objective I: --Continued--

Competencies:

6. Identify reading level of student.
   Reading level can be identified by examining cumulative folders, and should be based on results of accepted reading assessment techniques. Reading level is an indicator of the ability to receive instruction via printed matter. (7) X X ----

7. Identify symptoms of drug use/abuse.
   Symptoms may include physiological conditions, behavioral manifestations, and depression of cognitive functioning. (8) X X ----
Objective 2: Utilize the results of diagnostic instruments and techniques for classification and placement of special needs students in pre- (10) and vocational education (13) programs. (2)

Competencies:
1. Utilize performance-based techniques.
   Performance based testing techniques may include teacher specified (local) performance activities or other more formal measures. (i.e. work samples, use of tools, materials, and processes to perform specified tasks.) (9)
Objective 2: --Continued--
Competencies:

2. Analyze interests and aptitudes. This analysis includes interpretation of the results of standardized instruments such as the Otis, Kuder Preference, etc., as well as personally obtained information from the learner in informal situations. (II) X X X

3. Interpret results of standardized instruments. These instruments include interest and preference inventories as well as aptitude and/or achievement tests. These instruments are generally administered by the guidance or testing department. The results may provide insight and help with motivation and teaching of individuals. (14 ed.) X X X
Objective 2: --Continued--
Competencies:
4. Develop a process and procedure for student selection.
   Based on available information, the industrial educator should select those programs and parts of programs which are appropriate for the individual student's progress.

   (6) X X X

Objective 3: Conduct an analysis of a career cluster.

Competencies:
1. Determine knowledge concepts and general competencies. These knowledges and competencies are general and include mathematical

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   Review By National Committees

   Level of Skill

   X X X
Objective 3: --Continued--

Competencies:
and verbal abilities, as well as specific knowledges required by those working in the career area.

2. Determine specific job skills.
These skills are specific to a selected job within the career cluster. They should include specific operations and the level of skill required in the specific situation.

The standards of performance should be those generally
Objective 3: —Continued—

Competencies:
expected for the selected level
of operative in the career area.

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4. Determine basic aptitudes required.
These aptitudes include the potential and actual readiness to learn and progress in the career area.

Objective 4: Analyze local or regional job market and determine employment opportunities for handicapped persons.

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Review By National Committees

Importance Timing Level of Skill

Not Appropriate Awareness Low Level High Level

(16) X X

(17) X X

(19) X X
Objective 4: --Continued--

Competencies:

1. Conduct and/or utilize a community needs survey.
   The community needs include the known and projected employment opportunities. They should be examined to assess the employment potential for handicapped persons within the community. The survey includes contacting local employers, employment agencies, and social agencies. (18) X X X

PRESCRIPTION

Objective 5: Develop a system for planning programs and services for each handicapped student.
Objective 5: --Continued--

Competencies:

1. Develop local program objectives. These objectives include statements about types of services desired, utilization of facilities, and educational personnel employed at the present or in the future. (31) X X X

2. Develop a composite profile of learning characteristics for special needs students to be served. This profile includes known and projected characteristics of students and prospective students and special conditions which may influence educational planning of programs. (39) X X X
Objective 5: --Continued--
Competencies:

3. Develop cooperative arrangements for team teaching.
   These arrangements include administrative policy making, implementation, and consideration of cross-discipline curriculum approaches for instruction of individuals and groups of students.
   (20) X X X

4. Inform parents of their responsibility for program planning and evaluation.
   These responsibilities include not only the legal rights under current legislation (PL 94-142), but also involvement in an on-going way in the total education of the child.
   (34) X X X
Objective 5: --Continued--

Competencies:

5. Obtain necessary information from parents regarding planning and implementation.
   This information includes relevant facts about the disabilities of the student which may not be obvious in the structured school situation.
   
   (55) X X X

6. Collaborate with other educators.
   Collaboration includes sharing information and expertise regarding the setting and achieving of appropriate educational outcomes. It also includes team teaching, consultation and activity with pupil evaluation teams.

   (44) X X X
Objective 5: --Continued--

Competencies:

7. Utilize information from other disciplines about conditions of the learner:
   Sensory, Physical, Emotional, Social, Cognitive.
   This information may be the result of testing and/or consultation with professionals from the medical or psychological fields. This information should be used at the goal setting stage to develop realistic and individual plans and programs. (53) X X ---
Objective 5: --Continued--

Competencies:

8. Plan modification of facilities and equipment.
   These modifications include appropriate access and utilization for all students and modification for individual students. Equipment modification may include development of special jigs, fixtures, controls, guards, etc. (47) X

9. Develop alternative methods of: material handling, storage, and clean-up activities. The alternative methods must be appropriate for handicapped individuals and non-handicapped. Includes considerations of
Objective 5: --Continued--

Competencies:
accessibility, use of aids for handling materials, scrap, and various tools.

Objective 6: Refer special needs students to suitable resource personnel when appropriate.

Competencies:
1. Recommend students use these services when necessary. Services include medical, psychological, and educational counseling. These services should be used in a unified approach, with communication
Objective 6: --continued--

Competencies:

2. Identify resource people to help prepare instructional materials. Curriculum consultants include educational personnel (media specialists, special educators, and counselors) as well as resource people from the medical and psychological fields. Representatives from industry and employment agencies may be included also. (56) X X X

3. Aid in guiding special needs students to develop career objectives consistent with

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Objective 6: --Continued--

Competencies:

abilities and interests.
(Achievable with handicapping conditions.)
Collaborate with guidance personnel, educational measurement personnel, and persons familiar with career areas to provide a realistic assessment of capabilities and limitations of the learner. Based on this assessment, guide in the development of career objectives.

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Objective 7: Specify instructional programs for special needs students.

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Objective 7: —Continued—

Competencies:

1. Determine relevant occupational cluster information.
   Based on the analysis of a career cluster, specify the understandings, skills, and attitudes required for an individual learner. Indicate which of these is possible within the industrial education program.

2. Direct students into alternative programs.
   Based on a realistic appraisal of the capabilities of the learner, and previous performance in actual educational programs, a change in educational goals
Objective 7: —Continued--

Competencies:

may be indicated. This re-direction should be done through the student's pupil evaluation team.

3. Utilize results of tests to plan instruction. Results of tests may be available in the student's cumulative file, or as a result of specific request by teachers or other professionals.

4. Prescribe remedial math activities.

Based on deficiencies encountered, remedial math activities.

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(38) X X X

(35) X X
Objective 7: --Continued--

Competencies:

activities may be suggested and coordinated through the pupil evaluation team. These activities may require the use of specialists.

5. Prescribe remedial reading activities.
Based on deficiencies encountered, remedial reading activities may be suggested and coordinated through the pupil evaluation team. These activities may require the use of specialists.

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(36) X X X
(37) X X X
(66) X X X
Objective 8: Select or develop modules or units of instruction appropriate for special needs students. (23) X X

(25) X X

Competencies:
1. Adopt or adapt instructional materials.
   Instructional materials include texts (of varying reading levels), A.V. materials of various types, and teacher-made materials. These materials should be coordinated with the needs and abilities of the student. (33) X X X

Maine Analysis

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Review By National Committees
Objective 8: --Continued--

Competencies:

2. Identify necessary special services. Special services may include transporation, transcribing, recording, and interpretation (signing, etc.) services both to and from the school and within the industrial education facility or lab. (43) | X | X |

3. Organize a unit of instruction on career education. Include opportunities for self-assessment, career planning, and exploratory activities. Guide student in development of long and short range career objectives. (32) | X | X | X |
Objective 8: --Continued--

Competencies:

4. Incorporate inductive and deductive thinking into curriculum. Provide time and activities which allow for inductive approaches to problem solving by students. Also provide opportunities for descriptive activities and consequent analysis.

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Objective 9: Design instructional strategies.

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Objective 9: --Continued--

Competencies:

1. Recognize instructional options. Instructional options include active, interactive, and reactive approaches to the relationship between the teacher/manager and the learner. Options also include varying instructional activities to accommodate different learning styles. (26) X X X

2. Sequence tasks to conform with learning styles, pace, and inferred potential of students. Sequencing may include the setting of additional enabling objectives, or additional activities of a remedial or review nature.
Objective 9: --Continued--

Competencies:
Sequencing implies a developmental growth in that additional skills are built on pre-requisite skills of a lower order. (51) X X X
(79) X X X

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Objective 10: Identify the cognitive, affective, and psychomotor level of each student in order to prescribe an individual education plan. (24) X X

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Objective 10: --Continued--

Competencies:

1. Use the results of achievement tests and other assessments to plan instruction.

Prior to specifying instruction, the student's present level must be ascertained. Assessment activities include: Obtaining available information from cumulative files, and collecting additional information by means of standardized formal assessment, general achievement tests, formal diagnostic tests—also informal assessment—criterion (61) X X X

referenced tests, diagnostic (35) X X X

teaching, systematic observation. (28) X X X
Objective 10: --Continued--

Competencies:

2. Understand and follow state and federal guidelines. These guidelines are found in the state plan for special education, the state plan for vocational education, and the federal laws (94-142, 94-482, etc.)

   

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3. Establish performance objectives based on tasks in occupations. Using a task analysis or other referent, develop the needed on-the-job competencies for a given occupation. Those competencies which are general for an operative in the occupation should be listed.

   

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Objective 10: --Continued--

Competencies:

4. Develop the Individual Education Plan.

The Individual Education Plan should include at least:
- Assessment of the pupil's current educational status,
- Goals - for a minimum of one year,
- Required professional and instructional services,
- Required facilities, materials, and media,
- Educational ancillary services,
- Essential out-of-school services,
- Evaluation methodology.

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Objective II: Translate statements about physical and sensory abilities and limitations into statements about instructional alternatives. (27) X X

Competencies:
1. Identify educational goals in terms of the student's abilities and develop long range educational options. Educational goals include the possibility of additional educational attainment beyond the extent of the secondary program, also additional training outside the educational institution. (OJT, etc.) Long
Objective II: Continued—

Competencies:

range educational options
include additional education,
training, and/or redirection
to other career areas.  (49 ed.)

2. Prioritize educational objectives.
Objectives are prioritized
to allow progress toward
longer range educational
goals. The relationship
between enabling and
terminal objectives assists in
this process.  (50)

3. Break down long range goals into
sequences of enabling goals.
Objective II: --Continued--
Competencies:
Enabling goals should include short term goals (must be included in IEP) and longer range goals.

4. Write and develop objectives for mainstreamed special needs students. (Consider entry level of student.) These objectives should be behavioral in nature and able to be evaluated. They are often developed as a part of the IEP.

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TREATMENT

Objective 12: Be aware of student's interaction with peers, teachers, parents, and others. (64) X X

Competencies:
1. Assist student in interpreting his own behavior. Provide feedback to the student regarding his interaction within the social context of the educational program. Encourage cooperative and productive steps to improve that interaction in conjunction with counseling services or PET functions. (65) X X

Objective 13: Select and utilize appropriate techniques for instruction.
Objective 13: --Continued--
Competencies:

1. Use small group instruction.
   Include small group instruction when appropriate. Match this procedure with educational outcomes for both handicapped and non-handicapped students.  
   (68) X X X

2. Use peer instruction techniques.
   Utilize peer interaction by teaming handicapped students with other students, handicapped and non-handicapped, where efficient for learning.  
   (69) X X X

   Laboratory activity should be realistic and success oriented.
Objective 13: --Continued--

Competencies:
Modifications of facilities and equipment as well as procedures may be necessary. Laboratory experience includes activities required for organization of the laboratory environment and actual lab work, clean-up, etc.

(70) X X X

(74) X X X

4. Demonstrate ability to use materials, tools, and processes. Utilize the demonstration method where appropriate and modify delivery techniques where necessary for effective results with handicapped learners. Include demonstrations
Objective 13: --Continued--

Competencies:
of equipment/facility/process adaptations for special needs students. May include the development and use of special visuals, mirrors, video recordings, etc. (86) X X X

5. Employ questioning. Utilize questioning and allow sufficient time for expression of ideas. May be used as an inductive (exploratory) approach. (83) X X X
Objective 13: --Continued--
Competencies:
6. Use role playing activity.
Role playing may include roles
normally included in occupational
settings, and may contribute to
career education at the exploratory
level. (84) X X X

7. Develop student self-reliance and
resourcefulness. Pose problem
solving situations; design for success.
Allow sufficient time and effort for
student solutions and trial. (74) X X
(71) X X

Maine Analysis
Importance Timing Level of Skill
Essential Non-Essential Pre-Service In-Service Both

Review By
National Committees
Not Appropriate Awareness Low Level High Level

246
Objective 13: --Continued--

Competencies:

8. Establish and demonstrate safe use, storage, and maintenance of tools and equipment. Include any modifications of facilities and/or procedures. Include handicapped in normal maintenance activities. (77) X X

Objective 14: Effectively build a series of educational experiences which lead to a better understanding of career development.
Objective 14: --Continued--

Competencies:

1. Include self-awareness activities. Activities include exploratory activities within the lab. as well as use of lists of industrial tasks, standards, limits, etc. (72) X X X

2. Develop career awareness and provide career orientation. Include information from pamphlets, films, guest speakers, and other resources. Pattern work in the industrial education lab. to provide orientation type experiences. (72) X X X

3. Develop career decision making skills. Include or make available information about career requirements, and options
Objective 14: --Continued--
Competencies:
for advancement and/or change.
Encourage long range planning as well as shorter term planning.                     
(72) X  X

Objective 15: Modify and utilize equipment, materials and instructional methodology to facilitate the learning of special needs students.                      
(87) X  X
(88) X  X
(89) X  X

Competencies:
1. Formulate instructional strategies and techniques to help learning of special needs students.
Objective 15: --Continued--
Competencies:
  Options include: Direct instruction, Inquiry-discovery methods, Group investigations, Precision teaching, Instructional games, Creativity-problem solving, Psychoeducational diagnostic-prescriptive procedures, Peer or cross-age tutoring, Developmental teaching. (62) X X X
  (63) X X X

2. Utilize appropriate media equipment and materials to improve sensory stimulation.
Options include commercial and teacher-made visuals, auditory recordings, and tactile devices such as models, cutaways, etc. (73) X X X
Objective 15: --Continued--

Competencies:

3. Present a lecture utilizing non-verbal visuals and related techniques to improve communication. Options include media devices, special services such as signing, and demonstrations. (81) X X

4. Incorporate appropriate business, OSHA, and industrial manuals in curriculum. Encourage student use of these materials to determine rules, regulations and technical information and specifications. (80) X X (85) X X

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Objective 16: Develop positive reinforcement techniques to motivate and reinforce the learning process. Include the usual rewards for desired performance as well as the use of behavior substitution for undesired behaviors. (78) X X

Objective 17: Initiate activities to further the social development of handicapped persons and others.

Competencies:
1. Set the development of positive social skills as an objective. Include appropriate interaction, sharing, and helping as desired results of the
Objective 17: — Continued —

Competencies:

development of social skills.

2. Encourage group processes and reward group contributions as appropriate. Include group projects, teams, etc. Emphasize acceptance of all students in activities.

3. Organize a student club to enhance social development in formal and informal situations such as clubs, etc. (76)

Objective 18: Inform school officials of responsibilities regarding placement and supportive
Objective 18: --Continued--
services for handicapped learners. Include changing, continuing needs of the student/teacher in the industrial education environment. Communication may involve a request for a PET meeting(s). (75) X X ----

NURTURE
Objective 19: Extend and implement programs for individual students. Give attention to personal needs of the student. (90) X X
(123) X X

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Objective 19: --Continued--

Competencies:

1. Consult with supportive teachers.
   Supportive teachers include reading, mathematics, and other teachers who are knowledgeable about remedial programs, also special education teachers and additional members of the student's PET.  

2. Conduct conferences with individual students.
   Conferences include sessions to facilitate the setting of objectives, evaluate progress, redirect process, etc.
Objective 19: --Continued--

Competencies:

3. Establish a student tutoring system. Personnel include aides, personnel from other subject areas within the school, social agencies, and peers. (95)  

4. Conduct successful home visitation and involve the family as a source of primary reinforcement. Actively seek parental input and support, may occur as a result or outgrowth of PET activities. (96) (97)  

5. Participate in student-parent conference. Student-parent conferences may occur as part of the PET process, or may be a
Objective 19: Continued

Competencies:

part of the development and delivery of the IEP. (112) X X X

6. Plan and coordinate on- and off-campus on-the-job programs. Planning and coordination include cooperation with existing programs and coordination personnel, if available. Work-study and other on-campus or school related programs may be organized. (100) X X ——

7. Aid special needs students with work permits. Aid may consist of simply helping the student with the formal aspects of
Objective 19: --Continued--

Competencies:
application, or may involve
assessment of strengths and
weaknesses which relate to the
proposed job situation.  (109)  X  X  X

8. Help the individual develop a
positive attitude about self.
Recognize the student as a
person with strengths and
weaknesses, as well as abilities
and disabilities.  (101)  X  X  X
(105)  X  X  X

9. Encourage the student to express
ideas, etc.
Allow and make provision for student
input into the organization,
Objective 19: --Continued--
Competencies:
management, and evaluation of his or her individual program. (120) X X X

10. Provide information about further education and/or advancement for the special needs student. Information may include descriptive literature about further educational experiences or opportunities, or requirements for advanced positions in a given job situation. (106) X X ----

II. Aid student in adjusting to his/her disability.
Develop a positive attitude in the learner by emphasizing the abilities
Objective 19: --Continued--
Competencies:
rather than the disabilities. Be supportive of exploration of new areas but be realistic. (122) X X X

Objective 20: Establish and maintain an appropriate group learning environment which can provide success for special needs students and others.

Competencies:
1. Arrange guided field experiences. Special attention should be given to providing for students ambulatory and other physical handicaps. Arrangements should be checked out with the host prior
Objective 20: --Continued--

Competencies:

to scheduling these field experiences.  

2. Moderate student discussion of sensitive issues. 
Use class discussion as a vehicle to help resolve "crisis" situations:
- Discuss all sides of the issue
- Be sure all have an opportunity to contribute
- Make whatever decision is necessary (intervention)
- Communicate back to the group

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(91) (93) X X X
Objective 20: --Continued--

Competencies:

3. Stimulate learning through brainstorming, buzz groups, and question box techniques. Seek input into the planning and execution of the learning process. Maintain non-threatening means of communication.

4. Locate support for those with personal adjustment problems. Support personnel may include guidance personnel, school psychologists, personnel from social agencies, etc.

5. Develop procedure for job relocation or rotation in the laboratory.

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Objective 20: --Continued--

Competencies:
May include responsibilities within the laboratory such as tool room responsibilities, clean-up duties, etc. Emphasize real world responsibilities as far as possible. (99) X X X

6. Provide success producing situations. Engineer at least some activities for no failure. In group learning situations, change membership of groups when advisable. (III) X X X

7. Be sensitive to and use behavior modification and other adjustment approaches.
Objective 20: --Continued--

Competencies:
Use techniques such as behavior substitution to extinguish undesired behavior and to reinforce desired behavior. (117) X X

8. Define operating rules and responsibilities of both the learner and the teacher-manager. Define the role of the teacher-manager and allow for student control of matters which are appropriate. (118) X X

9. Establish the order of business each day. Determine at least the beginning and termination routines for each day.
Objective 20: --Continued--
Competencies:
Include communication of expected outcomes for the day. (119) X X X

10. Provide opportunities for student to achieve recognition and receive personal group approval. Opportunities include student personnel systems, class meetings when advisable, group meetings when useful for group functioning. (121) X X X

Objective 21: Establish and maintain appropriate attitudes.

Competencies:
1. Encourage the establishment of appropriate attitudes of regular students
Objective 21: --Continued--

Competencies:

towards special needs students.
Utilize activities which emphasize the client-centered approach rather than crisis-intervention. Include pre-sensitization where possible before actual teaching intervention. (104) X X X

2. Encourage the establishment of appropriate attitudes of special needs students toward regular students. Strengthen the concept of self-worth and value within the learning process. Recognize that all people have strengths and weaknesses - emphasize strengths. Deal with attendant frustration in positive ways.

Review By National Committees

Maine Analysis Importance Timing

Essential Non-Essential Pre-Service In-Service Both

Level of Skill

Not Appropriate Awareness Low Level High Level
Objective 21: --Continued--

Competencies:

3. Encourage the special needs student to develop positive attitudes toward self and work. Strengthen the concept of self-worth by providing activities which can be successful yet are challenging. Allow the special needs student to grow, but be sure to include some success.

(105) X X

4. Encourage regular students to develop positive attitudes towards self and work.

Same as above.
Objective 21: --Continued--
Competencies:
5. Encourage appropriate teacher attitudes by conducting teacher-teacher conferences. Make yourself available for consultation regarding successes and problems encountered in the teaching/learning process with handicapped learners. Share methods, strategies, etc. which will help others.

Objective 22: Establish and modify an appropriate physical environment.

Competencies:
1. Reorganize physical floor plan
Objective 22: --Continued--

Competencies:

of classroom/laboratory. Consider architectural accommodations such as adequate provision for access, entry, mobility. Also consider the possibility of special furniture in reactive and interactive areas.

2. Organize instructional environments which encourage exploratory activities. Employ inductive methods of problem solving, encourage experimentation.

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Objective 22: --Continued--

Competencies:

3. Execute emergency procedures in a calming manner in the event of a seizure, fatigue, or excessive emotional reaction. Utilize student self-organization to the extent possible to help manage the on-going process (Lab. or Classroom) while performing individual intervention. (115) 

4. Supervise and coordinate aides, tutors, etc. Perform the required management procedures - filling out reports, etc. Involve these personnel in the environment as a viable part by encouraging participation to the extent possible. (116)
Objective 23: Establish and maintain a working relationship with industry and employers.

Competencies:
1. Assist employers and supervisors in acquiring techniques to enable them to work with special needs students.
Act in the role of an available consultant and refer employers and supervisors to appropriate agencies and other resources when possible.
   (107) X X X

2. Plan and coordinate on- or off-campus on-the-job instruction.
Cooperate with coordinators when possible - offer consultant services when practical.
   (100) X X X
   (113) X X X

Review By
Maine Analysis
Importance Timing
Essential Non-Essential Pre-Service In-Service Both

National Committees
Level of Skill
Not Appropriate Awareness Low Level High Level

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EVALUATION

Objective 24: Design a system for monitoring student achievement on a regular basis.

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<td>1. Use a variety of performance-based techniques. Measure understandings, skills, and attitudes through student performance. Utilize formal skill evaluation exercises when available and construct appropriate ones for in-class use. Systematic observation may be used to provide input for affective assessment.</td>
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(124) X X
(130) X X
(125) X X

272
Objective 24: --Continued--
Competencies:

2. Maintain student records in an objective manner. Records include objectives achieved, cognitive measures, etc. Seek and use student input in the evaluation process. (126) X X X

3. Evaluate pupil performance at each objective level. The evaluation contains information about the quality of performance as well as noting the fulfillment of the objective. It is a measure of readiness to continue. (127) X X X
Objective 24: --Continued--

Competencies:

4. Conduct a system of reporting student progress to student and parents. Utilize the system provided by the educational system. If it is not adequate to indicate progress within the individual student's program, devise additional methods of reporting progress (such as a narrative report, etc.).

   (131) X X X

5. Evaluate particular teaching process and strategy as related to student performance and modify. Based on the performance of individuals in the teaching/learning situation, critically
### Objective 24: --Continued--

**Competencies:**
- Examine the process and strategy and modify as needed. Consult with other professionals such as special educators when appropriate. Seek student input. (128) X

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#### 6. Assess the ability of the individual to modify his/her behavior.
Consider factors which limit and enhance the ability of the individual to succeed; prescribe activities which encourage positive change. Utilize student input. (132) X

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X
Objective 25: Organize and/or conduct a local program review.

Competencies:
1. Utilize follow-up data from students who leave or graduate to improve the program. Collect data regarding employment and/or other activities of graduates and those who leave the program. Ask for feedback about strengths and weaknesses, suggestions, etc.

2. Share program strengths and weaknesses with other professionals.

| Objective 25: Organize and/or conduct a local program review. | (129) | X | X |

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| 2. Share program strengths and weaknesses with other professionals. |
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| Importance | Timing | Level of Skill |
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Maine Analysis

Review By National Committees

Level of Skill

*Note: The table above indicates the importance, timing, and level of skill for the competencies listed.*
### Objective 25: --Continued--

**Competencies:**

Based on follow-up data and process evaluation, communicate with other professionals to share ideas, strategies, etc. (139)  

3. Establish and utilize advisory groups.  
   Utilize advisory groups to enhance value of the program by seeking input from employers, professionals in agencies which work with handicapped, and others. (140)

### Objective 26:

Develop and use a filing system to accommodate student records. (137)
Objective 26: --Continued--
Competencies:
1. Prepare records of program and development as required by law. Records include accounting for monies spent, materials expended, etc. May also include specific testing and results, changes made and funded under specific laws, etc.

   (138) X X X

2. Prepare records of students and development as required by law. Records include specific evaluations for use by PET, as well as others.

   (138) X X X
Objective 26: --Continued--

Competencies:

3. Provide for a system of authorization for the release of information from student records.
Provide for the preservation of rights of students and others to privacy in accordance with federal laws.

Objective 27: Develop public relations literature. (134) X X

Competency:

1. Devise methods of interpreting special needs and education programs to: parents, teachers, administrators, and community groups.
Objective 27: --Continued--
Competency:
Methods may include open-house activities, press releases, projects with high visibility within the community, etc. A written statement of goals and objectives should be prepared and made available to interested parties. (135) X X ----

Objective 28: Obtain public support for vocational programs for special needs students. (142) X X

Competency:
1. Conduct an employer appreciation program.
Objective 28: --Continued--
Competency:
Program may be combined with
recognition of graduates, open-
house activities, etc. Provides
contacts for graduates and others.

<table>
<thead>
<tr>
<th>Importance</th>
<th>Timing</th>
</tr>
</thead>
<tbody>
<tr>
<td>Essential</td>
<td>Non-Essential</td>
</tr>
<tr>
<td>X</td>
<td>X</td>
</tr>
</tbody>
</table>

Objective 29: Conduct a parent-teacher conference.

Competency:
1. Utilize the parent-teacher conference to enhance the educational process for the individual.
   Meet with both parents if at all possible. Assume good intentions by parents. Listen to parents.
Objective 29: --Continued--
Competency:
 Consider all alternatives with parents. Expect criticism. Don't expect too much from one conference. 

(133) X X X

OTHER
Objective 30: Communicate with objectivity and specificity with other professionals. Relate facts and specifics, not opinions unless they are requested and are clearly labeled as professional opinions. Keep copies of all written communication.

(143) X X X
**Objective 31:** Demonstrate a commitment to teaching. 
Become active in state, local, and national professional organizations. 
Become active in professional groups which deal with specific subject matter areas. Seek additional training; in-service, extension coursework, etc. 

<table>
<thead>
<tr>
<th>Importance</th>
<th>Timing</th>
<th>Level of Skill</th>
</tr>
</thead>
<tbody>
<tr>
<td>Essential</td>
<td>Non-Essential</td>
<td>Pre-Service</td>
</tr>
<tr>
<td>X</td>
<td>X</td>
<td></td>
</tr>
</tbody>
</table>

(144) X X X

**Objective 32:** Demonstrate knowledge of the ethical procedures of a professional.
Objective 32: --Continued--
Be familiar with the codes of ethics published by professional organizations (NEA, etc.). Subscribe to and support these codes.

(145) X X X

Objective 33: Keep abreast of professional developments, societal needs, and technological advances. Join and become involved in professional organizations, technological societies, etc. Be active in the community.

(146) X X X
Objective 34: Research current trends in business and industry, (e.g., Technological practices, employment practices, and training needs, etc.)
Strengthen ties with local societies and organizations. Be aware of national trends by membership in national organizations, etc. (147)  

<table>
<thead>
<tr>
<th>Importance</th>
<th>Timing</th>
<th>Level of Skill</th>
</tr>
</thead>
<tbody>
<tr>
<td>Essential</td>
<td>Pre-Service</td>
<td>Not Appropriate</td>
</tr>
<tr>
<td>Non-Essential</td>
<td>In-Service</td>
<td>Awareness</td>
</tr>
<tr>
<td>Both</td>
<td></td>
<td>Low Level</td>
</tr>
</tbody>
</table>

X
Based on this presentation of the objectives and competencies, it should be noted that 72 of the original competencies were considered essential by the educational personnel in Maine and were considered appropriate for training at the High skill level as suggested by the A.V.A. and A.I.A.A. committee members.

There were 32 of the competencies on the Maine instrument which were rated Non-essential by the Maine educational personnel, but were recommended for the High skill level by the national committee members. There were four competencies rated Essential by the Maine educational personnel and recommended for the Low level of skill by the national committees. More of the competencies rated Essential by the Maine educators were recommended for the Awareness level, and six were not clearly recommended for a single particular level (no majority of the national experts). Ten competencies were rated Non-essential by the Maine educators and were not clearly recommended for any particular level of skill. Ten were rated Non-essential and rated at the Low level of skill and one rated Non-essential was recommended for the Awareness level of skill. Table 25 shows the
relationships of the ratings by the Maine educators and the panel of national experts from the A.V.A. and A.I.A.A. Committees for Special Needs.

It should be noted that the total number of competencies from the Maine instrument is not the total which was rated by these national committees because twelve of these were used directly in the formulation of objectives for the instrument sent to these experts.

Based on the discussion of these results, there are concerns regarding the non-acceptance by Maine educators of those competencies judged to be needed at a high level of skill by the national panel of experts. While this discrepancy might be explained by the differences in format of the list of objectives and competencies sent to the members of the national committees, differences in their education and experience may have influenced these ratings.
<table>
<thead>
<tr>
<th>Maine Educational Personnel Ratings</th>
<th>Skill Levels Recommended by National Committees</th>
<th>Diag-nosis</th>
<th>Prescrip-tion</th>
<th>Treat-ment</th>
<th>Nurse-education</th>
<th>Evaluation</th>
<th>Other</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>Essential</td>
<td>High</td>
<td>3</td>
<td>20</td>
<td>17</td>
<td>18</td>
<td>9</td>
<td>5</td>
<td>72</td>
</tr>
<tr>
<td>Essential</td>
<td>Low</td>
<td>1</td>
<td>2</td>
<td>0</td>
<td>1</td>
<td>0</td>
<td>0</td>
<td>4</td>
</tr>
<tr>
<td>Essential</td>
<td>Awareness</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>Essential</td>
<td>Undetermined</td>
<td>2</td>
<td>1</td>
<td>1</td>
<td>2</td>
<td>0</td>
<td>0</td>
<td>6</td>
</tr>
<tr>
<td>Non-essential</td>
<td>High</td>
<td>6</td>
<td>11</td>
<td>2</td>
<td>11</td>
<td>2</td>
<td>0</td>
<td>32</td>
</tr>
<tr>
<td>Non-essential</td>
<td>Low</td>
<td>2</td>
<td>6</td>
<td>1</td>
<td>1</td>
<td>0</td>
<td>0</td>
<td>10</td>
</tr>
<tr>
<td>Non-essential</td>
<td>Awareness</td>
<td>1</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>1</td>
</tr>
<tr>
<td>Non-essential</td>
<td>Undetermined</td>
<td>1</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>3</td>
<td>0</td>
<td>10</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td></td>
<td>16</td>
<td>41</td>
<td>23</td>
<td>36</td>
<td>14</td>
<td>5</td>
<td>135</td>
</tr>
</tbody>
</table>

Note: The total number of competencies is 135, not 147 because 12 competencies from the Maine instrument were directly utilized in the development of objectives and were not rated by the national committees.
Delivery System for the State of Maine

The purpose of this section of the chapter is to present a description and analysis of some options for delivery of industrial education services in Maine. It will describe options for delivery of teaching materials which could be developed around the knowledge and skills identified in this study. The options discussed in this section will be consistent with what is presently in place within Maine. Additional recommendations for modification of the delivery system to enhance the pre- and in-service training of industrial educators of handicapped individuals will be given in Chapter VI.

The emphasis of this study was on developing materials which would provide a basis for pre- and in-service training for industrial education personnel. Accordingly, objectives were developed to provide these personnel with the skills necessary for effective instruction of handicapped individuals in regular classes. The organization of these materials was modular in form and included a series of steps in a recognized system of teaching. These steps or stages in the teaching-learning process: prescription, diagnosis, treatment, nurture, and
evaluation, were utilized in the organization of the materials so that they could be used as components for the development of pre- or in-service teacher education activities.

It should be noted that the Department of Industrial Education and Technology at the University of Southern Maine is the only teacher education program in industrial teacher education in Maine. Certification of teachers in industrial education within Maine is offered through these methods: program certification, reciprocity of certification with certain states, and by transcript evaluation by the State Department of Education and Cultural Services.

Within the pre-service component of teacher education, inclusion of additional knowledge and skills for the education of handicapped learners would appear to be possible in two ways. The first method would be that of infusion of developed competency-based materials throughout the entire program of industrial education courses offered at the undergraduate level. This would include infusion of the appropriate skills and knowledge
in methodology courses as well as in the various technological areas of the curriculum for prospective teachers. This approach would allow for utilization of these competencies throughout the student's field-based experiences where appropriate.

The second method of including these materials would involve the development of a specific course or courses which would fit into the regularly structured teacher education program within the Department of Industrial Education and Technology. The process for this option would include the development of the initial course outline, application for permission to offer it as an "experimental" course, refinement of the course, and finally submission for approval for inclusion in the catalog of regular offerings. The recommendation to make it a required course would be made by the program faculty and approval would be sought from the Cabinet of the College of Education. The Cabinet of the College of Education must approve all program changes.
The process for inclusion of these training activities in on-going in-service programs could be different. Courses or segments of courses for education of industrial education teachers of handicapped learners could be offered through the in-service staff development function of the Industrial Education Program with approval of the program faculty.

The Department of Industrial Education and Technology presently offers an organized program of systematic individual professional growth. These offerings are coordinated through the Coordinator of In-service Industrial Education at the Gorham Campus of the University of Southern Maine.

The program of Systematic Individual Professional Growth is based on the determination of professional competency needs and methods of attainment. The program offers three separate or combined delivery systems to achieve these identified professional needs of individuals throughout the state. Courses, workshops, and self-directed study are all coordinated to enhance the competencies of individual industrial educators.
By participation in the Systematic Individual Professional Growth program, an individual can earn academic credit in some cases and "Continuing Education Unit" in others. While "Continuing Education Units" are not acceptable credit within the university programs, they are acceptable to fulfill the periodic re-certification requirements within Maine. The academic credit offered through this state-wide delivery system is coordinated through the University of Maine, and can be used to fulfill requirements for undergraduate or graduate degrees if appropriate to the program of study.

Specific workshops and courses are typically scheduled as a result of receipt of a request from a local school system, or other group of individuals; as a part of an on-going program for individuals seeking a degree; or by contract with an educational agency. The self-directed study option is open to individuals upon application and may be used to fulfill certain parts of the undergraduate program in Vocational/Technical Education. This option includes individual work with developed educational materials and supervision by identified resource personnel from local areas and from
the university. These personnel from local areas are identified through the Office of In-service Vocational-Technical Education and serve as resource people for the individuals in the self-directed study option. Final evaluation and/or supervision of self-directed study activities is done by university personnel. Record keeping for the individuals involved is also done by the university.

Another option for delivery of developed materials based on competencies developed by this study would involve the development of a course or courses at the graduate level. The University of Southern Maine offers a Masters of Industrial Education which is largely directed toward teachers in the state who wish to enhance their mastery of teaching skills and procedures. The developed courses could form a "core" for a specialization in the area of Special Industrial Education. While this would probably not result in the offering of a separate degree program a series of courses could be provided to assist practicing industrial educators to develop the identified knowledge and skills. This, in turn, could lead to the promotion of industrial education for
handicapped individuals in local school systems throughout Maine.

The relationships among and between the parts of the present options for delivery systems are shown in Figure 3.

![Diagram of Systematic Individual Professional Growth Plan]

**FIGURE 3**
Systematic Individual Professional Growth Plan

It should be noted that Figure 3 depicts the Systematic Individual Professional Growth Plan as it presently exists. This system is used by the In-service component of the Department of Industrial Education and Technology. However, the delivery systems shown are not able to be utilized to fill every need of all programs offered through the Department. At present, for example, there are no provisions for use of the Self-Study option.
to fulfill the needs of undergraduate Industrial Arts Education majors. The undergraduate Industrial Arts Programs, both teaching and technology, do not include this option for the fulfillment of requirements of the program. On the other hand, the Vocational Teacher Education program does include this option for many required courses.

It should also be noted that the dotted line between Workshops, Self-Directed Study, and Academic Credit indicates that this option is available only for certain courses, generally in the Vocational Teacher Education program or the Vocational Technology program.

Summary

Chapter V has presented a list of objectives and competencies developed by this study. It has presented summary data about each of these objectives, as obtained from educational personnel in Maine, and from the joint members of the American Vocational Association and the American Industrial Arts Association Committees for Special Needs. Also included in this chapter is a description of the present delivery system options and the Systematic Individual Professional Growth Plan as utilized by the Department of Industrial Education and Technology at the University of Southern Maine.
Chapter VI presents a summary of the study, the conclusions of the study, and the recommendations of the study. Recommendations are included for educational practice and further research as well as for specific implementations of the objectives and competencies developed by this study.
Chapter VI presents a summary, the conclusions, and recommendations of the study. It also contains implications of the study for industrial teacher education in Maine.

Summary

The purpose of this study was to identify and verify competencies and to develop a referent for development of curriculum activities for industrial education personnel. It identified appropriate competencies from the literature for industrial teachers of handicapped learners. These identified competencies were verified by means of a survey instrument sent to professionals in Maine. The competencies were then clustered and objectives suitable for the development of teacher education specifications were identified. These objectives and competencies were then examined by a national panel of professional educators involved with education of special needs students in industrial education. The
process used to conduct the study is described in more detail below.

The review of the literature formed a basis for establishing the need for training of industrial educators who teach handicapped learners in their regular classes. The review included examination of other efforts in various states, the extent and provisions of federal and Maine legislation, the suitability of a competency based approach for teacher education for industrial teachers of handicapped learners, and specific studies involving competencies for industrial teacher education.

The review of the literature found there was a need for training for industrial educators so that they could include handicapped learners in their programs. The need for this education has been reinforced by federal legislation which provided for total educational opportunities for handicapped learners (including industrial education). Legislation at the state level in Maine and other states supported and amplified the federal legislation.

When studies and projects dealing with industrial education for handicapped learners in other states were examined, they were found to be diverse, both in methodology and in areas of concentration. It was
decided to develop a list of competencies which would be compatible with a specific teaching model and a form of clinical teaching model was adopted for this study. The parts of this model were: Diagnosis, Prescription, Treatment, Nurture, and Evaluation. Accordingly, studies which were competency-based and compatible with this clinical teaching model were examined. The examination of these competency-based studies included a review of the research methodology used in the initial generation of this list of competencies. Based on evaluation of the competencies developed and research methodology utilized, five of the initial twelve competency lists were used as a basis for generation of a list of competencies for this study.

The initial list of competencies, containing 283 entries, was critically examined by a panel of experts who were familiar with industrial arts, vocational education, and special education. These experts were practicing educators in various institutions and agencies in Ohio, and were experienced in the subject matter of these educational areas. The examination helped clarify some items and reduced duplication. The resulting list of competencies, 159 in number, was screened by a panel of teacher educators involved in industrial technology
education and special education. Some additional duplications were removed and some items were changed. The resulting list of 147 competencies and the research procedures proposed for the study were submitted to The Ohio State University Research with Human Subjects Committee and approval was obtained to conduct the study and use these competencies in a survey instrument in the state of Maine.

The instrument was developed based on the reviewed competencies, and this instrument was mailed to the total population of industrial educators at the junior and senior high school levels in Maine. It was also sent to the appropriate building administrator of schools, which included industrial education programs and to those individuals identified by the Maine Department of Education and Cultural Services as being involved in vocational programs for handicapped and disadvantaged learners. These educational personnel were asked to rate each competency as essential, nice to know, or not essential, based on their teaching experience. In addition, these educational personnel were asked to indicate the best time to receive training for each competency. Choices included Pre-service, In-service, and Other. Based on the response of these educational
personnel, (total responses including unusable responses-332 out of 819, or 40.5%), the competencies were rated as "essential", or "non-essential" (including those selected as Nice to Know). The preferred timing of training was rated as "Pre-service", "in-service", or "both". The "both" rating was assigned to a competency when returns indicated less than 5% difference of overall choice between pre- and in-service.

Of the 147 competencies on the survey instrument, 96 were rated by 50% or more of the respondents as "essential". There were 51 which were considered "non-essential" by the educational personnel in Maine. "Pre-service" was selected as the preferred time to receive training for 53 competencies, while "in-service" was selected for 66 competencies and "both" was assigned for 28 competencies.

The competencies were reorganized into 34 objectives which described what industrial education teachers should know and be able to do. This was done to provide a basis for the development of teacher education activities for pre- and in-service education. The objectives were developed by clustering the original 147 competencies into groups and identifying 34 broader based behavioral
statements which were considered suitable for teacher education activities. The identification of these 34 objectives was done with reference to the works of Tyler (1950) regarding sources of curriculum materials, Popham and Baker (1970) regarding the use of behavioral materials in instruction, and the works of Mager (1962, 1967) and Gagné (1965a, 1965b) among others for support of the behavioral nature of objectives. Throughout this process, the major organizers of the clinical teaching model were retained.

The list of objectives and competencies was then evaluated by an expert panel comprised of the seven joint members of the American Vocational Association (A.V.A.) and the American Industrial Arts Association (A.I.A.A.). These experts were asked to indicate the desired level of skill for the classroom teacher for each of the competencies listed with the objectives. The choices provided were listed as "High Level", "Low Level", "Awareness", and "Not Appropriate".

All seven joint members responded. None of the competencies was rated by a majority as not appropriate. The high level of skill was suggested for 92 competencies while the low level was suggested for 12, and one was suggested for the awareness level. In 15 competencies,
these experts were divided and no single level was suggested.

The national panel of experts and the Maine educational personnel were in agreement that 76 of the competencies were essential for the skill development of industrial education teachers of the handicapped. However, 43 of the remaining competencies judged by the national panel as being essential were perceived as non-essential by Maine educators.

The resulting list of objectives was reported along with an indication of the importance, preferred time for teaching, and level of skill in Chapter V. These objectives and competencies are believed to have face or content validity by nature of the process of development and evaluation. They should serve as a referent for further development of teacher education curriculum materials.

Conclusions

The results of this study included the identification of a list of competencies from an examination of the literature, and verification of this list by panels of educators in Ohio and industrial education and
administrative personnel in Maine. Information was obtained from the educational personnel in Maine regarding the preferred timing of training for these competencies. Objectives appropriate for the development of teacher training activities were identified and evaluated by a national panel of industrial educators involved with special needs students.

Based on an analysis of the results found in this study, the following conclusions may be observed:

1. The list of competencies identified, evaluated, and prepared for use in Maine is appropriate and inclusive of the understandings and skills regarding handicapped learners needed by industrial educators.

2. The comprehensive list of competencies used in the needs assessment of Maine teachers was appropriate for developing a curriculum planning referent for industrial teacher education. The results of the evaluation by the national panel of experts indicate that this modified list of 34 instructional objectives with 120 teaching competencies should be considered as a referent for developing instructional modules regarding the education of handicapped persons.
3. Some of the professional competencies which had been rated as non-essential by Maine educators were considered by the joint members of the national committees to be needed at a high level of skill. The national committee members did not rate any of the competencies as being not appropriate, whereas Maine educators did. These differences in perceived value of professional competencies might be explained by the change in format of the second list, although care was taken to retain the substantive meaning of the competencies. Therefore, it is thought that differences in professional training and experience between the educational personnel in Maine and the members of the national committees may have influenced their respective perceptions of the value of specific competencies.

4. The differences that exist in the ratings by the Maine educational personnel and the joint members of the national committees may indicate a potential weakness of the type of needs assessment procedure used for part of this study. Educational decision makers should be more concerned with utilizing the assistance of those with professional expertise in the education of the handicapped
rather than relying on the opinion of those who lack specialized training.

5. The data from the educational personnel in Maine and the members of the national special needs committees indicate that 72 of the original competencies are essential at a high level (independent performance) of skill for industrial education teachers in the classroom. Industrial teacher educators should include these competencies at both the pre- and in-service level of teacher training activities to ensure early study and mastery. Those competencies which were rated as non-essential by the Maine educational personnel, but were rated as being needed at a high level of skill by the joint members of the A.V.A. and the A.I.A.A. should be carefully considered for inclusion at both the pre- and in-service levels of teacher education.

6. While there exists a difference as reported by Maine educators between preferred timing of training levels, this difference is not as pronounced as the difference shown in importance ratings by these personnel. The decision of when to include such training needs to be further studied by those responsible for developing and implementing the industrial teacher education program.
Consideration of existing delivery constraints may indicate the optimum timing of training for a given situation. The guidelines suggested for the state of Maine should enable educational planners to provide for the pre- and in-service preparation of personnel.

7. There exists a need for changes in affect behavior related to handicapped learners among educational personnel in industrial education. While some negative comments were provided, teachers also expressed an interest and concern for improving their own competencies. This suggests that some of the negative feelings may be the result of misunderstandings and/or lack of information regarding learning styles unique to the handicapped. This was supported by the misuse of terminology and wrong perceptions expressed by industrial education teachers regarding educational processes for handicapped learners. Thus a need is evident for improving the basic knowledge which will enable teachers to develop, modify, and use instructional materials, techniques, and strategies for the instruction of handicapped learners.
8. The use of the clinical teaching model as a referent for identifying and categorizing teacher training objectives and competencies is viable and appropriate when dealing with knowledge and skills related to education of handicapped learners.

Recommendations

Based on the results and conclusions of the study, the investigator makes the following general recommendations:

1. The results of this study are suggested as a referent for education of industrial educators in Maine. This referent should be considered by industrial teacher educators at the University of Southern Maine when developing educational activities to teach teachers of handicapped learners.

2. Industrial teacher educators of other universities may also wish to study and consider the results of this research for implications for teacher education at their institutions.

3. The American Vocational Association and the American Industrial Arts Association may wish to review the results of this research and consider implications
for policy making at the national association levels. For example, the association committees concerned with industrial education for handicapped may suggest recommendations for pre- and in-service education of industrial education teachers, supervisors, teacher educators, and also curriculum development.

4. The instrument used in Maine may be used in other states to determine perceived needs by educators in the field. The list of competencies and objectives as reviewed by the members of the national panels may be used as a referent for the development of educational specifications by those responsible for pre- and in-service teacher education.

5. The instrument and procedures used in this study could be edited to reflect subject areas other than industrial education and used to determine the needs of educators in other disciplines.

6. A study should be conducted to determine the existing attitudes about education of the handicapped in Maine and implications for teacher education programs to improve these attitudes.
7. An evaluation procedure should be developed to assess changes in affect behavior as a result of in-service training activities. The results of this evaluation should be considered by teacher educators in the development and modification of pre- and in-service teacher training activities.

8. The objectives and competencies developed and evaluated in this study should be used to help structure a systematic approach for developing the understandings, skills, and attitudes of industrial education teachers regarding the needs of handicapped learners.

9. An instrument based on the identified competencies should be developed to collect data regarding changes in the understandings and skills of industrial educators after a suitable time period (3 to 5 years). The information obtained by this should be used to evaluate and improve teacher education in Maine.

10. Based on the findings of this study, and other related studies (State of Maine, 1979b), the Maine State Department of Education and Cultural Services may wish to mandate the inclusion of pre- and in-service
educational activities for industrial education teachers about education of handicapped learners as a part of the periodic re-certification procedure. This would provide for the professional preparation of all educational practitioners and ensure adequate educational services for handicapped persons.

11. Additional financial support will be needed by local educational agencies, state department personnel, and teacher education programs to expand pre- and in-service training and resource materials to assist in meeting the legal and educational obligations mandated by recent federal legislation.

12. Based on the results of this study, and the concerns generated as a result of the discrepancies between the ratings of the national panel of experts and the Maine practitioners, the research model used by this study is recommended for similar research in other disciplines and in other geographical areas. If discrepancies in judgment exist, that should be known and considered by educational researchers so that changes in educational practices, curriculum, and teacher education can be efficient and effective.
13. While the procedure used by this study is recommended, researchers may wish to consider utilization of alternate sampling techniques and limitations regarding the length and complexity of survey instruments.

14. Those responsible for planning and conducting in-service education programs for industrial educators may wish to include representatives of educational support systems as participants (e.g. special educators, counselors, school psychologists, etc.). This would enable the industrial educators and cognate staff to share ideas and develop competencies and work skills necessary for efficient function as members of pupil evaluation teams.

Implications of the Study for Industrial Teacher Education in Maine

This section of the chapter describes recommendations for development and utilization of the curriculum materials in this study for teacher education in Maine. The process used to identify and verify these materials is described in the previous chapters. A description of existing delivery options in Maine is given in Chapter V, as is the relationship of the University of Southern Maine to
Industrial teacher preparation and certification.

Utilization of Materials for Curriculum Development

The objectives and competencies from this study are recommended for use as a referent in the development of educational specifications for curriculum development at the pre- and in-service level, and the graduate level. Their use as a basis for describing the knowledge and skill to be implemented in the self-study option is recommended.

At the pre-service level, the options previously described included infusion throughout the industrial education courses, and development of separate course offerings and activities. It should be noted that of the 147 competencies on the Maine instrument, 46 of the items rated as essential, were selected for inclusion at the pre-service level.

These competencies are recommended as a content basis for development of the outlines, units, and other descriptive materials which will verify the activities within existing courses. The identified competencies which were not clearly chosen for either pre-service or in-service should also be considered by the developers of these materials. There were 21 of these and they are
recommended for consideration for both the pre- and in-service curriculum materials.

In-service delivery options were described as workshops, separate courses, and self-study programs. Because of the difference in procedure used in the operation of the self-study option, it will be discussed separately in the next section.

Of the 147 competencies on the Maine instrument, 29 of the items were rated essential and were recommended for training at the in-service level. These are recommended as a content basis for development of workshops and for inclusion in the development of courses for in-service delivery.

The self-study option for delivery of teacher education is dependent upon the availability of transportable materials and the identification of knowledgable personnel for resource and control purposes. The use of competencies identified as essential for both pre- and in-service training is recommended as a content basis for use in development of these transportable materials.
It should be noted that individuals may utilize a combination of self-study activities and workshops in order to develop the competencies specified in the self-study options. The self-study option is based on the demonstration of attained competencies which are specified in behavioral terms.

At the graduate level, the use of the materials developed by this study is recommended, as is a consideration of the model used to order the competencies. The use of materials, practices, and information from other disciplines to form a multi-discipline content base is recommended. Specific disciplines might include, but are not limited to, Educational Counseling, Special Education, and courses designed to provide teachers with the skills necessary to teach remedial math and remedial reading.

Besides the identification of curriculum content areas, the objectives and competencies presented in the study could be used to help determine the depth of training desirable for the classroom teacher. The summary data presented in Chapters IV and V is recommended for consideration by curriculum developers.
as a referent for determination of the skill level for developed materials. While most of the competencies were listed by the panel of experts (A.V.A. and A.I.A.A. committee members) as appropriate at the "High Level" or independent function, some were not. Those listed as desirable for the classroom teacher (104 competencies) are recommended for in-depth training. Those recommended for the "Low Level" of training (14 competencies) are recommended for inclusion at a level of less depth. The competencies which were recommended but at an undetermined level of skill (16 competencies) are recommended for consideration for in-depth training as well. Priority should be given to those listed at the "High Level".

Recommended Changes in Delivery Options

This section of the chapter describes the investigator's recommendations for change in the delivery options. It should be noted that there were three options described in Chapter V: courses, workshops, and self-study programs. These options are in place through the Department of Industrial Education and Technology at the present time and are recommended as viable and effective. Change in the emphasis of utilization should be based on
interest by the participants as well as factors of cost and time.

On the basis of consideration of factors which influence potential teacher education students, the costs to them and their time involvement should be considered. In terms of cost, the fee for academic credit is established and set by the University. Costs for workshops, and activities which do not grant academic credit are variable. Time involvement, although a concern of potential students, should be determined by content activities. Workshops are generally considered to involve relatively short duration, highly concentrated time segments such as a day, or week. Courses, on the other hand, are generally considered to be longer duration and less concentrated segments, such as one night a week for fifteen weeks.

Combination of longer time duration than typically found in a workshop and less diffused time commitments are possible and are used in some limited cases. Examples include quarter courses which meet two nights a week for seven or eight weeks. Summer session courses have been offered which involve 15 sessions at
approximately 3 to 4 hours per session on campus.

One and two week (40 hours per week) workshops have been offered, although these generally are for specific groups of individuals and are not usually part of the undergraduate or graduate teacher education offerings.

Possible future developments which involve change in the traditional presentation methods include the use of video tape and telecommunication. The recent increase in the widespread use of video tape, both as a source of content and as a teaching tool presents possibilities which may enhance both the in-service offerings and the self-study options.

There is, at present, a tele-lecture network in place in the Health Education Program. It utilizes the telephone communication system with video communication. While its use is presently limited, it presents possibilities for future development.
Recommended Timing of Implementation

This section of the chapter presents the recommendations of the investigator regarding the timing of implementation activities. It is recognized that effective implementation is a process in which feedback is critical and essential in the determination of efficient utilization of effort and resources. For this reason, the reader is cautioned that a sequence of development such as the one suggested, is and should be subject to change based on feedback from process evaluation. Feedback regarding the development of training activities should include input from participants, instructors, and other individuals such as parents, administrators and other teachers who observe the results of training activities.

The sequence for implementation recommended by this investigator includes five general sections:

1. Development of Short Duration (1 Day) workshops.
2. Development of Self-Study Modules.
3. Investigation of possible methods of infusion into present teacher education programs.
4. Development of Graduate courses.
5. Development of Graduate area of specialization.
These are described in more detail in the following sections.

The first step, the development of short duration workshops, might be done on an in-service basis for practitioners in the schools. A recommended division of content would contain one of the steps in the clinical teaching model. Caution should be exercised regarding the possible overemphasis of diagnosis. Many awareness workshops in this area have been conducted throughout the state. Initial emphasis on the other steps in the model might provide reinforcement for this previous activity.

Consideration of the entire set of objectives and competencies for one of the divisions of the clinical teaching model may prove to be impractical within the time constraints of a short workshop. Therefore an order of priority may be advisable. Those competencies recommended for in-service training might be considered first, those which were recommended for both pre- and in-service next, and those recommended for pre-service only last. The competencies which were recommended for inclusion at the pre-service level by the practitioners of Maine may have been recommended for this level because
they were not perceived as immediately needed by these practitioners. The fact that they were recommended for inclusion at the pre-service level would indicate their importance, but the immediacy of their need may not be apparent to educators in the field.

Simultaneously with the development of short duration workshops, development work could be initiated for the self-study modules. If this activity is not carried out in conjunction with the development of short duration workshops, it should be done with input of an evaluative nature from them whenever possible. Learning activities involving participants in workshops may be adaptable to self-contained modules.

The third step in the sequence involves investigation of the possibility of infusion of competency based activities into the existing pre-service teacher education program. The following activities are recommended for consideration:

1. Examine the content of present courses and apparent trends for change.

2. Application of objectives and competencies within existing courses.
3. Use materials developed from 1 & 2 above.

4. Evaluate - Develop a system to:
   a. Evaluate choice of materials for infusion on a course by course basis.
   b. Evaluate efficacy of materials used (Steps 1 & 2 above).
   c. Make recommendations for change.

The fourth step includes the development of graduate courses based on input from infusion activities, examination of what is available within other disciplines, and utilization of assistance from personnel and materials from other disciplines.

The final step in the sequence for implementation involves the possible development of a graduate area of specialization. The development of this area of specialization should include input from developed graduate courses recommended previously. The nature of input should include evaluation of:

1. Interest in the subject area as evidenced by participation of teachers in courses.

2. Utilization of competencies within on-going programs in industrial education.

3. Academic resources available such as: personnel, library facilities, field centers for practicums, etc.
The reader is again cautioned that this sequence must be flexible and capable of responding to changes within the educational environment in Maine.

It is recognized that the information generated by this study, while primarily concerned with the improvement of teacher education in Maine, may also be generalizable to other states. The curriculum referent developed by this study utilized professional input from local and national levels. While the writer is somewhat cautious about the generalizability of the specific recommendations made for the teacher education delivery system in Maine, it is hoped that the professionals may be able to utilize the results of the study for the improvement of teacher education in industrial education of handicapped persons in other states.


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BIBLIOGRAPHY -- Continued

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10-17.
APPENDIX A

Initial Competency Selection Instrument and Results from Critical Review by Panel of Experts
INITIAL COMPETENCY SELECTION INSTRUMENT

Directions:

Please examine each of the following competency statements and place a check (✓) in the column which describes its value for teacher education of industrial educators. The competencies are grouped in categories based on the following procedures of the clinical teaching model:

1) Diagnosis
2) Prescription
3) Treatment
4) Nurture (Management of the educational environment over time)
5) Evaluation

If the item does not appear to be categorized correctly, please note that in the left hand margin.

Please accept my sincere thanks for your help in this phase of the study.

Ed. W. Taylor
## INITIAL COMPETENCY SELECTION

### PART 1: DIAGNOSIS

<table>
<thead>
<tr>
<th>Author No</th>
<th>No</th>
<th>Competency Item</th>
<th>Essential</th>
<th>Nice To Know</th>
<th>Not Needed</th>
</tr>
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<tbody>
<tr>
<td>1</td>
<td>5</td>
<td>1. Develop and/or utilize a screening-referral process for identification of special needs students in secondary programs.</td>
<td>5</td>
<td>1</td>
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<td>1</td>
<td>6</td>
<td>2. Collaborate with other educators, specialists and parents in evaluating the learner's educational needs.</td>
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<td>2</td>
<td>5</td>
<td>3. Identify psychological effects of being handicapped.</td>
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<td>2</td>
<td>52</td>
<td>4. Be aware of a student's interaction with peers, teachers, and parents.</td>
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<td>2</td>
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<td>2</td>
<td>51</td>
<td>5. Tentatively identify student's preferred learning style.</td>
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<td>2</td>
<td>60</td>
<td>6. Assist student in interpreting his own behavior.</td>
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<tr>
<td>3</td>
<td>10</td>
<td>7. Identify learning disabilities.</td>
<td>4</td>
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<td>3</td>
<td>13</td>
<td>8. Identify personality patterns.</td>
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<tr>
<td>3</td>
<td>38</td>
<td>9. Administer appropriate diagnostic tests.</td>
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<td>3</td>
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<td>3</td>
<td>75</td>
<td>10. Develop a process and a procedure for student selection.</td>
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<tr>
<td>3</td>
<td>88</td>
<td>11. Identify emotional factors which contribute to reading difficulties.</td>
<td>2</td>
<td>2</td>
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<td>3</td>
<td>89</td>
<td>12. Identify intellectual factors which contribute to reading difficulties.</td>
<td>3</td>
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<td>3</td>
<td>90</td>
<td>13. Assess student reading level.</td>
<td>4</td>
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<tr>
<td>3</td>
<td>91</td>
<td>14. Diagnose reading problems.</td>
<td>3</td>
<td>2</td>
<td>1</td>
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</table>

*
### Initial Competency Selection

#### Part 1: Diagnosis

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<thead>
<tr>
<th>Competency Item</th>
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<tbody>
<tr>
<td>Identify physical factors which contribute to reading difficulties.</td>
<td>3</td>
<td>1</td>
<td>1</td>
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<tr>
<td>Administer appropriate diagnostic reading tests.</td>
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<tr>
<td>Diagnose specific reading difficulties.</td>
<td>2</td>
<td>3</td>
<td>*</td>
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<tr>
<td>Identify educational factors that contribute to reading difficulties.</td>
<td>3</td>
<td>2</td>
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<tr>
<td>Identify symptoms of drug abuse.</td>
<td>2</td>
<td>3</td>
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<tr>
<td>Develop and/or utilize a screening-referral process for special needs students in secondary programs.</td>
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<tr>
<td>Use a variety of performance-based techniques for evaluating a student's competencies.</td>
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<tr>
<td>Administer diagnostic assessment instruments and techniques for classification and placement of special needs students.</td>
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<tr>
<td>Analyze special needs students' occupational interests and aptitudes.</td>
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<tr>
<td>Identify the specific nature of the students' learning difficulty.</td>
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<tr>
<td>Competency Item</td>
<td>Essential</td>
<td>Nice To Know</td>
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<tr>
<td>1. <strong>Formalize a cooperative arrangement</strong> for team teaching by identifying the appropriate career-related and special education programs and/or services for each special needs learner.**</td>
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<tr>
<td>2. <strong>Refer special needs learners to guidance staff and other specialists.</strong></td>
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<tr>
<td>3. <strong>Specify career-related instructional programs which can provide the relevant, occupational cluster instruction for a special needs learner.</strong></td>
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<tr>
<td>4. <strong>Identify modules or units of instruction appropriate for special needs learners.</strong></td>
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<tr>
<td>5. <strong>Sequence modules or units of instruction according to the learner's needs.</strong></td>
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<tr>
<td>6. <strong>Design instructional strategies appropriate for and effective with different special needs learners.</strong></td>
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<tr>
<td>7. <strong>Select or develop instructional materials which are appropriate for different special needs learners.</strong></td>
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<tr>
<td>8. <strong>Recognize special instructional options associated with different rates of development.</strong></td>
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<tr>
<td>9. <strong>Translate statements describing physical and sensory limitations into statements about instructional alternatives.</strong></td>
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<tr>
<td>10. <strong>Use information obtained from assessment activities, cumulative folders, and special reports to develop long-range educational options.</strong></td>
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</table>
## INITIAL COMPETENCY SELECTION
### PART 2: PRESCRIPTION

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<tr>
<th>Competency Item</th>
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<tbody>
<tr>
<td>Break down long-range educational goals into sequences of enabling goals.</td>
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<tr>
<td>Identify educational and behavioral goals in terms of a student's disability.</td>
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<tr>
<td>Arrange educational objectives in an order of priority.</td>
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<td>Sequence tasks to conform with learning styles, learning pace, and inferred learning potential of learners.</td>
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<tr>
<td>Select instructional materials and methods to accommodate student performance level.</td>
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<tr>
<td>Develop objectives in terms of entry level skills of a student.</td>
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<tr>
<td>Utilize information obtained from related disciplines about the sensory, physical, emotional, social, and cognitive conditions of the student to a planned remediation program.</td>
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<tr>
<td>Aid student in establishing goals and instructional objectives that are achievable in terms of his handicap.</td>
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<tr>
<td>Obtain through counseling with parents information necessary for program planning and implementation.</td>
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<td>Refer students to qualified personnel agencies when necessary.</td>
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<td>Competency Item</td>
<td>Essential</td>
<td>Nice To Know</td>
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<tr>
<td>Identify resource people.</td>
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<tr>
<td>Identify possible field trip sites.</td>
<td>2</td>
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<tr>
<td>Incorporate deductive thinking into curriculum.</td>
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<tr>
<td>Incorporate inductive thinking into curriculum.</td>
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<tr>
<td>Write behavioral objectives.</td>
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<tr>
<td>Utilize results of diagnostic tests.</td>
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<tr>
<td>Utilize results of achievement tests.</td>
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<td>Select instructional materials.</td>
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<tr>
<td>Prepare a schedule of activities.</td>
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<td>Develop student training plans.</td>
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<tr>
<td>Prescribe remedial math activities.</td>
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<tr>
<td>Prescribe remedial reading activities.</td>
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<tr>
<td>Interpret results of vocational tests.</td>
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<tr>
<td>Direct students into alternative programs.</td>
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<td>Formalize a cooperative arrangement for team teaching by identifying the</td>
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<td>appropriate career-related and special education programs and/or services</td>
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<td>for each special needs learner.</td>
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<tr>
<td>Collaborate with other educators, specialists and parents in evaluating the</td>
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<td>learner's educational needs.</td>
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</tbody>
</table>

Develop a composite profile of learning characteristics for a group of special needs learners to be served.

Refer special needs learners to guidance staff and other specialists.

Specify career-related instructional programs which can provide the relevant, occupational cluster instruction for a special needs learner (s).

Identify modules or units of instruction appropriate for special needs learners.

Plan a sequence of modules or units of instruction according to the learner's needs.

Design instructional strategies (activities or methods) appropriate for and effective with different special needs learners.

Identify the objectives which should be stressed with mainstreamed special needs learners.

Understand the legislation related to special needs students.

Become familiar with the federal and state guidelines and regulations related to special needs students.

Lead the special needs students to determine the career objectives which are most consistent with their interests and abilities.
<table>
<thead>
<tr>
<th>Competency Item</th>
<th>Essential To Know</th>
<th>Nice To Know</th>
<th>Not Needed</th>
</tr>
</thead>
<tbody>
<tr>
<td>Identify the services which should be provided to increase special needs students' chances of being successful in regular programs.</td>
<td>3</td>
<td>3</td>
<td>* *</td>
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<tr>
<td>Identify supportive and resource personnel.</td>
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</tr>
<tr>
<td>Identify a variety of community and governmental agency resources.</td>
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<td>3</td>
<td>* *</td>
</tr>
<tr>
<td>Collaborate with other educators, specialists, parents, and special needs students in planning process.</td>
<td>4</td>
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</tr>
<tr>
<td>Determine types of materials, methods and learning situations which are most appropriate for special needs students.</td>
<td>4</td>
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<td>**</td>
</tr>
<tr>
<td>Establish performance objectives for special needs students in relation to the tasks within the selected occupations.</td>
<td>5</td>
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<td>**</td>
</tr>
<tr>
<td>Individualize course of study and build individualized education programs (IEP) to fit special needs students.</td>
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<td></td>
<td></td>
</tr>
<tr>
<td>Identify instructional activities appropriate for special needs students.</td>
<td>4</td>
<td></td>
<td>**</td>
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</table>
### Initial Competency Selection

**Part 3: Treatment**

<table>
<thead>
<tr>
<th>Competency Item</th>
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<tr>
<td>1/Identify, coordinate, and utilize a variety of school, community, and government agency resources in developing instruction and identifying supportive services.</td>
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<tr>
<td>1/Develop or adapt a format appropriate for instructional planning (e.g., unit plans).</td>
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<tr>
<td>1/Develop a cooperative teaching strategy (resources or consulting) for instruction in basic concepts and competencies.</td>
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<tr>
<td>1/Utilize instructional techniques that individualize instruction.</td>
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<td>1/Utilize small group instructional techniques.</td>
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<tr>
<td>1/Utilize peer instruction techniques.</td>
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<tr>
<td>1/Utilize laboratory based (hands-on) instruction.</td>
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<tr>
<td>1/Develop instructional materials to meet specific student needs.</td>
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<tr>
<td>2/Generate instructional activities that are associated with the development of problem-solving behaviors.</td>
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<tr>
<td>2/Be creative in developing methods and techniques.</td>
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<tr>
<td>2/Effectively build a series of educational experiences which would lead a student to better understanding of: Self-Awareness Career Awareness Career Orientation Career Decision-Making</td>
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## INITIAL COMPETENCY SELECTION
### PART 3: TREATMENT

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<td>5</td>
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</tbody>
</table>

- Vary pace and instructional activities to maintain high student interest.
- Use appropriate multi-media equipment and material.
- Supervise student laboratory experiences.
- Establish and demonstrate procedures for the safe use, storage, and maintenance of tools and equipment.
- Develop positive reinforcement techniques.
- Estimate time sequence for a unit of instruction.
- Develop a unit plan.
- Utilize audio-visual aids.
- Incorporate business and industrial manuals in curriculum.
- Organize a weekly plan of instruction.
- Construct a lesson plan.
- Give a lecture.
- Present a demonstration.
- Operate audio-visual equipment.
- Implement team teaching.
- Employ oral questioning techniques.
## INITIAL COMPETENCY SELECTION
### PART 3: Treatment

<table>
<thead>
<tr>
<th>Competency Item</th>
<th>Essential</th>
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</thead>
<tbody>
<tr>
<td>Employ role-playing and simulation techniques.</td>
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<td>2</td>
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<tr>
<td>Employ project method of learning.</td>
<td>2</td>
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<td></td>
</tr>
<tr>
<td>Utilize problem-solving strategies.</td>
<td>3</td>
<td>1</td>
<td>4</td>
</tr>
<tr>
<td>Incorporate world of work into math instruction.</td>
<td>4</td>
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</tr>
<tr>
<td>Devise problem-solving techniques.</td>
<td>3</td>
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<tr>
<td>Identify, coordinate, and utilize a variety of school, community, and governmental agency resources in developing instruction and identifying supportive services.</td>
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</tr>
<tr>
<td>Select or develop instructional materials which are appropriate for different special needs learners.</td>
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<tr>
<td>Develop a cooperative teaching strategy (resource or consulting) for instruction in basic concepts and competencies.</td>
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<tr>
<td>Utilize instructional techniques that individualize instruction.</td>
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<tr>
<td>Utilize small group instructional techniques.</td>
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<tr>
<td>Utilize peer instruction techniques.</td>
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<tr>
<td>Utilize laboratory based (hands-on) instruction.</td>
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<tr>
<td>Identify techniques for teaching non-readers.</td>
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### INITIAL COMPETENCY SELECTION

**PART 3: TREATMENT**

#### Competency Item

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<tr>
<td>127</td>
<td>5 29</td>
<td>6</td>
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</tr>
</tbody>
</table>

- Develop instructional materials for special needs students.
- Integrate Occupational Safety and Health Administration's (OSHA) safety and health regulations into training programs.
- Identify the needed audio-visual materials, equipment, and other teaching aids.
- Implement individualized instruction for special needs students.
- Modify instructional materials and techniques to facilitate special needs students' learning.
- Motivate and reinforce special needs students.
- Refer students to the guidance counselor and/or other specialists (e.g., speech pathologists, audiologists, reading specialists, etc.)
- Demonstrate the ability to use materials, processes, and tools to assist special needs students in the pursuit of vocational goals.
<table>
<thead>
<tr>
<th>Competency Item</th>
<th>Essential To Know</th>
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<tr>
<td>Aid special needs learners in obtaining work permits.</td>
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<tr>
<td>Manage and adjust as needed, equipment and conditions in the learning environment.</td>
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<td>4</td>
</tr>
<tr>
<td>Provide reinforcement and feedback for learning.</td>
<td>6</td>
<td>4</td>
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<tr>
<td>Organize instructional environments that encourage exploratory behaviors.</td>
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<tr>
<td>Provide success-producing situations for individual students.</td>
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<tr>
<td>Reinforce exploratory responses and questions from students.</td>
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<td>Execute emergency procedures in a calm manner in the event of seizure, fatigue, or excessive emotional reaction.</td>
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<tr>
<td>Supervise and coordinate aides, tutors, etc.</td>
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<td>Adapt instructional environment for specific learners in light of information gained from physicians and other non-instructional consultants.</td>
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<td>Establish and build rapport with the student.</td>
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<tr>
<td>Be sensitive to and utilize behavior modification and other adjustment approaches.</td>
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<td>Define the operating rules and responsibilities of both the learner and the teacher-manager.</td>
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<td>Establish order of business each day.</td>
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<td>Encourage student to express his ideas and opinions.</td>
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<tr>
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<td>59</td>
<td>Assist student in expressing his feelings.</td>
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<tr>
<td>2</td>
<td>63</td>
<td>Provide opportunities for student to achieve recognition and receive personal group approval.</td>
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<tr>
<td>2</td>
<td>61</td>
<td>Aid student in adjusting to his disability.</td>
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<tr>
<td>2</td>
<td>66</td>
<td>Give attention to the personal needs of the student.</td>
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<tr>
<td>2</td>
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<td>Refer students to qualified agencies and/or provide assistance through personal, social, or scholastic change.</td>
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<td>70</td>
<td>Aid parents in defining realistic goals for their children.</td>
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<td>71</td>
<td>Encourage parents to implement extensions of the school program in the home.</td>
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<tr>
<td>2</td>
<td>72</td>
<td>Consult with supportive teacher(s) in order to extend and implement programs for individual students.</td>
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<tr>
<td>2</td>
<td>73</td>
<td>Establish and maintain communication channels with personnel in school and community agencies to extend instructional programs for an individual learner.</td>
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<tr>
<td>No.</td>
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<tr>
<td>2</td>
<td>Demonstrate a respect, love, empathy, for learners as growing, developing, and feeling human beings.</td>
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<td>Implement program modifications.</td>
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<td>Assist students in scheduling adjustments.</td>
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<td>Arrange guided field experiences.</td>
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<td>Conduct a student conference.</td>
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<td>3</td>
<td>Design and organize the physical plan of a classroom.</td>
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<td>3</td>
<td>Group students for small group instruction.</td>
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<td>Develop a system of material storage.</td>
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<td>Develop a schedule for cleaning work areas.</td>
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<td>Moderate student discussion of sensitive issues.</td>
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<td>Identify emotional factors that affect classroom environment.</td>
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<td>Utilize available classroom facilities.</td>
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<td>Stimulate learning through &quot;brain-storming&quot;, &quot;buzz groups&quot;, and &quot;question box techniques&quot;.</td>
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<td>Establish a student tutoring program.</td>
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<td>Construct a procedure for job relocation or rotation.</td>
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<td>Conduct a successful home visitation.</td>
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<td>Coordinate activities with participating schools.</td>
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<td>Involve the family as a primary source of student reinforcement.</td>
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<td>Locate help for drug related problems.</td>
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<td>3</td>
<td>Identify counseling technique.</td>
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<td>Aid special needs learners in obtaining work permits.</td>
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<td>Manage and adjust as needed, equipment and conditions in the learning environment.</td>
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<td>Provide reinforcement and feedback for learning.</td>
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<tr>
<td>4</td>
<td>Plan and coordinate off-campus or on-campus work experience on-the-job instruction. (e.g. workstudy in the co-op.)</td>
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<td>Identify counseling methods appropriate for use by industrial educators with special needs learners.</td>
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<td>Establish an appropriate attitude toward special needs students.</td>
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<td>Cooperate with other supportive personnel to provide needed remedial services.</td>
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<td>Encourage the establishment of appropriate attitudes of regular students toward special needs students.</td>
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<tr>
<td>5</td>
<td>Help special needs students develop positive attitudes about themselves, and work.</td>
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### INITIAL COMPETENCY SELECTION

**PART 4: NURTURE** - (Management of the educational environment over time)

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<tr>
<td>Develop and utilize two-way techniques for communicating with special needs students and their families.</td>
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<tr>
<td>Plan and coordinate work experience programs.</td>
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<tr>
<td>Make information available for special needs students on further educational opportunities and/or career advancement opportunities.</td>
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<tr>
<td>Coordinate or provide job placement.</td>
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<td>Assist employers and supervisors in acquainting techniques to enable them to work effectively with special needs students.</td>
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<td>Author No</td>
<td>Competency Item</td>
<td>Essential</td>
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<tr>
<td>1 9</td>
<td>Obtain follow-up data and information on special needs students leaving or graduating from school programs.</td>
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<td>1 22</td>
<td>Design a system for monitoring student progress and achievement on a regular basis.</td>
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<tr>
<td>1 32</td>
<td>Use a variety of performance-based techniques for evaluating a student's competencies.</td>
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<tr>
<td>1 38</td>
<td>Maintain student records in an objective manner.</td>
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<tr>
<td>1 49</td>
<td>Select and/or develop a variety of appropriate student assessment instruments.</td>
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<tr>
<td>1 55</td>
<td>Evaluate and modify his own teaching when appropriate.</td>
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<tr>
<td>1 53</td>
<td>Evaluate pupil performance at each task and step level.</td>
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<tr>
<td>1 59</td>
<td>Evaluate particular teaching process and strategies as related to individual pupil performance.</td>
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<tr>
<td>3 8</td>
<td>Maintain a personal data file for each student.</td>
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<tr>
<td>3 21</td>
<td>Compile accurate, up-to-date records.</td>
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<tr>
<td>3 27</td>
<td>Organize and/or conduct a local program review.</td>
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<tr>
<td>3 28</td>
<td>Conduct a student follow-up study.</td>
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### PART 5: Evaluation

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<th>Competency Item</th>
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<tbody>
<tr>
<td>Construct instruments to evaluate instructional objectives.</td>
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<tr>
<td>Construct a system of reporting student progress to students and parents.</td>
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<tr>
<td>Chart student progress</td>
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<td>1 **</td>
</tr>
<tr>
<td>Determine effectiveness of instruction.</td>
<td>62</td>
<td>6</td>
<td></td>
</tr>
<tr>
<td>Evaluate student progress at a training station.</td>
<td>73</td>
<td>2</td>
<td>1 **</td>
</tr>
<tr>
<td>Inform employer of student in-school progress.</td>
<td>83</td>
<td>3</td>
<td>2 1 *</td>
</tr>
<tr>
<td>Assess student comprehension of math concepts.</td>
<td>94</td>
<td>3</td>
<td>1 2 **</td>
</tr>
<tr>
<td>Devise alternative methods of grading.</td>
<td>95</td>
<td>4</td>
<td>1 1 *</td>
</tr>
<tr>
<td>Evaluate student reading progress.</td>
<td>97</td>
<td>2</td>
<td>3 1 **</td>
</tr>
<tr>
<td>Assess the ability of individual to modify his or her behavior.</td>
<td>111</td>
<td>3</td>
<td>1 ** **</td>
</tr>
<tr>
<td>Obtain follow-up data and information on special needs students leaving or graduating from school programs.</td>
<td>97</td>
<td>4</td>
<td>1 2 ** **</td>
</tr>
<tr>
<td>Identify basic language and quantitative concepts associated with the content of instructional modules or units.</td>
<td>208</td>
<td>2</td>
<td>4</td>
</tr>
<tr>
<td>Design a system for monitoring student progress and achievement on a regular basis.</td>
<td>209</td>
<td>2</td>
<td>1 ** **</td>
</tr>
</tbody>
</table>
### INITIAL COMPETENCY SELECTION

#### PART 5: EVALUATION

<table>
<thead>
<tr>
<th>Competency Item</th>
<th>Essential</th>
<th>Nice To Know</th>
<th>Not Needed</th>
</tr>
</thead>
<tbody>
<tr>
<td>Maintain student records</td>
<td>4</td>
<td></td>
<td>1 **</td>
</tr>
<tr>
<td>Identify and solve problems occurring in the instruction process.</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Evaluate special needs students’ performance and achievements to determine whether course objectives have been met.</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Identify the strong and weak areas of the total program.</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Conduct and interpret student follow-up studies.</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Revise the instructional program based on evaluation results.</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

*Note:* The table above lists competency items and their corresponding levels of importance. The numbers next to each item represent the level of importance, with higher numbers indicating greater importance. The table includes fields for "Essential," "Nice To Know," and "Not Needed." The "Not Needed" field includes a star symbol.
INITIAL COMPETENCY SELECTION

PART 6: OTHER (This section contains competency statements which are not clearly part of the clinical teaching procedures listed in the previous sections. If you believe they are inappropriately labeled in this section, please indicate that in the left hand margin. Thank you.)

<table>
<thead>
<tr>
<th>No.</th>
<th>Competency Item</th>
<th>Essential</th>
<th>Nice</th>
<th>Not Needed</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Establish and/or utilize advisory groups effectively in instructional development and program operation.</td>
<td>2</td>
<td>4</td>
<td>*</td>
</tr>
<tr>
<td>2</td>
<td>Conduct a community needs survey.</td>
<td>3</td>
<td></td>
<td></td>
</tr>
<tr>
<td>3</td>
<td>Identify occupations and clusters of occupations for which career exploration and/or preparation instruction can and should be provided.</td>
<td>3</td>
<td>2</td>
<td>1</td>
</tr>
<tr>
<td>4</td>
<td>Conduct an analysis to determine the knowledge concepts, specific job skills, general competencies and standards of performance needed for employment in a given career cluster.</td>
<td>5</td>
<td>3</td>
<td></td>
</tr>
<tr>
<td>5</td>
<td>Develop student performance objectives for instructional modules or units.</td>
<td>4</td>
<td>1</td>
<td></td>
</tr>
<tr>
<td>6</td>
<td>Identify the basic aptitudes and competencies (i.e., finger dexterity or sequencing skills) required for employment in a given career.</td>
<td>4</td>
<td>2</td>
<td></td>
</tr>
<tr>
<td>7</td>
<td>Identify basic language and quantitative concepts associated with the content of instructional modules or units.</td>
<td>2</td>
<td>2</td>
<td>1</td>
</tr>
<tr>
<td>8</td>
<td>Structure a filing system for records and report forms. Plan and coordinate off-campus or on-campus work experience (on-the-job) instruction (e.g., work study or co-op).</td>
<td>3</td>
<td>2</td>
<td></td>
</tr>
</tbody>
</table>
### INITIAL COMPETENCY SELECTION

**PART 6: OTHER**

<table>
<thead>
<tr>
<th>#</th>
<th>N°</th>
<th>N°</th>
<th>Competency Item</th>
<th>Essential</th>
<th>Nice To Know</th>
<th>Not Needed</th>
</tr>
</thead>
<tbody>
<tr>
<td>2</td>
<td>8</td>
<td>245</td>
<td>Describe instructional goals in performance terms.</td>
<td>6</td>
<td></td>
<td></td>
</tr>
<tr>
<td>2</td>
<td>246</td>
<td></td>
<td>Locate sources of pertinent occupational information relative to careers and job opportunities.</td>
<td>4</td>
<td>2</td>
<td></td>
</tr>
<tr>
<td>2</td>
<td>247</td>
<td></td>
<td>Assist guidance counselor in providing guidance services.</td>
<td>3</td>
<td>3</td>
<td></td>
</tr>
<tr>
<td>2</td>
<td>248</td>
<td></td>
<td>Describe the goals of the program to parents.</td>
<td>5</td>
<td>1</td>
<td></td>
</tr>
<tr>
<td>2</td>
<td>249</td>
<td></td>
<td>Participate in student-parent conferences.</td>
<td>5</td>
<td>1</td>
<td></td>
</tr>
<tr>
<td>2</td>
<td>250</td>
<td></td>
<td>Communicate with objectivity and specificity with other professionals.</td>
<td>5</td>
<td>1</td>
<td></td>
</tr>
<tr>
<td>2</td>
<td>251</td>
<td></td>
<td>Demonstrate a commitment to teaching.</td>
<td>6</td>
<td></td>
<td></td>
</tr>
<tr>
<td>2</td>
<td>252</td>
<td></td>
<td>Demonstrate knowledge of the ethical procedures of a professional.</td>
<td>5</td>
<td></td>
<td></td>
</tr>
<tr>
<td>2</td>
<td>253</td>
<td></td>
<td>Keep abreast of professional developments, societal needs, and technological advances.</td>
<td>5</td>
<td>1</td>
<td></td>
</tr>
<tr>
<td>3</td>
<td>254</td>
<td></td>
<td>Estimate cost of materials.</td>
<td>3</td>
<td>3</td>
<td></td>
</tr>
<tr>
<td>3</td>
<td>255</td>
<td></td>
<td>Research current trends in business and industry.</td>
<td>3</td>
<td>3</td>
<td></td>
</tr>
<tr>
<td>3</td>
<td>256</td>
<td></td>
<td>Establish a plan for continuing professional in-service education.</td>
<td>2</td>
<td>3</td>
<td>1</td>
</tr>
<tr>
<td>3</td>
<td>257</td>
<td></td>
<td>Organize a club program.</td>
<td>6</td>
<td></td>
<td></td>
</tr>
<tr>
<td>3</td>
<td>258</td>
<td></td>
<td>Organize an advisory committee.</td>
<td>5</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
# INITIAL COMPETENCY SELECTION

## PART 6: OTHER

### Competency Item

<table>
<thead>
<tr>
<th>No.</th>
<th>Essential</th>
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<tr>
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<td>4</td>
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<td>8</td>
<td>4</td>
<td>1</td>
<td>1</td>
</tr>
</tbody>
</table>

- Develop a presentation on program philosophy and goals.
- Publicize program in school.
- Conduct a FRIDE review.
- Complete state reports.
- Identify state and federal guidelines.
- Prepare a budget.
- Develop a filing system.
- Establish student transportation procedures.
- Communicate individual subject goals to faculty and administration.
- Conduct an employer appreciation program.
- Develop local program objectives.
- Organize a unit of instruction on career education.
- Complete a two-year course of study.
- Locate instructional materials.
- Contact reading resources and publication houses.
- Develop a system of recording attendance.
- Identify entry level jobs in the community.
- Conduct a parent-teacher conference.
- Establish a policy and procedure for job placement.
<table>
<thead>
<tr>
<th>No.</th>
<th>Essential</th>
<th>Nice</th>
<th>Not Needed</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>To Know</td>
<td></td>
<td></td>
</tr>
<tr>
<td>258</td>
<td>Conduct teacher-to-teacher conferences.</td>
<td>3</td>
<td>2</td>
</tr>
<tr>
<td>259</td>
<td>Develop public relations literature.</td>
<td>1</td>
<td>1</td>
</tr>
<tr>
<td>260</td>
<td>Inform employers of their responsibilities.</td>
<td>4</td>
<td></td>
</tr>
<tr>
<td>261</td>
<td>Inform parents of their responsibilities.</td>
<td>2</td>
<td>2</td>
</tr>
<tr>
<td>262</td>
<td>Inform school officials of their responsibilities.</td>
<td>2</td>
<td>1</td>
</tr>
<tr>
<td>263</td>
<td>Develop value clarification strategies.</td>
<td>1</td>
<td></td>
</tr>
<tr>
<td>264</td>
<td>Inform students of scholarships and grants available.</td>
<td>3</td>
<td>1</td>
</tr>
<tr>
<td>265</td>
<td>Conduct orientation for available academic and vocational programs.</td>
<td>3</td>
<td></td>
</tr>
<tr>
<td>266</td>
<td>Identify requirements of local vocational programs.</td>
<td>4</td>
<td>2</td>
</tr>
<tr>
<td>267</td>
<td>Establish and/or utilize advisory groups effectively in instructional development and program operation.</td>
<td>2</td>
<td>2</td>
</tr>
<tr>
<td>268</td>
<td>Conduct a community needs survey.</td>
<td>1</td>
<td></td>
</tr>
<tr>
<td>269</td>
<td>Identify occupations and clusters of occupations for which career exploration and/or preparation instruction can and should be provided.</td>
<td>1</td>
<td>4</td>
</tr>
<tr>
<td>270</td>
<td>Conduct an analysis to determine the knowledge concepts, specific job skills, general competencies and standards of performance needed for employment in a given career cluster.</td>
<td>1</td>
<td>3</td>
</tr>
</tbody>
</table>
INITIAL COMPETENCY SELECTION
PART 6: OTHER

<table>
<thead>
<tr>
<th>Competency Item</th>
<th>Essential</th>
<th>Nice To Know</th>
<th>Not Needed</th>
</tr>
</thead>
<tbody>
<tr>
<td>Develop or adopt a format appropriate for instructional planning. (e.g. unit plans)</td>
<td>2</td>
<td>1</td>
<td>4</td>
</tr>
<tr>
<td>Identify basic aptitudes and competencies (e.g. finger dexterity or sequencing skills) required for employment in a given career.</td>
<td>1</td>
<td>2</td>
<td>4</td>
</tr>
<tr>
<td>Structure a filing system for records and report forms.</td>
<td>1</td>
<td>1</td>
<td>4</td>
</tr>
<tr>
<td>Describe state and federal regulations pertaining to the education of special needs learners.</td>
<td>1</td>
<td>2</td>
<td>4</td>
</tr>
<tr>
<td>Identify available sources of funds for the education of special needs learners.</td>
<td>4</td>
<td>1</td>
<td>4</td>
</tr>
<tr>
<td>Devise methods of interpreting the special needs learner's industry education program to parents, teachers, administrators and community groups.</td>
<td>3</td>
<td>1</td>
<td>4</td>
</tr>
<tr>
<td>Analyze local or regional job market and employment trends.</td>
<td>2</td>
<td>2</td>
<td>4</td>
</tr>
<tr>
<td>Establish and use program advisory committee.</td>
<td>3</td>
<td>1</td>
<td>4</td>
</tr>
<tr>
<td>Obtain public support for vocational programs provided for special needs students.</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>Conduct task analyses to determine competencies needed in the world of work for special needs students.</td>
<td>4</td>
<td>1</td>
<td>2</td>
</tr>
<tr>
<td>Lead special needs students to considered alternative programs.</td>
<td>2</td>
<td>2</td>
<td>4</td>
</tr>
</tbody>
</table>

Define: 1) Diagnosis
2) Prescription
3) Treatment
4) Nurture (Management of the educational environment over time)
5) Evaluation

1) Survey is too long. It took me 3 hrs. to complete
2) Many questions were duplicated across categories. Was this intentional?
3) Most of the competencies seemed to be of value, however some did not lend themselves to curricular content of teacher ed. programs.
4) Many questions were duplicated within categories.
5) Should "Nurture" be a viable category? It seems to me that "Nurture" is simply more "Treatment" in terms of your clinical teaching model.

The Authors listed in the far left column are the following:

2) Seligman, J.S. (1978)
3) Albright, L., Nichols, D. & Pinchak, J. (1975)
4) Williams, M. J. (1977)
5) Yung, K., Jennings, J. & Haynie, R. (1979)
INITIAL COMPETENCY SELECTION -- ANALYSIS -- COMMENTS

Item No:
1. This is nice to know but is more the job of Special Ed., School Administration etc.
3. Unclear
4. ? Vague (insert "social")
6. Move to Treatment??; (insert "and becoming responsible")
7. To what degree?
8. (specify examples and how it will be used in teaching)
9. Resource or other specialist; Assess; Should be responsibility of voc. evaluator and/or school psychologist
10. If there are prerequisites for the specific course; Prescription process; For what?
11. Define
12. Define

Bottom of p.1: It appears that your terminology is completely independent of trends presently being developed in special education.
16. Why not use reading specialist?
17. Seems to be repetitive
18. repetitive; (insert "in teaching process" "learning"
19. ?
20. Presently on page 1; Duplicate; repetitive
22. In voc. ed. programs?; Within pre-vocational area; Into an I.A. Program?; of I.A.??
24. Repetitive

Bottom of p.2: I would suggest grouping the items into a sequential pattern of diagnosis:
Ex. A. Screening procedure or diagnostic procedure
B. Individuals involved in the diagnosis
C. Specific types of diagnostic techniques & instruments

Identify vocational evaluation systems and/or instruments appropriate for special needs learners.
Identify various standardized instruments and techniques that are used to identify the different handicaps.

25. Develop an individual teaching plan for each student;
   (insert "instructional approach"
30. unclear; (instructional strategies)
32. diagnosis
34. As a reference only

Bottom of p.3: Identify the cognitive, affective and psychomotor level of each student in order to developmentally prescribe an individualized educational plan.
INITIAL COMPETENCY SELECTION -- ANALYSIS -- COMMENTS

Item No:
35. (insert "reachable"); (I.A.)??
36. as well as abilities; repetitive statement
38. (insert "each individual")
40. ? not all (objectives);
41. (insert "a"); Change remediation to educational - sounds negative (insert "within a least restrictive environment"
42. Similar to 4 a ; You are going to counsel parents as much as the student to develop the program
44. The teacher is also the program manager for the student outside the classroom, workshop etc.
45. That will assist in what areas of the program?
49. Repeat
50. Repeat
51. Repeat
52. Repeat; Redundant
53. Repeat
54. Repeat; IEP
55. In relation to program activities? Within what area?
56. In relation to program activities
58. Such as? - will a team meeting be called or will it be one teacher's decision?
59. Same as 3 a ; Repeat; Repeat
60. Same as 1 b; Repeat; Repeat; Diagnosis

Top of p.5 - Get as much help from resource people as possible.

Bottom of p.5 - Achievement test indicate a place to start a more specific series of skill assessment - Achievement test alone do very little to assist teachers in developing individual programs.

61. For those with limited knowledge in special needs
62. Same as 3 b; Repeat; Repeat
63. Same as 3 c; Repeat; Repeat
64. Same as 3 d; Repeat; Repeat
65. Same as 3 e; Repeat; Repeat
66. Repeat; (Repeat)
67. Repeat; Repeat; Write a curriculum that reflects the specific center, school, workshop etc., but that has a consistent format throughout the system.
69. Duties of the supervisor
70. Duties of the supervisor
71. Treatment
72. (Insert "mainstreaming"); (insert "mainstreamed") not all should be successful
73. Similar to 5 a; Repeat; Work with them closely
74. Repeat; Repeat
75. Repeat; case conference, state law calls for this; IEP; Repeat
76. For I.A.; Repeat; Repeat
77. (Insert "pre-entry level skills"); Repeat
78. (Insert " Modify and adapt course objectives to" and "meet the needs of each special need student
79. Similar to 3 g; Repeat; IEP

Bottom of p.7 - Become familiar with the individualized education program (IEP) process
It seems the prescription section needs revision to eliminate many items that are repeated.

81. Repetitive - put in prescription
82. Put in prescription; Various forms of media to use all senses.
86. Motivational;
87. After the new teacher is on the job; Repetitive
88. Life skills; After the new teacher is on the job
89. Can't be taught
90. Comes with experience; (insert: "self worth" "Realistic assessment of personal strengths/needs/ & limitations" "Accepting & Understanding Responsibilities"
91. See note -bottom of page: Use a small activity or group action (ex. line up at wall) as a transition between larger activities during the schedule day. This way you cut down on carry over behavior that is behavior that carry over from one activity to the next (ex. gym to lunch)
92. In conjunction with modality assessment; Repeat?
96. Might be difficult depending on level of student
97. Similar
98. Same as 9 b; For some students; Repeat?
99. Manuals ?; Check reading level
100. Variety of style-form or other expectations
102. At times it's needed; Depending on level of student & learning modalities
103. Patterning might be necessary- Demo. might have to be broken up Doing sections that were discussed.
104. Repeat? Same as 9b?
105. Good if managable
106. (insert: "informal" & "to evaluate"); Once again - for some students - what about combining oral & signing for extending communications skills
108. ? explain; ?
109. Similar 8a; Repetitive; Repeat?
110. (insert; "practical")
111. Prescriptive; Repeat?
112. Similar; Repetitive; Repeat?
113. Similar; Repetitive; Repeat?
114. Similar to 8 c; Repetitive; Repeat?
115. Similar to 8 d; Repetitive; Repeat?
116. Similar to 8 e; Repetitive; Repeat?
117. Similar to 8 f; Repetitive; Repeat?; Repeat
118. Similar to 6 g; Repetitive; Repeat?
119. Survival words/ Pictures predictable reading psycholinguistics
<table>
<thead>
<tr>
<th>Item No.</th>
<th>Analysis</th>
<th>Comments</th>
</tr>
</thead>
<tbody>
<tr>
<td>120.</td>
<td>Repeat?; Similar to 8 h</td>
<td></td>
</tr>
<tr>
<td>121.</td>
<td>The main concern of employers</td>
<td></td>
</tr>
<tr>
<td>122.</td>
<td>Repetitive; Repeat?</td>
<td></td>
</tr>
<tr>
<td>123.</td>
<td>Repetitive; Repeat?; (insert &quot;as prescribed&quot;)</td>
<td></td>
</tr>
<tr>
<td>124.</td>
<td>(insert &quot;This is the key&quot;)</td>
<td></td>
</tr>
<tr>
<td>125.</td>
<td>Good; (insert &quot;any learner&quot;); (insert &quot;Basic principles of behavior management - Stress reinforcement schedules&quot;)</td>
<td></td>
</tr>
<tr>
<td>128.</td>
<td>Repetitive; Supportive personnel</td>
<td></td>
</tr>
<tr>
<td>129.</td>
<td>Changes often difficult for the blind</td>
<td></td>
</tr>
<tr>
<td>130.</td>
<td>Feedback and reinforcement must come after teaching</td>
<td></td>
</tr>
<tr>
<td>131.</td>
<td>Explain</td>
<td></td>
</tr>
<tr>
<td>133.</td>
<td>Language stimulation is very important</td>
<td></td>
</tr>
<tr>
<td>134.</td>
<td>Workshops for staff - stress legal implementations of using adverse techniques; Normally we contact infirmary A.S.A.P.</td>
<td></td>
</tr>
<tr>
<td>135.</td>
<td>If you have them - co-ordination is essential for effectiveness; Workshops for staff</td>
<td></td>
</tr>
<tr>
<td>136.</td>
<td>(insert &quot;skill &amp; knowledge&quot;) imperative</td>
<td></td>
</tr>
<tr>
<td>138.</td>
<td>(insert &quot;skill &amp; knowledge&quot;) imperative</td>
<td></td>
</tr>
<tr>
<td>139.</td>
<td>(insert &quot;A repetitous&quot;)</td>
<td></td>
</tr>
<tr>
<td>140.</td>
<td>Parents must be treated with &quot;kid gloves&quot; you can not implement programs at home if the home life is in ruins.</td>
<td></td>
</tr>
<tr>
<td>150.</td>
<td>?</td>
<td></td>
</tr>
<tr>
<td>152.</td>
<td>(insert &quot;when needed&quot;)</td>
<td></td>
</tr>
<tr>
<td>154.</td>
<td>(insert &quot;That relate to instruction&quot;)</td>
<td></td>
</tr>
<tr>
<td>156.</td>
<td>Treatment</td>
<td></td>
</tr>
<tr>
<td>157.</td>
<td>Group work and attending skills are vital</td>
<td></td>
</tr>
<tr>
<td>158.</td>
<td>Language</td>
<td></td>
</tr>
<tr>
<td>159.</td>
<td>Language</td>
<td></td>
</tr>
<tr>
<td>Bottom of p. 14</td>
<td>Parent conference, ITP, Individual Training Programs</td>
<td></td>
</tr>
<tr>
<td>167.</td>
<td>Supportive personnel</td>
<td></td>
</tr>
<tr>
<td>168.</td>
<td>Supportive personnel; Primary reinforcement should be intrinsic in nature &amp; come from the individual student</td>
<td></td>
</tr>
<tr>
<td>169.</td>
<td>Supportive personnel</td>
<td></td>
</tr>
<tr>
<td>170.</td>
<td>Supportive personnel</td>
<td></td>
</tr>
<tr>
<td>171.</td>
<td>Repetitive; Support personnel; Repetitive</td>
<td></td>
</tr>
<tr>
<td>172.</td>
<td>Repetitive; Similar to 12 b; Repeat</td>
<td></td>
</tr>
<tr>
<td>173.</td>
<td>Repetitive; Similar 12 c; Repeat</td>
<td></td>
</tr>
<tr>
<td>174.</td>
<td>Repeat; Not needed for teacher; Support Personnel</td>
<td></td>
</tr>
<tr>
<td>175.</td>
<td>Repetitive; Support Personnel</td>
<td></td>
</tr>
<tr>
<td>176.</td>
<td>We have to understand their unique needs</td>
<td></td>
</tr>
<tr>
<td>177.</td>
<td>Support Personnel - involvement with; Similar; Repetitive</td>
<td></td>
</tr>
<tr>
<td>178.</td>
<td>(insert &quot;educate normal population&quot;)</td>
<td></td>
</tr>
<tr>
<td>181.</td>
<td>Support Personnel</td>
<td></td>
</tr>
<tr>
<td>182.</td>
<td>Support Personnel</td>
<td></td>
</tr>
<tr>
<td>183.</td>
<td>Support Personnel</td>
<td></td>
</tr>
<tr>
<td>Bottom of p. 16</td>
<td>Teaching students to fill out job applications, S.S. Cards, etc. What to look for when reading want ads in the paper - How to go on an interview (dressing, behavior etc.)- work behavior - time clock, break time, being late or sick etc.</td>
<td></td>
</tr>
</tbody>
</table>
INITIAL COMPETENCY SELECTION -- ANALYSIS -- COMMENTS

Item No.
185. Support Personnel (Obtain from)
189. Diagnosis - Repetitive
190. An observer's feedback for additional info.
191. Not every task but objective level; If you develop a curriculum,
you will need an evaluation system for each task step that
numerically plugs into the curriculum, so that you always know
where the learner fits into the overall picture.
193. Similar to 17 d
194. Similar to 17 d
196. Support Personnel; Repetitive; Repeat
197. Curriculum; Repetitive
199. Repetitive; Similar to 17 d; Curriculum
201. Similar to 17 d; Repeat
202. If done in a positive manner to further student work adjustment
203. Diagnosis; relating to specific course objective
204. Be consistent and involve student
205. Diagnosis; If related to objectives;
206. Good; Diagnosis; in the shop
207. From placement or other supportive personnel; Repetitive; Repeat
209. Repetitive; Similar to 17 d; Repeat
210. Repetitive; Similar to 17 d
211. Modify with each student; Only comes with experience
214. Repetitive; Support Person; Repeat
215. In conjunction with other faculty and supervisors

Bottom of p.19 - Educational objectives must contain the actor,
the action, any conditions on the action, and
criteria to determine if task has been learned.

216. Evaluation
217. (insert "through advisory groups"
218. Prescription
220. Prescription; Repetitive
222. Similar to 18 l; Repetitive
223. Similar to 17 d; Nurture
224. Similar to 15 t
225. Prescription; Prescription
226. Prescription
228. IEP Skills;
229. IEP Skills; IEP
230. IEP Skills; Needs to be part of the program
235. Stay in contact with advisory groups
236. Repeat
241. ?; Already covered
242. On what?
243. Concerning what;
244. for program
245. Mentioned in another section; Nurture
251. On what?; Repeat;
253. For what?
256. Repeat;
257. Are we talking about voc.ed.teachers or ind. arts teachers or both?
INITIAL COMPETENCY SELECTION -- ANALYSIS -- COMMENTS

Item No.
261. Concerning what?
262. Concerning what?
263. ?; What does it mean?
264. Treatment
265. Treatment
266. Repeated; Repeat; ?
267. Similar; Repeated; Repeated; In what areas & what would the information be used for?
268. Repeat
269. Repeat
270. Repetitive; Repeat
271. Nurture; Repetitive; Repeat
272. Diagnosis; Similar; Repeat; Repetitive
273. Nurture; Similar; Repeat; Repetitive
274. Prescription; Repeat; Repetitive
275. Prescription
276. Perhaps in conjunction with supportive and administrative personnel
277. Perhaps in conjunction with supportive and administrative personnel
278. Perhaps in conjunction with supportive and administrative personnel; Repeat; Repetitive
279. Nurture
280. Treatment; Repeat
APPENDIX B

Selected Competencies for the Industrial Education of Handicapped Learners
SELECTED COMPETENCIES FOR THE INDUSTRIAL EDUCATION OF HANDICAPPED LEARNERS

The following list of competencies has been developed by compiling items from five studies which met the selection criteria for the present study. The items in this list have been reviewed by a selected panel of teachers, supervisors and/or administrators with experience in industrial education (industrial arts and/or vocational education) and special education. The initial list contained 281 items, many of them duplicates. With the help of the above panel, the duplication has been reduced and some items have been clarified.

Please help me further refine and verify the list of competencies by critically reviewing this list from your perspective as a teacher educator in industrial and/or special education.

Please accept my sincere thanks for your help in this phase of the study.

---

Directions:
Please evaluate each item by indicating its:

1) Appropriateness for teacher education of industrial education personnel who instruct or will instruct handicapped learners. Indicate whether the item is "Essential", "Nice To Know", or "Not Essential" by placing a check (√) in the appropriate column on the right side of the page.

2) Adequacy of description - Does the item communicate its meaning adequately? - If not please edit on copy.

3) Inclusion - Are there any voids in the instrument or items that were missed? Are any items incorrectly categorized? - If so, please mark copy.
# SELECTED COMPETENCIES FOR THE INDUSTRIAL EDUCATION OF HANDICAPPED LEARNERS

## PART 1: DIAGNOSIS

<table>
<thead>
<tr>
<th>Essential</th>
<th>Nice</th>
<th>Not To Know</th>
</tr>
</thead>
</table>

1. Develop knowledge of a screening-referral process for remediation of special needs students in secondary programs.

2. Collaborate with other educators, specialists, and parents in evaluating the learner's educational needs.

3. Tentatively identify student's preferred learning style.

4. Identify learning disabilities and refer student for further evaluation.

5. Identify personality patterns.

6. Develop a process and procedure for student selection.

7. Assess student reading level.

8. Diagnose reading problems.


10. Use a variety of performance-based techniques for evaluating a student's competencies.

11. Administer diagnostic assessment instruments and techniques for classification and placement of special needs students in pre- and vocational education programs.

12. Analyze special needs students' occupational interests and aptitudes.

13. Identify the specific nature of the students' learning difficulty regarding vocational and pre-vocational education.
SELECTED COMPETENCIES FOR THE INDUSTRIAL EDUCATION OF HANDICAPPED LEARNERS

PART 1: DIAGNOSIS

14. Identify vocational evaluation systems and/or instruments which are appropriate for special needs learners.

15. Identify various standardized instruments and techniques that are used to identify the different handicaps.
SELECTED COMPETENCIES FOR THE INDUSTRIAL EDUCATION OF HANDICAPPED LEARNERS

PART 2: PRESCRIPTION

16. Conduct a community needs survey.

17. Formalize a cooperative arrangement for team teaching by identifying the appropriate career-related and special education programs and/or services for each special needs learner.

18. Refer special needs learners to guidance staff and other educational specialists when necessary.

19. Specify career-related instructional programs which can provide the relevant occupational cluster instruction for a special needs learner.

20. Identify modules or units of instruction appropriate for special needs learners.

21. Design instructional strategies appropriate for and effective with different special needs learners.

22. Select or develop instructional materials which are appropriate for different special needs learners.

23. Recognize special instructional options associated with different rates of development.

24. Translate statements describing physical and sensory limitations into statements about instructional alternatives.

25. Use information obtained from assessment activities, cumulative folders, and special reports to develop long-range educational options.

26. Identify the cognitive, affective and psychomotor level of each student in order to developmentally prescribe an individualized educational plan.

27. Break down long-range educational goals into sequences of enabling goals.
PART 2: PRESCRIPTION

28. Identify educational and behavioral goals in terms of a student's disability.

29. Arrange educational objectives in an order of priority.

30. Sequence tasks to conform with learning styles, learning pace, and inferred learning potential of learners.

31. Develop objectives in terms of entry level skills of a student.

32. Utilize information obtained from related disciplines about the sensory, physical, emotional, social, and cognitive conditions of the student to a planned remediation program.

33. Aid student in establishing goals and instructional objectives that are achievable in terms of his/her handicap.

34. Obtain through counseling with parents information necessary for program planning and implementation.

35. Recommend that students use the resources of specialized personnel and/or agencies when necessary.

36. Identify resource people to help prepare instructional activities.

37. Incorporate deductive thinking into curriculum.

38. Incorporate inductive thinking into curriculum.

39. Write behavioral objectives.

40. Utilize results of diagnostic tests.
<table>
<thead>
<tr>
<th>Essential</th>
<th>Nice</th>
<th>Not Essential</th>
</tr>
</thead>
<tbody>
<tr>
<td>To Know</td>
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</table>

**SELECTED COMPETENCIES FOR THE INDUSTRIAL EDUCATION OF HANDICAPPED LEARNERS**

**PART 2: PRESCRIPTION**

41. Utilize results of achievement tests.

42. Prescribe remedial math activities.

43. Prescribe remedial reading activities.

44. Direct students into alternative programs.

45. Develop a composite profile of learning characteristics for a group of special needs learners to be served.

46. Identify the objectives which should be stressed with mainstreamed special needs learners.

47. Understand the federal and state guidelines and regulations related to special needs students.

48. Lead the special needs students to determine the career objectives which are most consistent with their interests and abilities.

49. Identify the services which should be provided to increase special needs students' chances of being successful in regular programs.

50. Collaborate with other educators, specialists, parents, and special needs students in planning process.

51. Establish performance objectives for special needs students in relation to the tasks within the selected occupations.

52. Individualize course of study and build individualized education programs (IEP) to fit special needs students.
SELECTED COMPETENCIES FOR THE INDUSTRIAL EDUCATION OF HANDICAPPED LEARNERS

PART 3: TREATMENT

53. Identify, coordinate, and utilize a variety of school, community, and government agency resources in developing instruction and identifying supportive services.

54. Develop or adapt a format appropriate for instructional planning (e.g., unit plans).

55. Develop a cooperative teaching strategy (resources or consulting) for instruction in basic concepts and competencies.

56. Be aware of student's interaction with peers, teachers, and parents.

57. Assist student in interpreting his/her own behavior.

58. Identify educational factors that contribute to reading difficulties.

59. Conduct orientation for available academic and vocational programs.

60. Utilize small group instructional techniques.

61. Utilize peer instruction techniques.

62. Utilize laboratory based (hands-on) instruction.

63. Generate instructional activities that are associated with the development of problem-solving behaviors.

64. Effectively build a series of educational experiences which would lead a student to better understanding of:
   Self-Awareness
   Career Awareness
   Career Orientation
   Career Decision-Making

65. Use appropriate multi-media equipment and material.

66. Supervise student laboratory experiences.
SELECTED COMPETENCIES FOR THE INDUSTRIAL EDUCATION OF HANDICAPPED LEARNERS

PART 3: TREATMENT

67. Establish and demonstrate procedures for the safe use, storage, and maintenance of tools and equipment.

68. Develop positive reinforcement techniques to motivate and reinforce the learning process.

69. Estimate time sequence for a unit of instruction.

70. Develop a unit plan.

71. Incorporate business and industrial manuals in curriculum.

72. Organize a weekly plan of instruction.

73. Construct a lesson plan.

74. Give a lecture.

75. Present a demonstration.

76. Employ oral questioning techniques.

77. Employ role-playing and simulation techniques.

78. Employ techniques for teaching non-readers.

79. Integrate Occupational Safety and Health Administration's (OSHA) safety and health regulations into training programs.

80. Demonstrate the ability to use materials, processes, and tools to assist special needs students in the pursuit of vocational goals.

81. Modify and utilize equipment, materials, and instructional methodology to facilitate the learning of special needs students.
SELECTED COMPETENCIES FOR THE INDUSTRIAL EDUCATION OF HANDICAPPED LEARNERS

PART 4: NURTURE

82. Aid special needs learners in obtaining work permits.

83. Organize instructional environments that encourage exploratory activities.

84. Provide success-producing situations for individual students.

85. Participate in student-parent conferences.

86. Establish a policy and procedure for job placement.

87. Conduct teacher-to-teacher conferences.

88. Develop a filing system.

89. Execute emergency procedures in a calming manner in the event of seizure, fatigue, or excessive emotional reaction.

90. Supervise and coordinate aides, tutors, etc.

91. Be sensitive to and utilize behavior modification and other adjustment approaches.

92. Define the operating rules and responsibilities of both the learner and the teacher-manager.

93. Establish order of business each day.

94. Encourage student to express his/her ideas, opinions, and feelings.

95. Provide opportunities for student to achieve recognition and receive personal group approval.

96. Aid student in adjusting to his/her disability.

97. Give attention to the personal needs of the student.
SELECTED COMPETENCIES FOR INDUSTRIAL EDUCATION OF HANDICAPPED LEARNERS

PART 4: NURTURE

98. Consult with supportive teacher(s) in order to extend and implement programs for individual students.

99. Arrange guided field experiences.

100. Conduct a conference with an individual student.

101. Design and organize the physical floor plan of a classroom.

102. Develop a system of material storage.

103. Develop a schedule for cleaning work areas.

104. Moderate student discussion of sensitive issues.

105. Identify emotional factors that affect classroom environment.

106. Utilize available classroom facilities.

107. Stimulate learning through "brain-storming", "buzz groups", and "question box techniques".

108. Establish a student tutoring program.

109. Construct a procedure for job relocation or rotation.

110. Conduct a successful home visitation.

111. Involve the family as a primary source of student reinforcement.

112. Locate help for drug related problems.

113. Plan and coordinate off-campus or on-campus on-the-job instruction. (e.g. workstudy, etc.)

114. Identify counseling methods appropriate for use by industrial educators with special needs learners.
SELECTED COMPETENCIES FOR THE INDUSTRIAL EDUCATION OF HANDICAPPED LEARNERS

PART 4: NURTURE

115. Establish an appropriate attitude toward special needs students.

116. Encourage the establishment of appropriate attitudes of regular students toward special needs students.

117. Help special needs students develop positive attitudes about themselves, and work.

118. Make information available for special needs students on further educational opportunities and/or career advancement opportunities.

119. Coordinate or provide job placement.

120. Assist employers and supervisors in acquiring techniques to enable them to work effectively with special needs students.
PART 5: EVALUATION

121. Utilize follow-up data and information on special needs students leaving or graduating to improve program.

122. Design a system for monitoring student achievement on a regular basis.

123. Use a variety of performance-based techniques for evaluating a student's competencies.

124. Maintain student records in an objective manner.

125. Evaluate pupil performance at each objective level.

126. Evaluate particular teaching process and strategies as related to individual pupil performance and modify as needed.

127. Organize and/or conduct a local program review.

128. Develop procedures to evaluate instructional objectives.

129. Construct a system of reporting student progress to students and parents.

130. Assess the ability of the individual to modify his or her behavior.

SELECTED COMPETENCIES FOR THE INDUSTRIAL EDUCATION OF HANDICAPPED LEARNERS

<table>
<thead>
<tr>
<th>Essential</th>
<th>Nice</th>
<th>Not Essential</th>
<th>To Know</th>
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E  S  s  e  n  t  i  a  l  N  i  c  e  |  N  o  t  E  s  s  e  n  t  i  a  l  T  o  K  n  o  w
SELECTED COMPETENCIES FOR THE INDUSTRIAL EDUCATION OF HANDICAPPED LEARNERS

PART 6: OTHER

131. Establish and/or utilize advisory groups effectively in instructional development and program operation.

132. Conduct an analysis to determine the knowledge concepts, specific job skills, general competencies and standards of performance needed for employment in a given career cluster.

133. Identify the basic aptitudes and competencies (i.e., finger dexterity or sequencing skills) required for employment in a given career.

134. Communicate with objectivity and specificity with other professionals.

135. Demonstrate a commitment to teaching.

136. Demonstrate knowledge of the ethical procedures of a professional.

137. Keep abreast of professional developments, societal needs, and technological advances.


139. Organize a club program.

140. Publicize program in school.

141. Conduct a PRIDE review.

142. Complete state reports.

143. Prepare a budget.

144. Establish student transportation procedures.

145. Communicate individual subject goals to faculty and administration.

146. Conduct an employer appreciation program.
SELECTED COMPETENCIES FOR THE INDUSTRIAL EDUCATION OF HANDICAPPED LEARNERS

PART 6: OTHER

<table>
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<tr>
<th>Essential</th>
<th>Nice To Know</th>
<th>Not Essential</th>
</tr>
</thead>
</table>

147. Develop local program objectives.
148. Organize a unit of instruction on career education.
149. Complete a two-year course of study.
150. Locate instructional materials.
151. Develop a system of recording attendance.
152. Conduct a parent-teacher conference.
153. Develop public relations literature.
154. Inform parents of their responsibilities.
155. Inform school officials of their responsibilities.
156. Develop value clarification strategies.
157. Devise methods of interpreting the special needs learner's industrial education program to parents, teachers, administrators and community groups.
158. Analyze local or regional job market and employment trends.
159. Obtain public support for vocational programs provided for special needs students.
APPENDIX C

Protocol Document and List of Competencies
Submitted to The Ohio State University Research
on Human Subjects Committee.
(Includes Approval Form)
ACTION OF THE REVIEW COMMITTEE

The Behavioral and Social Sciences Review Committee has taken the following action:

1. Approve (✓ waiver of written consent)
2. Approved with conditions
3. Disapprove

with regard to the employment of human subjects in the proposed research entitled: The Development and Evaluation of a Theoretical Model for Preparing Industrial Education Teachers to Serve Handicapped Learners in Maine.

James J. Buffer, Jr. is listed as the principal investigator.

The conditions, if any, are attached and are signed by the committee chairperson. If disapproved, the reasons are attached and are signed by the committee chairperson.

It is the responsibility of the principal investigator to retain a copy of each signed consent form for at least four (4) years beyond the termination of the subject's participation in the proposed activity. Should the principal investigator leave the University, signed consent forms are to be transferred to the Human Subject Review Committee for the required retention period. This application has been approved for the period of one year. You are reminded that you must promptly report any problems to the Research Committee, and that no procedural changes may be made without prior review and approval. You are also reminded that the identity of the research participants must be kept confidential.

Date: ___________________________ Signed: ____________________

(Chairperson)

cc: Original-Investigator
    Ken Sloan
    Development Officer
    File

Form PA-025
Rev. 10/79
1) In a sentence or two, briefly describe why the proposed project is of interest. The intent of this question is to give the reviewer a brief idea of the background and purpose of the research.

There is a need for training industrial education personnel to teach handicapped learners. This study will verify the necessity of selected competencies for these teachers and prepare a model for the delivery of this training for industrial education personnel in Maine.

2) Briefly describe each of the different conditions or manipulations to be included within the study.

A questionnaire and follow-up letters will be sent to a selected sample of:

   (1) Industrial education teachers in Maine, and
   (2) Local administrators of industrial education programs in Maine.

3) What is the nature of the measures or observations that will be taken in the study?

A questionnaire will be used to ask participants to identify the importance of selected industrial education/special education competencies, and to indicate when training for each should be included in a teacher education program.

4) If any questionnaires, tests, or other instruments are to be used, please provide a brief description and either include a copy or indicate approximately when a copy will be submitted to the committee for review.

A copy of the questionnaire is included with this Summary Sheet.

---

Form PA-016A  (Rev. 7/79)
5) Will the subjects encounter the possibility of either psychological, social, physical or legal risk? □ Yes □ No If so, please describe.

6) Will any stress be involved in the study? □ Yes □ No If so, please describe.

7) Will the subjects be deceived or misled in any way? □ Yes □ No If so, please describe and include a statement regarding the nature of the debriefing.

8) Will there be any probing for information which an individual might consider to be personal or sensitive? □ Yes □ No If so, please describe.

9) Will the subjects be presented with materials which they might consider to be offensive, threatening or degrading? □ Yes □ No If so, please describe.

10) Approximately how much time will be demanded of each subject?
    Approximately 1½ -- 2 hours.

11) Who will be the subjects in this study? How will the subjects for this study be solicited or contacted?
The subjects will be:
    (1) Industrial education teachers in Maine,
    (2) Local administrators of industrial education programs in Maine.
A questionnaire will be mailed to the subjects.

12) What steps will be taken to insure that the subject's participation is voluntary? What, if any, inducements will be offered to the subjects for their participation?
Subjects will receive the questionnaire by mail. They will be free to disregard the questionnaire and not participate. No inducements will be offered.

Form PA-035B (Rev. 7/79)
13) It is important that a subject be informed regarding the general nature of what they will experience when they participate in a study, including particularly a description of anything they might consider to be either unpleasant or a risk. Please provide a statement regarding the nature of the information which will be provided to the subject prior to his volunteering to participate.

An attached cover letter will introduce the study to the subject. A sample cover letter is included with this Summary Sheet.

14) What steps have been taken to insure that the subjects give their consent prior to participating? Will a written consent form be used? [YES] [NO] If so, please include it. If the subjects are minors, will their parents' consent be obtained? [YES] [NO] If so, please include the form and if not, please indicate why not.

The instrument will be mailed to participants. They are free to choose to participate or not. Therefore no consent form is needed. None of the participants is a minor.

15) Will any aspect of the data be made a part of any permanent record that can be identified with the subject? [YES] [NO]

16) Will whether or not a subject participated in a specific experiment or study be made a part of any permanent record available to a supervisor, teacher or employer? [YES] [NO]

17) What steps will be taken to insure the confidentiality of the data?

No attempt will be made to correlate the responses on the instrument with any individual or school.

18) If there are any risks involved in the study, are there any offsetting benefits that might accrue to either the subject or society?

There are no risks.

19) Will any data from files or archival data be used? [YES] [NO]

Lists of industrial education teachers and local administrators of industrial education programs will be obtained from the Maine Department of Educational and Cultural Services. These lists will be used to identify the subjects to receive the questionnaire.

Form PA-036C (Rev. 7/79) ************
Dear Colleague:

You have been selected to receive the enclosed questionnaire because of your involvement in the industrial education of Maine students. You are involved in the vital task of educating young people about the world of work and their role in it.

The questionnaire lists tasks which have been selected as representative of those needed by industrial educators for teaching handicapped learners. The importance of education for these individuals cannot be over emphasized if they are to achieve a self-supporting and productive role in our society.

I am asking you to help me identify those competencies which are essential for the industrial educator of the handicapped in classes like yours. I ask that you base your judgment on your experience in industrial education. I am also asking that you indicate whether the competency is one that should be taught at the undergraduate level, or if it can be as effectively learned through in-service programs after graduation.

Please complete the enclosed questionnaire and return it in the self-addressed, stamped envelope provided. The instrument contains a number which will aid in follow-up, however your response will be kept confidential. No attempt will be made to associate responses on the instrument with individuals or schools. Your participation, although voluntary, is critical to the success of this study. The results of this study will be used to improve teacher education in Maine by considering new options in undergraduate and in-service education.

Thank you for your assistance in this study.

Sincerely,

Ed W. Taylor
Assistant Professor
TO: Members of the Research on Human Subjects Committee

FROM: Ed W. Taylor

DATE: November 4, 1979

RE: Attached Instrument

The attached questionnaire: "Competencies for Industrial Education Teachers of Handicapped Learners" contains the format and items to be used in the collection of Background Information on the first page. It contains the Directions, Sample Item, and overall format for the remainder of the instrument on the second page. The following pages (3 - 13) contain the text of the competencies to be surveyed. The actual instrument will be professionally printed in Maine. The content will be as described in this document (i.e. word for word).
Subject: Waiver of Written Consent

Date: November 5, 1979

From: Dr. James J. Buffer, Jr. & Ed. W. Taylor

To: Chairperson of Human Subject Review Committee
OSURF, Room 205

This memo is to request a waiver of written consent for the accompanying study entitled:
"The Development and Evaluation of a Theoretical Model for Preparing Industrial Education Teachers to Serve Handicapped Learners in Maine"

The subjects of the study will receive the questionnaire by mail. There is no obligation on their part to fill it out. They are free to choose not to participate in the study and are so informed in the cover letter. No inducements of any type will be offered.

The participants will be guaranteed anonymity in that the instrument does not request names or other identifiers. The control number at the top of the first page will be used for follow-up purposes only. There will be no attempt made to identify or correlate any response with any individual or school.

Thank you for your consideration of this matter.
COMPETENCIES FOR INDUSTRIAL EDUCATION TEACHERS OF HANDICAPPED LEARNERS

Note: This number is used for follow-up only. No attempt will be made to associate any response with a person or school.

NO: ____________________________

BACKGROUND INFORMATION

Please place a check (√) in the response which applies to you or your program.

1. EXPERIENCE - Please indicate the number of years of teaching experience you will have by June, 1980:
   0 - 2 ( ) 3 - 5 ( ) 6 -10 ( ) More ( )

2. LEVEL OF PROGRAM - Please indicate the level of the program in which you teach:
   Junior High School Industrial Arts (including Middle School) ( )
   Senior High School Industrial Arts ( )
   Senior High School Vocational Program ( )
   Post Secondary Vocational Program ( )

3. TECHNICAL SPECIALIZATION - Please indicate the area(s) of specialization which you teach:
   ( ) Automotives
   ( ) Business
   ( ) Construction
   ( ) Culinary Arts
   ( ) Distributive Ed.
   ( ) Electrical
   ( ) Electronics
   ( ) Energy & Transportation
   ( ) Fisheries
   ( ) Forestry
   ( ) General
   ( ) Graphic Arts
   ( ) Graphics, Drafting
   ( ) Heating/AC/ Refrigeration
   ( ) Manufacturing
   ( ) Machine Tool
   ( ) Metals
   ( ) Plastics
   ( ) Wood Harvesting
   ( ) Woods
   ( ) Others ____________________________

4. EXPERIENCE WITH HANDICAPPED INDIVIDUALS - Please indicate each type of handicapping condition with which you have had experience:
   ( ) Mentally Retarded
   ( ) Neurologically & Learning Disabled
   ( ) Orthopedically Disabled
   ( ) Sensory Impaired (Sight, Hearing, etc.)
   ( ) Other ____________________________

5. FORMAL EDUCATION AND CERTIFICATION - Please indicate the highest degree held and type of certificate:
   ( ) Bachelors
   ( ) Masters
   ( ) Post Masters
   Type of certificate ____________________________
COMPETENCIES FOR INDUSTRIAL EDUCATION TEACHERS OF HANDICAPPED LEARNERS

The purpose of this survey is to identify those competencies which are essential for the industrial educator (industrial arts teacher and/or vocational teacher) to serve handicapped learners. A secondary purpose of this instrument is to identify the most effective time for the industrial educator to receive training about handicapped learners in his/her classes.

Directions:
Please read the following competencies and:

1. Determine if the competency is "Essential", "Nice To Know", or "Not Essential". Place a check (✓) in the appropriate space in the column at the right.

2. Determine if the competency should be taught at the "Pre-service" (undergraduate) level, or could it be equally well taught at a later time through an "In-service" activity. Please place a check (✓) in the appropriate column at the far right.

3. If you choose, please feel free to add any comments regarding any of these competencies.

Sample Item:
0. Develop an inventory system for consumable materials. ✓ ( ) ( )

This response indicates that the item was considered "Essential" and could be best taught at the "Pre-service" level.

PART 1: DIAGNOSIS - Competencies dealing with the identification and categorization of handicapping conditions which affect learners.

1. ( )( ) ( ) ( )
PART I: DIAGNOSIS

Develop knowledge of a screening-referral process for remediation of special needs students in secondary programs.

Collaborate with other educators, specialists, and parents in evaluating the learner's educational needs.

Tentatively identify student's preferred learning style.

Identify learning disabilities and refer student for further evaluation.

Identify personality patterns.

Develop a process and procedure for student selection.

Assess student reading level.

Identify symptoms of drug abuse.

Use a variety of performance-based techniques for evaluating a student's competencies.

Administer diagnostic assessment instruments and techniques for classification and placement of special needs students in pre- and vocational education programs.

Analyze special needs students' occupational interests and aptitudes.

Identify the specific nature of the students' learning difficulty regarding vocational and pre-vocational education.

Utilize vocational evaluation systems and/or instruments which are appropriate for special needs learners.

Identify various standardized instruments and techniques that are used to assess the different handicaps.

Identify emotional factors that affect classroom environment.

Conduct an analysis to determine the knowledge concepts, specific job skills, general competencies, and standards of performance needed for employment in a given career cluster.

Identify the basic aptitudes and competencies (i.e., finger dexterity or sequencing skills) required for employment in a given career.

Conduct a community needs survey.

Analyze local or regional job market and determine employment opportunities for handicapped persons.
PART 2: PRESCRIPTION

Identify educational and behavioral goals in terms of a student's disability.

Arrange educational objectives in an order of priority.

Sequence tasks to conform with learning styles, learning pace, and inferred learning potential of learners.

Develop objectives in terms of entry level skills of a student.

Utilize information obtained from related disciplines about the sensory, physical, emotional, social, and cognitive conditions of the student to assist with planning a remediation program.

Aid student in establishing goals and instructional objectives that are achievable in terms of his/her handicap.

Obtain through conference with parents information necessary for program planning and implementation.

Recommend that students use the resources of specialized personnel and/or agencies when necessary.

Identify resource people to help prepare instructional activities.

Incorporate deductive thinking into curriculum for those with special needs.

Incorporate inductive thinking into curriculum for those with special needs.

Write behavioral objectives regarding the pre- and vocational development of handicapped persons.

Utilize results of diagnostic tests to plan instruction.
PART 2: PRESCRIPTION

Formalize a cooperative arrangement for team teaching by identifying the appropriate career-related and special education programs and/or services for each special needs learner.

Refer special needs learners to guidance staff and other educational specialists when necessary.

Specify career-related instructional programs which can provide the relevant occupational cluster instruction for a special needs learner.

Identify modules or units of instruction appropriate for special needs learners.

Design instructional strategies appropriate for and effective with different special needs learners.

Select or develop instructional materials which are appropriate for different special needs learners.

Recognize special instructional options associated with different rates of development.

Translate statements describing physical and sensory limitations into statements about instructional alternatives.

Use information obtained from assessment activities, cumulative folders, and special reports to develop long-range educational options.

Identify the cognitive, affective and psychomotor level of each student in order to developmentally prescribe an individualized educational plan.

Break down long-range educational goals into sequences of enabling goals.

Develop local program objectives.

Organize a unit of instruction on career education.

Adopt and adapt instructional and resource materials.

Inform parents of their responsibilities regarding program planning and evaluation.
PART 2: PRESCRIPTION

Utilize results of achievement tests to plan instruction.

Prescribe remedial math activities.

Prescribe remedial reading activities.

Direct handicapped students into alternative programs.

Develop a composite profile of learning characteristics for a group of special needs learners to be served.

Identify the objectives which should be stressed with mainstreamed special needs learners.

Understand the federal and state guidelines and regulations related to special needs students.

Guide special needs students to determine the career objectives which are most consistent with their interests and abilities.

Identify the services which should be provided to increase special needs students' chances of being successful in regular programs.

Collaborate with other educators, specialists, parents, and special needs students in planning process.

Establish performance objectives for special needs students in relation to the tasks within selected occupations.

Individualize course of study and build individualized education programs (IEP) to fit special needs students.

Plan modification of facilities and lab equipment to enable participation of handicapped persons.

Develop alternative methods of material storage, handling, and lab clean-up.
PART 3: TREATMENT

Develop or adapt a format appropriate for instructional planning (e.g., unit plans).

Develop a cooperative teaching strategy (resources or consulting) for instruction in basic concepts and competencies.

Be aware of student's interaction with peers, teachers, and parents.

Assist student in interpreting his/her own behavior.

Identify educational factors that contribute to reading difficulties.
Conduct orientation for available academic and vocational programs.

Utilize small group instructional techniques.

Utilize peer instruction techniques.

Utilize laboratory based (hands-on) instruction.

Generate instructional activities that are associated with the development of problem-solving behaviors.

Effectively build a series of educational experiences which would lead a student to better understanding of:
  Self-Awareness
  Career Awareness
  Career Orientation
  Career Decision-Making

Use appropriate multi-media equipment and material to improve sensory stimulation and development of the handicapped.

Supervise student laboratory experiences to facilitate development of self-reliance and resourcefulness.

Inform school officials of their responsibilities regarding placement and supportive services for the handicapped enrolled in the pre- and vocational program.

Organize a student club program to further the social development of handicapped persons.
PART 3: TREATMENT

Establish and demonstrate procedures for the safe use, storage, and maintenance of tools and equipment.

Develop positive reinforcement techniques to motivate and reinforce the learning process.

Estimate time sequence for a unit of instruction.

Incorporate business and industrial manuals in curriculum.
Present a lecture utilizing non-verbal visuals and related techniques to improve communication with special needs students.
Present a demonstration.

Employ oral questioning techniques to ensure participation of all students.

Employ role-playing and simulation techniques to replicate employment training conditions.

Integrate Occupational Safety and Health Administration's (OSHA) safety and health regulations into training programs.

Demonstrate the ability to use materials, processes, and tools to assist special needs students in the pursuit of vocational goals.

Modify and utilize equipment, materials, and instructional methodology to facilitate the learning of special needs students.

Modify and utilize equipment and materials to facilitate the learning of special needs students.

Modify and utilize instructional techniques and strategies to facilitate the learning of special needs students.
PART 4: NURTURE

Consult with supportive teacher(s) in order to extend and implement programs for individual students.

Arrange guided field experiences.

Conduct a conference with an individual student.

Moderate student discussion of sensitive issues.

Stimulate learning through "brain-storming", "buzz groups", and "question box techniques".

Establish a student tutoring program.

Conduct a successful home visitation.

Involve the family as a primary source of student reinforcement.

Locate support for those with personal adjustment problems (e.g., drug abuse, test anxiety, etc.)

Develop a procedure for job relocation or rotation within the lab.

Plan and coordinate off-campus or on-campus on-the-job instruction. (e.g., workstudy, etc.)

Identify counseling methods appropriate for use by industrial educators with special needs learners.

Construct a procedure for job relocation or rotation within the lab.

Maintain an appropriate (supportive) attitude toward special needs students.

Develop and utilize value clarification strategies.

Encourage the establishment of appropriate attitudes of regular students toward special needs students.

Help special needs students develop positive attitudes about themselves and work.

Make information available for special needs students on further educational opportunities and/or career advancement opportunities.

Assist employers and supervisors in acquiring techniques to enable them to work effectively with special needs students.

Reorganize the physical floor plan of the classroom/laboratory to accommodate handicapped persons.
PART 4: NURTURE

Aid special needs learners in obtaining work permits.

Organize instructional environments that encourage exploratory activities.

Provide success-producing situations for individual students.

Participate in student-parent conferences.

Establish a policy and procedure for job placement.

Conduct teacher-to-teacher conferences.

Execute emergency procedures in a calming manner in the event of seizure, fatigue, or excessive emotional reaction.

Supervise and coordinate aides, tutors, etc.

Be sensitive to and utilize behavior modification and other adjustment approaches.

Define the operating rules and responsibilities of both the learner and the teacher-manager.

Establish order of business each day.

Encourage student to express his/her ideas, opinions, and feelings.

Provide opportunities for student to achieve recognition and receive personal group approval.

Aid student in adjusting to his/her disability.

Give attention to the personal needs of the student.
PART 5: EVALUATION AND DISSEMINATION

Design a system for monitoring student achievement on a regular basis.

Use a variety of performance-based techniques for evaluating a student's competencies.

Maintain student records in an objective manner.

Evaluate pupil performance at each objective level.

Evaluate particular teaching process and strategies as related to individual pupil performance and modify as needed.

Organize and/or conduct a local program review.

Develop procedures to evaluate instructional objectives.

Construct a system of reporting student progress to students and parents.

Assess the ability of the individual to modify his or her behavior.

Conduct a parent-teacher conference.

Develop public relations literature.

Devise methods of interpreting the special needs industrial education program to parents, teachers, administrators, and community groups.

Utilize follow-up data and information regarding special needs students leaving or graduating to improve program.

Develop and use an appropriate filing system to accommodate student related records.

Prepare those records regarding program development and operation and students that are required by law and school policy.

Share program development strengths and weaknesses with other professionals.

Establish and/or utilize advisory groups effectively in instructional development and program operation.

Conduct an employer appreciation program.

Obtain public support for vocational programs provided for special needs students.
PART 6: OTHER

Communicate with objectivity and specificity with other professionals.

Demonstrate a commitment to teaching.

Demonstrate knowledge of the ethical procedures of a professional.

Keep abreast of professional developments, societal needs, and technological advances.

Research current trends in business and industry (e.g., technological practices, employment patterns, training needs, etc.)
APPENDIX D

Competencies for Industrial Education
Teachers of Handicapped Learners.
Dear Colleague:

You have been selected to receive the enclosed questionnaire because of your involvement in the industrial education of Maine students. You are involved in the vital task of educating young people about the world of work and their role in it.

The questionnaire lists tasks which have been selected as representative of those needed by industrial educators for teaching handicapped learners. The importance of education for these individuals cannot be over emphasized if they are to achieve a self-supporting and productive role in our society.

I am asking you to help me identify those competencies which are essential for the industrial educator of the handicapped in classes like yours. I ask that you base your judgment on your experience in industrial education. I am also asking that you indicate whether the competency is one that should be taught at the undergraduate level, or if it can be as effectively learned through in-service programs after graduation.

Please complete the enclosed questionnaire and return it in the self-addressed, stamped envelope provided. The instrument contains a number which will aid in follow-up, however your response will be kept confidential. No attempt will be made to associate responses on the instrument with individuals or schools. Your participation, although voluntary, is critical to the success of this study. The results of this study will be used to improve teacher education in Maine by considering new options in undergraduate and in-service education.

Thank you for your assistance in this study.

Sincerely,

Ed W. Taylor
Assistant Professor
COMPETENCIES FOR INDUSTRIAL EDUCATION TEACHERS OF HANDICAPPED LEARNERS" 

Note: This number is used for follow-up only. No attempt will be made to associate any response with a person or school.

BACKGROUND INFORMATION

Please place a check (✓) in the response which applies to you or your program.

1. EXPERIENCE — Please indicate the number of years of teaching experience you will have by ______ yrs. June, 1980:

2. LEVEL OF PROGRAM — Please indicate the level of the program in which you teach:
   ( ) 1. Junior High School Industrial Arts
   ( ) 2. Senior High School Industrial Arts
   ( ) 3. Senior High School Vocational Program
   ( ) 4. Post Secondary Vocational Program

3. TECHNICAL SPECIALIZATION — Please indicate the area(s) of specialization which you teach:

   ( ) a. Automotives
   ( ) b. Business
   ( ) c. Construction
   ( ) d. Culinary Arts
   ( ) e. Distributive Ed.
   ( ) f. Electrical
   ( ) g. Electronics
   ( ) h. Energy & Transportation
   ( ) i. Fisheries
   ( ) j. Forestry
   ( ) k. General
   ( ) l. Graphic Arts
   ( ) m. Graphics, Drafting
   ( ) n. Heating/AC/ Refrigeration
   ( ) o. Manufacturing
   ( ) p. Machine Tool
   ( ) q. Metals
   ( ) r. Plastics
   ( ) s. Wood Harvesting
   ( ) t. Woods

   ( ) u. ____________________ (Other: )
   ( ) v. ____________________
   ( ) w. ____________________
   ( ) x. ____________________

4. EXPERIENCE WITH HANDICAPPED INDIVIDUALS — Please indicate each type of handicapping condition with which you have had experience:

   ( ) 1. Mentally Retarded
   ( ) 2. Neurologically & Learning Disabled
   ( ) 3. Orthopedically Disabled
   ( ) 4. Sensory Impaired (Sight, Hearing, etc.)
   ( ) 5. Other ____________________

5. FORMAL EDUCATION AND CERTIFICATION — Please indicate the highest degree held and type of certificate.

   ( ) 1. Bachelors
   ( ) 2. Masters
   ( ) 3. Post Masters

Type of Certificate ____________________
COMPETENCIES FOR INDUSTRIAL EDUCATION TEACHERS OF HANDICAPPED LEARNERS

The purpose of this survey is to identify those competencies which are essential for the industrial educator (industrial arts teacher and/or vocational teacher) to serve handicapped learners. A secondary purpose of this instrument is to identify the most effective time for the industrial educator to receive training about handicapped learners in his/her classes.

Directions:

Please read the following competencies and:

1. Determine if the competency is "Essential", "Nice To Know", or "Not Essential". Place a check (✓) in the appropriate space in the column at the left.

2. Determine if the competency should be taught at the "Pre-service" (undergraduate) level, or could it be equally well taught at a later time through an "In-service" activity. Please place a check (✓) in the appropriate column at the far left.

3. If you choose, please feel free to add any comments regarding any of these competencies.

SAMPLE ITEM:

0. Develop an inventory system for consumable materials.

This response indicates that the item was considered "Essential" and could be best taught at the "Pre-service" level.

BEGIN ON THE NEXT PAGE WITH DIAGNOSIS.
PART 1: DIAGNOSIS — Competencies dealing with the identification and categorization of handicapping conditions which affect learners.

1. Develop knowledge of a screening-referral process for remediation of special needs students in secondary programs.

2. Collaborate with other educators, specialists, and parents in evaluating the learner's educational needs.

3. Tentatively identify student's preferred learning style.

4. Identify learning disabilities and refer student for further evaluation.

5. Identify personality patterns.

6. Develop a process and procedure for student selection.

7. Assess student reading level.

8. Identify symptoms of drug abuse.

9. Use a variety of performance-based techniques for evaluating a student's competencies.

10. Administer diagnostic assessment instruments and techniques for classification and placement of special needs students in pre-and vocational education programs.

11. Analyze special needs students' occupational interests and aptitudes.

12. Identify the specific nature of the students' learning difficulty regarding vocational and pre-vocational education.

13. Utilize vocational evaluation systems and/or instruments which are appropriate for special needs learners.

14. Identify various standardized instruments and techniques that are used to assess the different handicaps.

15. Identify emotional factors that affect classroom environment.

16. Conduct an analysis to determine the knowledge concepts, specific job skills, general competencies, and standards of performance needed for employment in a given career cluster.

17. Identify the basic aptitudes and competencies (i.e., finger dexterity or sequencing skills) required for employment in a given career.

18. Conduct a community needs survey.

19. Analyze local or regional job market and determine employment opportunities for handicapped persons.

PART 2: PRESCRIPTION Competencies dealing with the selection and sequencing of educational procedures used to achieve identified individual objectives.

20. Formalize a cooperative arrangement for team teaching by identifying the appropriate career-related and special education programs and/or services for each special needs learner.

21. Refer special needs learners to guidance staff and other educational specialists when necessary.

22. Specify career-related instructional programs which can provide the relevant occupational cluster instruction for a special needs learner.

23. Identify modules or units of instruction appropriate for special needs learners.

24. Design instructional strategies appropriate for and effective with different special needs learners.
25. Select or develop instructional materials which are appropriate for different special needs learners.

26. Recognize special instructional options associated with different rates of development.

27. Translate statements describing physical and sensory limitations into statements about instructional alternatives.

28. Use information obtained from assessment activities, cumulative folders, and special reports to develop long-range educational options.

29. Identify the cognitive, affective and psychomotor level of each student in order to developmentally prescribe an individualized educational plan.

30. Break down long range educational goals into sequences of enabling goals.

31. Develop local program objectives.

32. Organize a unit of instruction on career education.

33. Adopt and adapt instructional and resource materials.

34. Inform parents of their responsibilities regarding program planning and evaluation.

35. Utilize results of achievement tests to plan instruction.

36. Prescribe remedial math activities.

37. Prescribe remedial reading activities.

38. Direct handicapped students into alternative programs.

39. Develop a composite profile of learning characteristics for a group of special needs learners to be served.

40. Identify the objectives which should be stressed with mainstreamed special needs learners.

41. Understand the federal and state guidelines and regulations related to special needs students.

42. Guide special needs students to determine the career objectives which are most consistent with their interests and abilities.

43. Identify the services which should be provided to increase special needs students' chances of being successful in regular programs.

44. Collaborate with other educators, specialists, parents, and special needs students in planning process.

45. Establish performance objectives for special needs students in relation to the tasks within selected occupations.

46. Individualize course of study and build individualized education programs (IEP) to fit special needs students.

47. Plan modification of facilities and lab equipment to enable participation of handicapped persons.

48. Develop alternative methods of material storage, handling, and lab clean-up.

49. Identify educational and behavioral goals in terms of a student's disability.

50. Arrange educational objectives in an order of priority.
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<tr>
<th>No Essential</th>
<th>Essential</th>
<th>Preface</th>
<th>Inservice</th>
<th>Other</th>
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<td>51. Sequence tasks to conform with learning styles, learning pace, and inferred learning potential of learners.</td>
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<td>52. Develop objectives in terms of entry level skills of a student.</td>
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<td>53. Utilize information obtained from related disciplines about the sensory, physical, emotional, social, and cognitive conditions of the student to assist with planning a remediation program.</td>
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<td>54. Aid student in establishing goals and instructional objectives that are achievable in terms of his/her handicap.</td>
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<td>55. Obtain through conference with parents information necessary for program planning and implementation.</td>
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<td>56. Recommend that students use the resources of specialized personnel and/or agencies when necessary.</td>
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<td>57. Identify resource people to help prepare instructional activities.</td>
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<td>58. Incorporate deductive thinking into curriculum for those with special needs.</td>
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<td>59. Incorporate inductive thinking into curriculum for those with special needs.</td>
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<td>60. Write behavioral objectives regarding the pre-and vocational development of handicapped persons.</td>
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<td>61. Utilize results of diagnostic tests to plan instruction.</td>
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**PART 3 TREATMENT** Competencies dealing with the delivery of prescribed educational services and procedures in the classroom/laboratory setting.

<table>
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<tr>
<th>No Essential</th>
<th>Essential</th>
<th>Preface</th>
<th>Inservice</th>
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<tr>
<td>62. Develop or adapt a format appropriate for instructional planning (e.g., unit plans).</td>
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<td>63. Develop a cooperative teaching strategy (resources or consulting) for instruction in basic concepts and competencies.</td>
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<td>64. Be aware of student’s interaction with peers, teachers, and parents.</td>
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<td>65. Assist student in interpreting his/her own behavior.</td>
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<td>66. Identify educational factors that contribute to reading difficulties.</td>
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<td>67. Conduct orientation for available academic and vocational programs.</td>
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<td>68. Utilize small group instructional techniques.</td>
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<td>69. Utilize peer instruction techniques.</td>
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<td>70. Utilize laboratory based (hands-on) instruction.</td>
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<td>71. Generate instructional activities that are associated with the development of problem-solving behaviors.</td>
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<td>72. Effectively build a series of educational experiences which would lead a student to better understanding of: Self-Awareness Career Orientation Career Awareness Career Decision-Making</td>
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<td>73. Use appropriate multi-media equipment and material to improve sensory stimulation and development of the handicapped.</td>
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<tr>
<td>74. Supervise student laboratory experiences to facilitate development of self reliance and resourcefulness.</td>
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</table>
75. Inform school officials of their responsibilities regarding placement and supportive services for the handicapped enrolled in the pre-and vocational program.

76. Organize a student club program to further the social development of handicapped persons.

77. Establish and demonstrate procedures for the safe use, storage, and maintenance of tools and equipment.

78. Develop positive reinforcement techniques to motivate and reinforce the learning process.

79. Estimate time sequence for a unit of instruction.

80. Incorporate business and industrial manuals in curriculum.

81. Present a lecture utilizing non-verbal visuals and related techniques to improve communication with special needs students.

82. Present a demonstration.

83. Employ oral questioning techniques to ensure participation of all students.

84. Employ role-playing and simulation techniques to replicate employment training conditions.

85. Integrate Occupational Safety and Health Administration’s (OSHA) safety and health regulations into training programs.

86. Demonstrate the ability to use materials, processes, and tools to assist special needs students in the pursuit of vocational goals.

87. Modify and utilize equipment, materials, and instructional methodology to facilitate the learning of special needs students.

88. Modify and utilize equipment and materials to facilitate the learning of special needs students.

89. Modify and utilize instructional techniques and strategies to facilitate the learning of special needs students.

90. Consult with supportive teacher(s) in order to extend and implement programs for individual students.

91. Arrange guided field experiences.

92. Conduct a conference with an individual student.

93. Moderate student discussion of sensitive issues.

94. Stimulate learning through "brain-storming", "buzz groups", and "question box techniques".

95. Establish a student tutoring program.

96. Conduct a successful home visitation.

97. Involve the family as a primary source of student reinforcement.

98. Locate support for those with personal adjustment problems (e.g., drug abuse, test anxiety, etc.)

99. Develop a procedure for job relocation or rotation within the lab.

100. Plan and coordinate off-campus or on-campus on-the-job instruction (e.g., workstudy, etc.)
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<th>Know Not Essential</th>
<th>Preferable</th>
<th>Possible</th>
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<tr>
<td>101</td>
<td>Identify counseling methods appropriate for use by industrial educators with special needs learners.</td>
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<td>102</td>
<td>Maintain an appropriate (supportive) attitude toward special needs students.</td>
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<td>103</td>
<td>Develop and utilize value clarification strategies.</td>
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<td>104</td>
<td>Encourage the establishment of appropriate attitudes of regular students toward special needs students.</td>
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<td>105</td>
<td>Help special needs students develop positive attitudes about themselves and work.</td>
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<td>106</td>
<td>Make information available for special needs students on further educational opportunities and/or career advancement opportunities.</td>
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<td>107</td>
<td>Assist employers and supervisors in acquiring techniques to enable them to work effectively with special needs students.</td>
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<tr>
<td>108</td>
<td>Reorganize the physical floor plan of the classroom/laboratory to accommodate handicapped persons.</td>
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<td>109</td>
<td>Aid special needs learners in obtaining work permits.</td>
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<td>110</td>
<td>Organize instructional environments that encourage exploratory activities.</td>
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<td>111</td>
<td>Provide success-producing situations for individual students.</td>
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<td>112</td>
<td>Participate in student-parent conferences.</td>
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<tr>
<td>113</td>
<td>Establish a policy and procedure for job placement.</td>
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<tr>
<td>114</td>
<td>Conduct teacher-to-teacher conferences.</td>
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<tr>
<td>115</td>
<td>Execute emergency procedures in a calming manner in the event of seizure, fatigue, or excessive emotional reaction.</td>
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<td>116</td>
<td>Supervise and coordinate aids, tutors, etc.</td>
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<td>117</td>
<td>Be sensitive to and utilize behavior modification and other adjustment approaches.</td>
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<td>118</td>
<td>Define the operating rules and responsibilities of both the learner and the teacher-manager.</td>
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<tr>
<td>119</td>
<td>Establish order of business each day.</td>
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<tr>
<td>120</td>
<td>Encourage student to express his/her ideas, opinions, and feelings.</td>
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<tr>
<td>121</td>
<td>Provide opportunities for student to achieve recognition and receive personal group approval.</td>
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<tr>
<td>122</td>
<td>Aid student in adjusting to his/her disability.</td>
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<tr>
<td>123</td>
<td>Give attention to the personal needs of the student.</td>
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</tbody>
</table>

**PART 5: EVALUATION AND DISSEMINATION** Competencies dealing with the assessment of changes in the learner, adequacy of the initial prescription, and effectiveness of treatment and teaching procedures. Also includes provision for feedback to involved persons.

<table>
<thead>
<tr>
<th>No. To Know</th>
<th>Know Essential</th>
<th>Know Not Essential</th>
<th>Preferable</th>
<th>Possible</th>
<th>Other</th>
</tr>
</thead>
<tbody>
<tr>
<td>124</td>
<td>Design a system for monitoring student achievement on a regular basis.</td>
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<td>125</td>
<td>Use a variety of performance-based techniques for evaluating a student's competencies.</td>
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<td>126</td>
<td>Maintain student records in an objective manner.</td>
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<tr>
<td>No.</td>
<td>Essential</td>
<td>Not Essential</td>
<td>Knowledge</td>
<td>Performance</td>
<td>Inference</td>
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**PART 6 OTHER Competencies which deal with the overall delivery of the educational process for special needs students**

- Evaluate pupil performance at each objective level.
- Evaluate particular teaching process and strategies as related to individual pupil performance and modify as needed.
- Organize and/or conduct a local program review.
- Develop procedures to evaluate instructional objectives.
- Construct a system of reporting student progress to students and parents.
- Assess the ability of the individual to modify his or her behavior.
- Conduct a parent-teacher conference.
- Develop public relations literature.
- Devise methods of interpreting the special needs industrial education program to parents, teachers, administrators, and community groups.
- Utilize follow-up data and information regarding special needs students leaving or graduating to improve program.
- Develop and use an appropriate filing system to accommodate student related records.
- Prepare those records regarding program development and operation and students that are required by law and school policy.
- Share program development strengths and weaknesses with other professionals.
- Establish and/or utilize advisory groups effectively in instructional development and program operation.
- Conduct an employer appreciation program.
- Obtain public support for vocational programs provided for special needs students.
- Communicate with objectivity and specificity with other professionals.
- Demonstrate a commitment to teaching.
- Demonstrate knowledge of the ethical procedures of a professional.
- Keep abreast of professional developments, societal needs, and technological advances.
- Research current trends in business and industry (e.g., technological practices, employment patterns, training needs, etc.)
APPENDIX E

Examples of Follow-up Materials for Educational Personnel in Maine
December 18, 1979

Dear Colleague:

Help! We need your help. On December 1 a questionnaire about Competencies for Industrial Education Teachers of Handicapped Learners was mailed to you.

The questionnaire lists tasks which have been selected as representative of those needed by industrial educators for teaching handicapped learners. The importance of education for these individuals cannot be over emphasized if they are to achieve a self-supporting and productive role in our society.

I am asking you to help me identify those competencies which are essential for the industrial educator of the handicapped in classes like the ones in your program. I need this information that only you, as an experienced educator, can provide.

Please complete the questionnaire and return it in the stamped envelope that was enclosed. If the questionnaire has been misplaced, please return the enclosed card and another will be mailed to you. Your input is critical to the success of this study and will be used to improve teacher education in Maine. Your response will be kept confidential and no attempt will be made to associate a response with an individual or school.

Thank you for your assistance in this study.

Sincerely,

Ed W. Taylor
Assistant Professor

EWT:skb

P.S. If the questionnaire has been returned, please disregard this letter, and thank you.
No. ____________

Please check (✓) the appropriate statement:

( ) Please send another questionnaire

( ) Questionnaire has not been received

( ) Other ________________________________

Thank you,

[Signature]
Ed W. Taylor
JUST A SHORT NOTE-

Dear Colleague:

I realize that this questionnaire takes about an hour of your valuable time. It is however, the only way I can get your input for improving industrial teacher education in Maine.

It has been sent to teachers and administrators as well as professional individuals identified with programs for the handicapped and disadvantaged in the state. Only you can provide this needed input to our teacher up-grading effort.

Won't you please help by filling out the questionnaire and returning it in the stamped envelope? Thank you again for your valuable assistance.

Sincerely,
APPENDIX F

Examples of Follow-up Materials for "New" Listings of Educational Personnel in Maine.
January 29, 1980

Dear Colleague:

Help! We need your help. On December 21 a questionnaire about Competencies for Industrial Education Teachers of Handicapped Learners was mailed to you.

The questionnaire lists tasks which have been selected as representative of those needed by industrial educators for teaching handicapped learners. The importance of education for these individuals cannot be over emphasized if they are to achieve a self-supporting and productive role in our society.

I am asking you to help me identify those competencies which are essential for the industrial educator of the handicapped in classes like the ones in your program. I need this information that only you, as an experienced educator, can provide.

Please complete the questionnaire and return it in the stamped envelope that was enclosed. If the questionnaire has been misplaced, please return the enclosed card and another will be mailed to you. Your input is critical to the success of this study and will be used to improve teacher education in Maine. Your response will be kept confidential and no attempt will be made to associate a response with an individual or school.

Thank you for your assistance in this study.

Sincerely,

Ed W. Taylor
Assistant Professor

EWT:skb

P.S. If the questionnaire has been returned, please disregard this letter, and thank you.
University of Southern Maine
96 Falmouth Street
Portland, Maine 04103

No. __________

Please check (✓) the appropriate statement:

( ) Please send another questionnaire
( ) Questionnaire has not been received
( ) Other __________________

Thank you,

Ed W. Taylor
Ed W. Taylor
Dear Colleague:

I realize that this questionnaire takes about an hour of your valuable time. It is however, the only way I can get your input for improving industrial teacher education in Maine.

It has been sent to teachers and administrators as well as professional individuals identified with programs for the handicapped and disadvantaged in the state. Only you can provide this needed input to our teacher up-grading effort.

Won't you please help by filling out the questionnaire and returning it in the stamped envelope? Thank you again for your valuable assistance.

Sincerely,
APPENDIX G

Example of Follow-up Materials for Non-Respondent Personnel in Maine
Dear Educator:

Over the last few months, we have been actively seeking input for some needed curriculum change from professionals in the field. Each teacher and principal or director involved with an active industrial education program has been asked to fill out a questionnaire dealing with competencies for industrial education of handicapped learners. This questionnaire was based on a national search of similar activity in related programs.

To date about 38% of the questionnaires have been returned. While this is good for this type of effort, it has been decided to ask those who didn't respond to react to a few items and to provide information about why they chose not to on the original instrument. This will strengthen the reliability of the information already collected thus assisting us in the planning of programs for industrial education in Maine.

Please respond to the eleven items on the reverse side and return this paper by February 29 in the stamped, addressed envelope. Your input is vital and greatly appreciated. Please feel free to include any comments.

Thank you,

Ed M. Taylor

EDT: skb
Directions.

Please read the following competencies and:

1. Determine if the competency is "Essential", "Nice to Know", or "Not Essential". Place a check (✓) in the appropriate space in the column at the left.

2. Determine if the competency should be taught at the "Pre-Service" (undergraduate) level, or could it be equally well taught at a later time through an "In-service" activity. Please place a check (✓) in the appropriate column at the far left.

<table>
<thead>
<tr>
<th>Level</th>
<th>Essential</th>
<th>Pre-Service</th>
<th>In-Service</th>
<th>Other</th>
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</thead>
<tbody>
<tr>
<td>1.</td>
<td>✓</td>
<td></td>
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<td>2.</td>
<td></td>
<td>✓</td>
<td></td>
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<td>3.</td>
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<td></td>
<td>✓</td>
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<td>4.</td>
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<td>✓</td>
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</table>

If you chose not to respond, please check if any of the following were reasons for not filling out the original questionnaire:

( ) Questionnaire too long
( ) Questionnaire items too complicated
( ) Questionnaire asked wrong questions
( ) Topic not important
( ) Topic not appropriate in your situation
( ) Other responsibilities were pressing
( ) Other
( ) No reason

Thank you sincerely for your help.

Ed Taylor
APPENDIX H

List of Developed Objectives with Competencies Showing Reference Competencies from Questionnaire Used in Maine.
### Objective

Develop knowledge of a screening-referral process for special needs students in secondary programs. (1)

Administer diagnostic assessment instruments and utilize techniques for classification and placement of special needs students in pre- and vocational education programs. (2)

Conduct an analysis of a career cluster.

Analyze local or regional job market and determine employment opportunities for handicapped persons. (15)

### Competencies

1. Identify learning styles (1)
2. Identify learning disabilities (4)
3. Identify learning difficulties (2)
4. Identify personality patterns (3)
5. Identify emotional factors (16)
6. Identify reading level (17)
7. Identify symptoms of drug use/abuse (18)
8. Utilize performance-based techniques (1)
9. Analyze interests and aptitudes (14)
10. Identify standardized instruments (19)
11. Develop a process and procedure for student selection (16)
12. Determine knowledge concepts (14)
13. Determine specific job skills (14)
14. Determine general competencies (14)
15. Determine standards of performance (14)
16. Determine basic aptitudes required (14)
17. Conduct a community needs survey (18)
### INDUSTRIAL EDUCATION FOR HANDICAPPED LEARNERS

**MODULE: PRESCRIPTION**

<table>
<thead>
<tr>
<th>Objective</th>
<th>Competencies</th>
<th>Learning Activities</th>
<th>Resources</th>
</tr>
</thead>
<tbody>
<tr>
<td>Develop a system for planning programs and services for each handicapped student.</td>
<td>1. Develop local program objectives (31)</td>
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<td>(31)</td>
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<td>2. Develop a composite profile of learning characteristics for special needs students to be served</td>
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<td>3. Develop cooperative arrangements for team teaching</td>
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<td>4. Inform parents of their responsibility for program planning and evaluation</td>
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<td>5. Obtain necessary information from parents regarding planning and implementation</td>
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<td>6. Collaborate with other educators</td>
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<td>7. Utilize information from other disciplines about conditions of the learner: Sensory Physical Emotional Social Cognitive</td>
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<td>8. Plan modification of facilities and equipment.</td>
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<td>9. Develop alternate methods of: material handling storage clean up</td>
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</table>

Refer special needs students to suitable resource personnel when appropriate. (21)

| | | | |
| | 1. Recommend students use these services when necessary | | (56) |
| | 2. Identify resource people to help prepare instructional materials | | (57) |
| | 3. Aid in guiding special needs students to develop career objectives consistent with abilities and interests (achievable with handicapping conditions) | | (54)(67) |
## INDUSTRIAL EDUCATION FOR HANDICAPPED LEARNERS

### MODULE: PRESCRIPTION

<table>
<thead>
<tr>
<th>Objective</th>
<th>Competencies</th>
<th>Learning Activities</th>
<th>Resources</th>
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</thead>
<tbody>
<tr>
<td>Specify instructional programs for special needs students.</td>
<td>1. Determine relevant occupational cluster information (22)</td>
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<td>2. Direct students into alternate programs (48)</td>
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<td>3. Utilize results of tests to plan instruction (38)</td>
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<td>4. Prescribe remedial math activities (36)</td>
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<td>5. Prescribe remedial reading activities (71) (66)</td>
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<td>Select or develop modules or units of instruction appropriate for special needs students.</td>
<td>1. Adopt or adapt instructional materials (73)</td>
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<td>2. Identify necessary special services (93)</td>
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<td>3. Organize a unit of instruction on career education (32)</td>
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<td>4. Incorporate inductive thinking into curriculum (59)</td>
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<td>5. Incorporate deductive thinking into curriculum (58)</td>
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<tr>
<td>Design instructional strategies</td>
<td>1. Recognize instructional options</td>
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<td>2. Sequence tasks to conform with learning styles, pace, and inferred potential of students</td>
<td>(67) (77)</td>
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<tr>
<td>Translate statements about physical and sensory limitations into statements about instructional alternatives.</td>
<td>1. Utilize information from assessment activities (28)</td>
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<td>2. Develop long range educational options (28)</td>
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<td>3. Identify educational goals in terms of student's disability (49)</td>
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<td>4. Break down long range goals into sequences of enabling goals (30)</td>
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<td>5. Write and develop objectives for mainstreamed special needs students (consider entry level of student) (60) (52)</td>
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<td>6. Prioritize educational objectives (50)</td>
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</table>
### INDUSTRIAL EDUCATION FOR HANDICAPPED LEARNERS

**MODULE: PRESCRIPTION**

<table>
<thead>
<tr>
<th>Objective</th>
<th>Competencies</th>
<th>Learning Activities</th>
<th>Resources</th>
</tr>
</thead>
</table>
| Identify the cognitive, affective, and psycho-motor level of each student in order to prescribe an individual education plan. | 1. Use results of achievement tests and other assessments to plan instruction (24) (25)  
2. Understand and follow state and federal guidelines (41)  
3. Establish performance objectives based on tasks in occupations (45)  
4. Develop the Individual Education Plan (46) | | |
<table>
<thead>
<tr>
<th>Objective</th>
<th>Competencies</th>
<th>Learning Activities</th>
</tr>
</thead>
<tbody>
<tr>
<td>Be aware of student's interaction with peers, teachers, parents and others</td>
<td>1. Assist student in interpreting his own behavior</td>
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<td>Select and utilize appropriate techniques for instruction</td>
<td>1. Use small group instruction</td>
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<td>2. Use peer instruction techniques</td>
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<td>3. Use laboratory-based activity</td>
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<td>4. Present demonstration</td>
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<td>5. Employ questioning</td>
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<td>6. Use role playing activity</td>
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</tr>
<tr>
<td></td>
<td>7. Demonstrate ability to use materials, tools, and processes</td>
<td></td>
</tr>
<tr>
<td></td>
<td>8. Supervise student laboratory experience</td>
<td></td>
</tr>
<tr>
<td></td>
<td>9. Develop student self-reliance and resourcefulness</td>
<td></td>
</tr>
<tr>
<td></td>
<td>10. Establish and demonstrate safe use, storage, and maintenance of tools and equipment</td>
<td></td>
</tr>
<tr>
<td>Effectively build a series of educational experiences which lead to a better</td>
<td>1. Include self-awareness activities</td>
<td></td>
</tr>
<tr>
<td>understanding of career development</td>
<td>2. Develop career awareness</td>
<td></td>
</tr>
<tr>
<td></td>
<td>3. Provide career orientation</td>
<td></td>
</tr>
<tr>
<td></td>
<td>4. Develop career decision making skills</td>
<td></td>
</tr>
<tr>
<td>Modify and utilize equipment, materials, and instructional methodology to facilitate the learning of special needs students.</td>
<td>1. Formulate instructional strategies and techniques to help learning of special needs students</td>
<td></td>
</tr>
<tr>
<td></td>
<td>2. Utilize appropriate media equipment and materials to improve sensory stimulation</td>
<td></td>
</tr>
<tr>
<td></td>
<td>3. Present a lecture utilizing non-verbal visuals and related techniques to improve communication</td>
<td></td>
</tr>
<tr>
<td></td>
<td>4. Incorporate appropriate business, OSHA, and industrial manuals in curriculum</td>
<td></td>
</tr>
<tr>
<td>Objective</td>
<td>Competencies</td>
<td>Learning Activities</td>
</tr>
<tr>
<td>--------------------------------------------------------------------------</td>
<td>--------------</td>
<td>---------------------</td>
</tr>
<tr>
<td>Develop positive reinforcement techniques to motivate and reinforce the learning process.</td>
<td>(78)</td>
<td></td>
</tr>
<tr>
<td>Organize student club to further the social development of handicapped persons and others.</td>
<td>(76)</td>
<td></td>
</tr>
<tr>
<td>Inform school officials of responsibilities regarding placement and supportive services for handicapped learners.</td>
<td>(75)</td>
<td></td>
</tr>
</tbody>
</table>
## INDUSTRIAL EDUCATION FOR HANDICAPPED LEARNERS

### MODULE: NURTURE

<table>
<thead>
<tr>
<th>Objective</th>
<th>Competencies</th>
<th>Learning Activities</th>
<th>Resources</th>
</tr>
</thead>
<tbody>
<tr>
<td>Extend and implement programs for individual students - Give attention to personal needs of the student. <em>(90)(123)</em></td>
<td>1. Consult with supportive teachers <em>(90)</em></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>2. Conduct conferences with individual <em>(92)(101)(103)</em></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>3. Establish student tutoring system <em>(95)</em></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>4. Conduct successful home visitation and involve family as a source of <em>(96)</em> primary reinforcement <em>(99)</em></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>5. Participate in student-parent conferences <em>(112)</em></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>6. Plan and coordinate on- and off-campus OJT programs <em>(100)</em></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>7. Aid special needs students with work permits <em>(109)</em></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>8. Help develop positive attitude about self <em>(109)(105)</em></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>9. Encourage student to express ideas, etc. <em>(120)</em></td>
<td></td>
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</tr>
<tr>
<td></td>
<td>10. Provide information about further education and/or advancement for special needs student <em>(106)</em></td>
<td></td>
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</tr>
<tr>
<td></td>
<td>11. Aid student in adjusting to his/her disability <em>(122)</em></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Establish and maintain an appropriate group learning environment which can provide success for special needs students and others.</td>
<td>1. Arrange guided field experiences <em>(91)</em></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>2. Moderate student discussion of sensitive issues <em>(73)</em></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>3. Stimulate learning through Brain-storming, Buzz groups, and question box techniques <em>(94)</em></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>4. Locate support for those with personal adjustment problems <em>(98)</em></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>5. Develop procedure for job relocation or rotation in laboratory <em>(99)</em></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>6. Provide success producing situations <em>(111)</em></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
### Objective

Establish and maintain an appropriate group learning environment which can provide success for special needs students and others.

---Continued---

<table>
<thead>
<tr>
<th>Objective</th>
<th>Competencies</th>
<th>Learning Activities</th>
<th>Resources</th>
</tr>
</thead>
<tbody>
<tr>
<td>Establish and maintain appropriate attitudes</td>
<td>7. Be sensitive to and use behavior modification and other adjustment approaches</td>
<td>(119)</td>
<td></td>
</tr>
<tr>
<td></td>
<td>8. Define operating rules and responsibilities of both learner and teacher-manager</td>
<td>(118)</td>
<td></td>
</tr>
<tr>
<td></td>
<td>9. Establish the order of business each day</td>
<td>(119)</td>
<td></td>
</tr>
<tr>
<td></td>
<td>10. Provide opportunities for student to achieve recognition and receive personal group approval</td>
<td>(121)</td>
<td></td>
</tr>
<tr>
<td></td>
<td>1. Encourage the establishment of appropriate attitudes of regular students toward special needs students</td>
<td>(104)</td>
<td></td>
</tr>
<tr>
<td></td>
<td>2. Encourage the establishment of appropriate attitudes of special needs students toward regular students</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>3. Encourage the special needs student to develop positive attitudes toward self and work</td>
<td>(105)</td>
<td></td>
</tr>
<tr>
<td></td>
<td>4. Encourage regular students to develop positive attitudes toward self and work</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>5. Encourage appropriate teacher attitudes by conducting teacher-teacher conferences</td>
<td>(114)(102)</td>
<td></td>
</tr>
<tr>
<td>Objective</td>
<td>Competencies</td>
<td>Learning Activities</td>
<td>Resources</td>
</tr>
<tr>
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<tr>
<td>Establish and modify an appropriate physical environment.</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>1. Reorganize physical floor plan of classroom/ laboratory</td>
<td>(100)</td>
<td></td>
</tr>
<tr>
<td></td>
<td>2. Organize instructional environments which encourage exploratory activities</td>
<td>(110)</td>
<td></td>
</tr>
<tr>
<td></td>
<td>3. Execute emergency procedures in a calming manner in event of seizure, fatigue, or excessive emotional reaction</td>
<td>(115)</td>
<td></td>
</tr>
<tr>
<td></td>
<td>4. Supervise and coordinate aides, tutors, etc.</td>
<td>(116)</td>
<td></td>
</tr>
<tr>
<td>Establish and maintain a working relationship with industry and employers.</td>
<td>1. Assist employers and supervisors in acquiring techniques to enable them to work with special needs students</td>
<td>(107)</td>
<td></td>
</tr>
<tr>
<td></td>
<td>2. Plan and coordinate on- or off-campus on-the-job instruction (e.g., workstudy)</td>
<td>(113)</td>
<td></td>
</tr>
</tbody>
</table>
## INDUSTRIAL EDUCATION FOR HANDICAPPED LEARNERS

### MODULE: EVALUATION/DISSEMINATION

<table>
<thead>
<tr>
<th>Objective</th>
<th>Competencies</th>
<th>Learning Activities</th>
<th>Resources</th>
</tr>
</thead>
<tbody>
<tr>
<td>Design a system for monitoring student achievement on a regular basis. (1.24) (1.30)</td>
<td>1. Use a variety of performance based techniques</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>2. Maintain student records in an objective manner (1.26)</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>3. Evaluate pupil performance at each objective level (1.27)</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>4. Conduct system of reporting student progress to student/parents (1.31)</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>5. Evaluate particular teaching process and strategy as related to student performance and modify (1.38)</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>6. Assess ability of individual to modify his/her behavior (1.32)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Organize and/or conduct a local program review. (1.29)</td>
<td>1. Utilize follow-up data from students who leave or graduate to improve the (1.36) program</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>2. Share program strengths and weaknesses with other professionals (1.39)</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>3. Establish and utilize advisory groups (1.40)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Develop and use a filing system to accommodate student records. (1.37)</td>
<td>1. Prepare records of program and development as required by law</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>2. Prepare records of students and development as required by law (1.38)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Develop public relations literature (1.34)</td>
<td>1. Devise methods of interpreting special needs and education programs to: parents, teachers, administrators, and community groups (1.35)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Obtain public support for vocational programs for special needs students. (1.42)</td>
<td>1. Conduct an employer appreciation program (1.41)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Conduct a parent-teacher conference. (1.33)</td>
<td></td>
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<td></td>
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</tbody>
</table>
**INDUSTRIAL EDUCATION FOR HANDICAPPED LEARNERS**

<table>
<thead>
<tr>
<th>Objective</th>
<th>Competencies</th>
<th>Learning Activity</th>
<th>Resources</th>
</tr>
</thead>
<tbody>
<tr>
<td>Communicate with objectivity and specificity with other professionals.</td>
<td>(143)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Demonstrate a commitment to teaching.</td>
<td>(144)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Demonstrate knowledge of the ethical procedures of a professional.</td>
<td>(145)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Keep abreast of professional developments, societal needs, and technological advances.</td>
<td>(146)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Research current trends in business and industry (e.g., Technological practices, employment practices, and training needs, etc.).</td>
<td>(147)</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
APPENDIX I

Responses to Follow-up for Non-Respondents
Appendix I contains the short form of the questionnaire which was sent to a systematic random sample of the population which did not respond in any way to the original appeal or the follow-up. It contains the results of the return from this activity. A listing of comments received and a table (Table 26), which shows the rating of the systematic sample and the overall population of the study for the 11 items on the short form of the questionnaire.

Of the 48 short form questionnaires sent out, 20 were returned (41.7%). Of these, 16 contained at least some data regarding the competencies. All questionnaires contained some information. As was mentioned in Chapter 4, there was no follow-up of this step of the study.
Directions:

Please read the following competencies and:

1. Determine if the competency is "Essential", "Nice to Know", or "Not Essential". Place a check (✓) in the appropriate space in the column at the left.

2. Determine if the competency should be taught at the "Pre-Service" (undergraduate) level, or could it be equally well taught at a later time through an "In-service" activity. Please place a check (✓) in the appropriate column at the far left.

Competency | Essential | Nice to Know | Pre-Service | In-service | Only
--- | --- | --- | --- | --- | ---
1. Develop knowledge of a screening-referral process for remediation of special needs students in secondary programs. | 6 | 7 | 1 | 4 | 8 | 0
2. Utilize vocational evaluation systems and/or instruments which are appropriate for special needs learners. | 6 | 6 | 2 | 2 | 9 | 1
3. Design instructional strategies appropriate for and effective with different special needs learners. | 11 | 2 | 1 | 6 | 6 | 0
4. Select or develop instructional materials which are appropriate for different special needs learners. | 10 | 3 | 2 | 6 | 6 | 0
5. Develop a cooperative teaching strategy (resources or consulting) for instruction in basic concepts and competencies. | 6 | 5 | 3 | 3 | 5 | 1
6. Modify and utilize equipment and materials to facilitate the learning of special needs students. | 7 | 5 | 2 | 3 | 7 | 1
7. Consult with supportive teacher(s) in order to extend and implement programs for individual students. | 8 | 4 | 1 | 3 | 9 | 0
8. Maintain an appropriate (supportive) attitude toward special needs students. | 12 | 1 | 0 | 9 | 4 | 0
9. Design a system for monitoring student achievement on a regular basis. | 11 | 2 | 0 | 5 | 7 | 0
10. Utilize follow-up data and information regarding special needs students leaving or graduating to improve program. | 4 | 1 | 0 | 4 | 6 | 1
11. Communicate with objectivity and specificity with other professionals. | 5 | 6 | 2 | 4 | 6 | 2

No response: 5 7

If you chose not to respond, please check if any of the following were reasons for not filling out the original questionnaire:

- Questionnaire too long
- Questionnaire items too complicated
- Questionnaire asked wrong questions
- Topic not important
- Topic not appropriate in your situation
- Other responsibilities were pressing
- Other
- No reason

No response: 6

Thank you sincerely for your help.

Ed Taylor
### TABLE 26
RESPONSES TO SHORT FORM QUESTIONNAIRE COMPARED TO
OVERALL RESPONSES OF TOTAL POPULATION

<table>
<thead>
<tr>
<th>Competency</th>
<th>Essential</th>
<th>Short Form</th>
<th>Total</th>
<th>Essential</th>
<th>Percent</th>
<th>Pre-Service</th>
<th>In-service</th>
<th>Other</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>Original No</td>
<td>Original %</td>
<td>No.</td>
<td>Response</td>
<td>No.</td>
<td>%</td>
<td>No.</td>
<td>%</td>
<td>No.</td>
<td>%</td>
</tr>
<tr>
<td>1</td>
<td>63.4</td>
<td>1</td>
<td>14</td>
<td>6</td>
<td>42.9</td>
<td>4</td>
<td>33.3</td>
<td>8</td>
<td>66.7</td>
</tr>
<tr>
<td>13</td>
<td>50.4</td>
<td>2</td>
<td>14</td>
<td>6</td>
<td>42.9</td>
<td>2</td>
<td>15.4</td>
<td>9</td>
<td>69.2</td>
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<tr>
<td>24</td>
<td>68.9</td>
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<td>14</td>
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<td>78.6</td>
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<td>6</td>
<td>50.0</td>
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<td>25</td>
<td>67.1</td>
<td>4</td>
<td>15</td>
<td>10</td>
<td>66.7</td>
<td>6</td>
<td>50.0</td>
<td>6</td>
<td>50.0</td>
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<tr>
<td>63</td>
<td>58.9</td>
<td>5</td>
<td>14</td>
<td>6</td>
<td>42.9</td>
<td>3</td>
<td>33.3</td>
<td>5</td>
<td>55.6</td>
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<tr>
<td>88</td>
<td>66.7</td>
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<td>14</td>
<td>7</td>
<td>50.0</td>
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<td>27.3</td>
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<td>92.3</td>
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<td>69.2</td>
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<td>30.8</td>
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<tr>
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<td>84.6</td>
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<td>41.7</td>
<td>7</td>
<td>58.3</td>
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<tr>
<td>136</td>
<td>48.8</td>
<td>10</td>
<td>14</td>
<td>4</td>
<td>28.6</td>
<td>4</td>
<td>36.4</td>
<td>6</td>
<td>54.5</td>
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<tr>
<td>143</td>
<td>65.5</td>
<td>11</td>
<td>13</td>
<td>5</td>
<td>38.5</td>
<td>4</td>
<td>33.3</td>
<td>6</td>
<td>50.0</td>
</tr>
</tbody>
</table>
Comments received from the short form questionnaire —
- The "impressive"? jargon clouds the issues so much that too much time is spent interpreting the questions! Too ambiguous to be reliable, Unrealistic! Thanks, ____________

- Not really designed for administrators to complete.

- Not direct and specific enough! Vague!

- Person who wrote questionnaire must have his/her doctorate in gobbledygook! Come out in the real world once in a while.

- I am primarily a chemistry-physics teacher teaching a semester course in electronics.

- Form was returned to your office. ______ ________.
- I did respond the original! ______ ________.
- Sounds like you are aiming at how best to meet the needs "piggy backed" on to us by the current trend known as "mainstreaming". __________, ____________ (School)
- I did and sent it back. ______ ________.
APPENDIX J

Comments Received from Maine Educational Personnel - Separate from Returned Questionnaire.
The following comments were received in addition to the comments actually written on the questionnaires themselves. Some were written on the reply postal card while others were on separate papers. Names of persons and schools are not reported to ensure confidentiality of the respondents.

039 - Telephone conversation- expressed support, suggested examining attitudes of different groups - concern with attitudes based on "recent court cases"

043 - I don't have handicapped or disadvantaged students - but fill out questionnaire anyway.

066 - Sent it back (not received by 29 Feb. - ET)

085 - I read it all and found that I could not help for my area of electronics has had none.

149 - I am not qualified

153 - My background is Carpentry. I am a Carpentry Instructor with very little knowledge of handicapped learners. The wording of your questionnaire is such that I don't even understand most of the questions. Any answers I might give you would be meaningless.

166 - I have no plans to fill out the questionnaire

167 - I feel the questionnaire is not appropriate, so It will not be completed.

182 - I found the questionnaire form you wrote about not receiving. You were right, I did not send it in, I was double mailed. I returned the other form. I do not know the number on it. I request to keep the 2nd copy for my use in working with youth and staff. It makes a good reference. If you need it returned I will do so. Let me know. Best of luck in your work.

200 - Because of the length and complexity of the questionnaire, I did not return it. I question validity of results with such a complex instrument.

202 - I started the questionnaire and after spending ½ hour found it to be very confusing and hard to follow. I don't feel I have the time to provide you with honest answers to this instrument.

223 - Started before X-mas holiday- Lost in Holiday Shuffle- Found after holiday recess- Completed at 9:15 PM 1/7/80

A hell of a lot of work!!! I am deeply sorry for any handicapped person. However, in good conscience I do not feel, even if the hierarchy in Washington do decree it, that mainstreaming is the "way to go". It is not fair to the others to retard them so the handicapped can keep pace nor fair to the handicapped to be daily left behind. They would be better in schools of their own handled by people especially trained for this or even on the job training.
Fortunately for me this is my last year and I have none.

Cont'd. As a taxpayer I question many areas of this special education and wonder if it withstand a strong "cost benefit" study. It has built a good bureaucracy and cost a lot of towns & cities a lot of money!!

Too long not worth time to fill out, if you have a short questionnaire with key questions that can be done in about ½ hr. send it out.

As of Jan. 18th I will be leaving Edu., Perhaps you would rather have my replacement fill out the questionnaire. If so, Please send a new form.

The questionnaire was discarded because I have not had any experience or training about handicapped learners.

These people are handled by a special ed. section in our system- have not had experience in this area.

Not teaching in Maine this year.

One of my comments concerning your survey is that there were no provisions made to differentiate between those competencies needed to deal with handicapped learners on a full time basis and those needed to deal with handicapped learners in a mainstreamed setting or in a small group which meets for a short time each week. An industrial educator dealing with handicapped learners on a full time basis would (in my opinion) consider more of the listed competencies "essential" than an educator dealing with handicapped learners during just a small segment of his teaching day.

I currently deal with handicapped (emotionally disturbed and learning disabled) students both in mainstreamed and small group settings. One of the major problems I experience when planning for these students is answering the question: "What do these students need to know and what should I be teaching them?". Some of my thoughts are to teach:

Survival Skills- how to change a light bulb, measure a board, paint a wall, change a fuse, etc. depending on the level of the student.

High Success Activities- projects students can make, take home, and be proud of - should build self confidence.

Activities to increase Manual Dexterity - driving nails and screws into a board, sawing in a straight line with a hand saw, drilling holes, etc.

Pre-vocational skills - may or may not apply in the middle school setting. How am I to determine where (ability wise) this student will be when he leaves high school in 4 to 6 years?

If you have any thoughts on what I should be teaching (either your own or state mandates) I would be most appreciative if you would pass them along.

Sorry about the delay with the survey and best of luck with it.
The idealistic language of this survey makes it impossible for me to fill out. This survey reflects the unrealistic approach which Gorham has had for years. When Gorham can get into the real world of working with children maybe I can be of assistance.

Have been hospitalized for the past 2½ weeks. I'll send it in as soon as I can. OK?

You might get a better and more accurate response to this questionnaire if you didn't use so much educational jargon, but used the language of everyday educators and people. To read and understand what is asked took considerably more than 1 hour of my time, and of my colleagues too.

Sorry, X-mas Holiday slow down, will get it to you as quickly as possible, sorry for the delay.

I would doubt you will get many replies to this questionnaire. You have got to be kidding. It would take me a long time with a dictionary to figure out your terminology and some hours of deep thought to answer each of these fairly. It also seems impossible to answer them as cut and dried as your answer columns call for. You are however, addressing an area that is a very real problem to myself and most other I.A. educators in this day of mainstreaming special needs students. I would therefore like to offer the following thoughts to you (in plain english) and hope they will be of use to you in your study.

1. The school should provide a special needs specialist to handle P.E.T., screening etc. (ours does)
2. As an undergraduate an I.A. or Voc. teacher should have enough training in a very specific way so that he will know that he is prepared to receive and handle the problems of teaching special needs students along with his regular ones.
3. At least six credit hours should be offered through Gorham to provide for in-service training for I.A. & Voc. teachers. Courses should be practical and teach specific methods of dealing with special needs students. People who are actually teaching special needs students in a shop situation should run the courses.

I have sent it back (Not received as of 29 Feb. - ET)

Question- Does this apply to Home Economics?

It is very encouraging to see that attention is being given to handicapped learners in the Industrial Education Curriculum. The integration of handicapped students into Maine classrooms and labs has had a significant effect on "classroom teaching" today.
This area should receive attention at the undergraduate level of teacher preparation. Prospective teachers should have a background and be aware of the problems that many handicapped learners possess. If handicapped students are to be mainstreamed into classrooms and labs, factors such as class size, teacher aides, etc. must be considered. These students must be treated as individuals, with their own particular learning disabilities. Many of the competencies in your questionnaire seem to approach the problem on a group basis. I question this approach.

My only criticism concerns the questionnaire. As Dr. Mitchell would say in his course Research Seminar - "Your research instrument should be complete yet concise."

I found the questionnaire to be somewhat cumbersome and redundant.

- The enclosed questionnaire arrived just recently and does not have much influence on our program of study at __________. We do not have any handicapped individuals at __________, and in my 9 years at the school, I can not think of one such person.

My course is Technical Drawing and is designed for the Science and Engineering oriented students; therefore, I return the questionnaire, and wish you good luck in your work.

In looking over your questionnaire I note that it is developed primarily for teachers in specific areas of Industrial Education. As an Administrator of a Regional Vocational Technical Center I'm afraid my responses would be more general than specific. I phoned your office this afternoon (26 Dec.) but you apparently were on vacation. How do you wish me to respond or do you prefer that I pass it on to a member of my staff involved in teaching the handicapped? Please advise.

I, A. Instructor spent one hour and did not finish form, tossed it out in frustration.

I, A. teacher responded

Not applicable in my school

Do not want to spend 1 hr. completing.

Please disregard my request for a 2nd copy. I located my original copy.

Questionnaire too complex and too lengthy to complete.

Do not feel I can satisfactorily answer questionnaire. Sorry.
I'm sending along our reaction to your survey concerning competencies for I.E. teachers of handicapped students.

1. Our handicapped are identified and mainstreamed— and we have very few.
2. Our vocational instructors are primarily non-degree personnel and consequently cannot identify with 99% of your survey questions.
3. Their involvement with handicapped students is direct, realistic and productive.
4. A response to your questionnaire would contain little in the way of validity.
5. Our instructors do not feel qualified to comment on the questionnaire because of no formal background in special education.

Perhaps a better approach to your survey would be to contact ______, Director of Region __, in ______ and have his administrator of handicapped programs become involved. (Note: Specified individual was contacted and invited to participate - ET)

I am not an industrial educator. My areas are Math and Reading.

This questionnaire has been completed by some members of our faculty and also my vocational director, ____________ and _______ completed the questionnaire for me.

This does not apply to us.

Takes about 2 - 2½ hours to do. Far in excess of reasonable request.

Has been returned.

In answer to your recent correspondence dated December 18, __________, our Industrial Arts Instructor, received this same questionnaire from you, filled it out and returned it to you. As he is much more cognizant of the information desired in this questionnaire, I felt it unnecessary to duplicate the one he returned to you. If you have any more questions regarding the above, please do not hesitate to drop me a line.

As a botanist and horticulturist, most all of my experience in working with the handicapped, both emotionally and physically, has been here at the __________, in a program which I helped to develop to deal with both vocational and activity type skills. Although much can be learned through the actual work experience (by the instructor) about the techniques of diagnosis, treatment, nurture, etc., previous knowledge would certainly help toward making the process more efficient.

Many schools across the country now offer degree programs in horticultural therapy - Could this be a possibility for the University of Maine System someday?
I have been incorrectly identified as a vocational/special ed. teacher. I taught English last year & am not teaching now.

N/A to me. I am not an industrial teacher and most questions do not apply.

I sent this back. (not received as of 29 Feb. ET)

I am not an Industrial Arts teacher. I passed your questionnaire on, however.

Questionnaire was completed and returned. (not received as of 29 Feb. ET)

As this is my first year teaching vocational education (building trades) to high school students, I do not feel qualified to answer your questionnaire regarding handicapped learners. I'm sorry I cannot help you at this time, but I may be able to contribute to your study when I have more experience in the teaching profession.

Has been returned several weeks ago. (not received as of 29 Feb. ET)

Questionnaire completed and returned. (not received as of 29 Feb. ET)

If my assumption of what you're trying to accomplish is correct then I feel it's a good idea. As far as special needs students are concerned I feel that they should be permitted in a I.A./ Voc. environment as long as they are able to function without endangering themselves or anyone else. I do feel that the concept of mainstreaming has lost sight of the special conditions that exist in a shop situation. I think that many of the special needs students that I have been in contact with do not belong in the shop program.

Jr. high program of less than 50. We have little or no experience with handicapped youngsters and doubt that our input would be very valid. Sorry can't be of help!

I have received your questionnaire No. ---910. This is the second questionnaire that I have received. The first one was addressed to ________ High School and the principal forwarded it to me. This questionnaire was completed and mailed two days later. It is possible that you wanted the first questionnaire to go to ________ who taught at ________ last year. He now teaches at ________. After taking EDU 550, I know how important a questionnaire is to the researcher. I am not filling out questionnaire #---910 nor am I forwarding this to ________ at ________ since I don't want this mix up to spoil your research. Therefore I am returning # ---910 to you. If you want me to fill out the questionnaire again, feel free to send it back to me. (I will complete it and mail it back the same day.) Again, I am more than happy to help you with your research; however, I don't want this mix-up to spoil your findings. I hope that this has been of some help to you.
P.S. I don't have the number of the questionnaire that I filled out for you. I clearly remember mailing the first questionnaire.

- Completed and returned. (not received as of 29 Feb. -ET)

- I had completed and returned one several weeks ago. Send another and I'll redo it. (not received as of 29 Feb. -ET)

- Returned. (not received as of 29 Feb. -ET)
APPENDIX K

Comments Received from Maine Educational Personnel - Included on Returned Questionnaires
APPENDIX K

The following comments were received on the questionnaires or attached to them. The serial number of the questionnaire is noted at the left. If the comment refers to a specific item on the questionnaire, that number is noted also.

011  Dear Sir:

  I feel there is some mistake!! I am not an industrial arts teacher! I am a Political Science, History teacher; however, I also teach one class of Pilot training, but have no connection with Ind. Arts. Sincerely, ____________

018  102  attitude toward special needs students!!
     123  personal needs of the student!!
     144  Demonstrate  commitment  teaching
     145  Demonstrate  ethical procedures of a professional
     146  Keep abreast of professional developments, societal needs, and technological advances.

022  Sorry I took so long. I hope this is still worthwhile to you. ___

023  019  Now doing with craft committees.
     027  ?
     028  Time - Time - Needed but
     029  Again Time
     031  On going now
     032  On going program
     040  with guidance
     041  Director's problem
     042  guidance
     043  with guidance
     046  Full time staff job. No time - if you are teaching
     047  Get funds first - too much time wasted - sorry nice but no funds
     050  Don't we now ??
     054  Support programs - guidance, nurse, social workers
     058  ?
     066  ?
     067  guidance
     072  Not #1 in Voc. Ed. but do same.
     075  Job of State Department
     076  No Time
     081  ?
     093  ?
     095  guidance
     096  Your kidding
     097  I wish
     098  if available
Continued.

? No Time

If possible guidance

Any good D.H. will do same guidance on going in most good schools

They call them report cards Job for trained counselors guidance

State Dept. guidance - or follow-up at State level?

Federal Laws - State & Local Par. Good luck on your doctorate

Waste of time and effort

(specialists) - usually do not want or seek the opinion of Voc. educator. Be forceful!!
The error rate on previous eval's is high.

Teacher normally has no control over this.

80% of H.S. students.

Impossible with 36 students.

What can he do not what does he want to do.

This is important with all students.

These may lead to goals that are too narrow!

The teacher gets very little help in this area. These people are overloaded.

Good! But make sure we meet entry level skills.

Don't have time to do this!

No! No! No! All this does is eliminate the necessary re-assessment!

If a teacher is good at this he may never have to teach a handicapped student.

Never! Every student must be treated as an individual.

How many businesses would do this in order to hire him?

With my budget? I can't afford to buy new textbooks. This should be available to all students.

Administration has been informed of this and their reaction is to ignore them. We are required by law to be involved in the P.E.T. process but we are continually given students with learning problems with no prior knowledge of their problems & no input in P.E.T. process.

Impossible at R.V.T.C.'s.

Again time becomes a problem. With mainstreaming we must not spend all our time with these students.

This is a bigger problem than most people think.

Good job for co-op ed.
Continued.
101 I highly recommend project T.E.A.C.H. for use in this area. T.E.A.C.H. methods have been very helpful in my classes.
104 This needs special attention. It is a big problem in our school system.
108 See comment on #47 & #48. Nice to do but creates problems.
122 It is important to treat all students the same. His self image will improve if he thinks you believe he is equal to other students.
140 These groups do not work. Businessmen do not have the time to be effective. In most cases administration ignores their recommendations!
If you have any questions on these responses give me a call. I would be happy to talk with you on this subject. __________.

Very special work not for regular teachers.
010 They (regular teachers) could help.
016 Not regular teachers.
028 Should be done with a specialist.
035 \textit{achievement tests} - not with special ed.
039 Should be done with a specialist
067 \textit{academic}
075 Not the regular teacher.
100 Should be done through Coop. Ed. Coordinator - many laws involved.
116 Only for our field of study.
141 Only Coop. Ed.
This is really too long -

I personally believe that very few teachers can handle mainstreamed students along with regular students. I have had to deal with only a couple of minor handicapped students and find it very difficult to work with them and regular students at the same time. I believe that handicapped students should remain in a class of their own with trained teachers and not mainstreamed.

I have no experience or training in special education, therefore; I have no way of identifying needs & competencies of the handicapped.

Please note: In my opinion, essentially all of the items would be either "essential" or "nice to know", but only providing that this work is done primarily by the Guidance Department, administration and/or other agencies. I truly feel that if a teacher's responsibility is to "teach" the subject he was employed to teach, then that in itself
Continued.

is a "full time" job. There is no way a teacher would have time to perform the multitude of activities outlined in this survey! Personally, I am sick and tired of the tendency of making "teachers" the scapegoat for the ills of our society! If this type of information is really desired on our students - and I'm not saying it isn't - then let's require the financing needed for the necessary "specialists" to do this work!

174 Have not taught handicapped students or learners.

191 I seem to be on a double mailing list. I have filled out the other survey form and am returning this one.
This survey is getting boring to complete - too much of minor aspects which are difficult to respond to.
Many questions are not knowledge related but to performance
054 too similar to #49
063 (cooperative) - with whom?
That which is "Nice to Know" by definition is in fact not essential!?!?
106 available
131 Construct
132 modify his
This questionnaire was too long and not particularly well done!

This questionnaire is incredible!
This survey is so long that one does not particularly want to answer all those questions as closely as possible!
It is presumed that impaired students should be mainstreamed in Industrial Education. I do not agree, but have had all types in my eight year teaching career with no training, a waste all the way round.
In answering these I have been forced to suppose that you believe that we have only three to five total students, handicapped and other wise. In normal sized classed the handicapped have no place ever. Therefore all related training is "Not Essential".
I have marked many as "not essential" as I feel they would not apply at Jr. High School.
When the (other) column is checked, it indicates that this should not be the Industrial Educator's responsibility.
052 ? Into where
075 Their responsibilities - who am I to tell them thier responsibilities?
093 ? ambiguous
141 Don't know what this is.

144 ?

019 State and Fed. Social workers
082 Dumb question ?
092 Why??
096 Successful - how do you make it successful?
097 Try to involve the family.....
034 - dangerous
065 - difficult
092 - automatic
098 - to some extent

015 only known through students
016 guidance
019 dealt with through specific programs.
032 done through other classed provided
034 guidance
038 when available and applicable
043 usually dealt with remedial tester for special services
045 not very often done
055 many times lack of parent interest
063 excellent idea - hard to incorporate
067 guidance
079 very difficult - all classed different

008 more courses in drug abuse should be offered at the college level.
041 I feel that a course taught at the college level dealing with
  federal and state guidelines and regulations would be very good.

082 ?
143 - 147 Anytime

Part 1 - Most of this section is not handled by the classroom teacher
  but by the person in charge of special education.
028 done by Special Ed Dept.
029 "
030 "
031 "
034-039 ""
046 "
075 school officials already know their responsibilities.
113 done by others
116 who has aids?
137 done by others - Special Ed.
138 done by Special Ed.

in-service = this is understood as taking place during time of
  teaching - an in-school program through guidance.
006 function of the school guidance dept.

I feel this questionnaire is too long to complete and most answers are
  going to be invalid due to its length. Most (all) questionnaires should
  not be longer than 10 minutes.

087-088 same

This survey would take at least 1½ hours to do adequately. I can't
  spare that kind of time at this point in my life.
010 Special services/Special ed. should do this - not practical for IA teachers.
015 yes! yes!
038 I question the intent (wording) of this question
039 Special ed.'s responsibility

006 ?

014 guidance function

082 on what?
106 guidance counselor if available
109 guidance or special services
The regular classroom teacher of Industrial Arts with a full schedule would not be able to handle a class of special abilities or learning disabled students properly without adequate preparation, background and prep time to organize, analyse, develop, assess, devise, share, conduct, survey, consult, establish, modify, etc.-the needed competencies listed.

036 takes too long to decipher and doesn't apply to us.

037 Too many questions. Too hard a format. Need more plain language.

059 crossed out
144 none relevant - you mean you think someone would go through all the rest of this stuff and not be committed-at the present "high rating" of teaching anyone who goes into the field maybe should be "committed".

420 Since I have never taught a handicapped learner, my opinion would not be beneficial. Too long - to be effective !?!

437 Many of the essential items listed could best be performed by special ed. persons who are trained to do them. I.A. or Voc. teachers need to know how to recognize problem students & how to refer them & how to work with guidance counselors & spec. ed. people.

011 what is available for such analysis
012 each student is different
013 what is appropriate for special students
016-017 within area of specialty
020 team teaching is difficult with special kids
021 when to refer students
026 comes with experience
026-028 individualized programming while inservice or after initial student teaching
036-037 awareness of these and accompanying behavior patterns
038 individualized programs
045 goals
048 will find their own methods
049 what you can expect
050 how/what order to approach objectives
053 social development
054 that (46)
061 can't shouldn't totally trust test scores reasons for low scores too uncontrollable
Part 3: incorporate into education courses of "normal" students

065 needs experience in this area first
066 knows student
068 * very important
069 carefully
073 how to use equipment properly
076 include in clubs, but not separate
079 expensive

PART 4: These should be included in all bases of education but just specials:
100 Planning is necessary. On-the-job training is good but why planning at school
102 towards all students
103 values education for teachers themselves
110 necessary for all classes
115 emergency first aid
119 new teachers need extreme planning ahead
139 MAIA
Industrial internship required of all Ind. Students not just I.T. students.

With the knowledge I lack concerning many of these concepts, this form doesn't have much validity.

I feel many of the items in this questionnaire are intended more for guidance personnel and if IA personnel must deal with them who will do the actual teaching? Many things at the college level are idealistic but some are not too realistic in actual teaching positions.

I realize these objectives are an ideal situation; but it will mean five years of college, cutting class loads, having a part time secretary with a computer, and each industrial education lab having a lab assistant. I hope someone will realize these students will require a lot of individualized attention from the instructor.

007 other areas- spec. ed. Eng., reading will I.D. this
007 handled by reading dept.

008 very essential
036-037 most need help here
060 very important
052 pre-service, in-service -- changing
083 very important
115 esp. for EMR groups
119 very imp. with EMR

PART 1: this should be done to the students before they ever enter the Industrial Arts program. Most of the questions asked here should have been done by any competent Special Education teacher before the student enters the I.A. program. I think if I wanted to go this deeply in to the evaluation of all Special education students I would have taught it. This form should have been sent to Special Education teachers instead of IA teachers.

Successful - criteria?
100 co-op
I found this too long, too wordy, consumed much time, and an imposition on busy teachers.

002 on your own
003 on your own
005 all are different anyway
008 just witness my classes
010 pardon me but PL 194 doesn't seem to work well here.
011 why bother if they are interested in something else and have a driving interest
014 that's guidance
015 #8 is a big emotional factor - not wanting to listen after doing it for 10 years!
019 let career ed. do it!
020 that's a lot to deal with
024 if they are different how can instruction be set up.
025 same as #24
027 we should be informed by a specialist about each student?
030 long-range educational goals...enabling goals
032 that's enough for just one subject
035 what kind or level of achievement do they really test.
036-037 geared towards interests
043 some of these questions I hope are being sent to specialists on special needs students.
044 This is the key to success (essential)
  specialists - without these I'd be like a child playing with two keys and a wall outlet.
051-052 But what a job! You might as well devote all your time to 3 or 4 students.
061 Boy!
062 The best idea yet!
065 How many people like to look in a mirror and see wrong!
066 automatically barriers are set up. How do you get around it?
067 very good
068 YES. It's the only way to get points across anyway!
069 sometimes it works
074 "Supervise" "self reliance"
075 Mine don't know the first thing about it!
076 student club
080 YES finally the real world
081 lecture...non-verbal
086 YES
087-089 What's the difference
096 successful - every time?!
097 YES
098 peers and cliches are always present!
100 YES
103 ? some I don't want to know
104 Encourage (I try)...Let's change kids OK, into what?
110 Ya
111 Ya
115 immediately
116 specialist or administration
120 not disruptive
123 70-80 everyday - right
132 peers
138 required
141 What?
After completing this questionnaire I feel the need for a few more questions.

146. Does a teacher's commitment mean giving up family and friends? essential pre-service
149. Should the day be lengthened to 48 hours? very essential
150. Should the pre-service be lengthened to eight years? very, very essential

I think everything on the questionnaire is essential!

Things must be realized and acted upon but I can see a whole new major resulting.

Please send a copy of your report to Paul Weed at Woodland High
I am seriously interested, Mr. Taylor!

007 very necessary
021 do within own school with meetings
023 Curriculum committee work
024 work out with speech and special ed teachers
064 school meetings
075 school meeting
124 must be on a local level
132 local
135 P.T.O. in local area

It seems obvious that I believe that the beginning teacher can not know too much about their work.

Not applicable. I teach one class of mech. drawing to college students.

010-012 guidance
030 good idea
049 " "
050 " "

THE END!

This is the worst questionnaire I have ever filled out. Maybe some of your research should be spent on communication skills. If I didn't have previous experience in special education it would be impossible to fill this out.

PART 1: Diagnosis of problem should essentially be left to specialists. The class room teacher is spreading himself too thin if he tries to do it all.

010 someone else's function

PART 3: Treatment is the most important concern of the class room teacher.

079 Hard to do with LDs.

Questionnaire was too long. If it was for anyone but you I would have filed it.
Some should be both pre-service and inservice.
Whew! All are essential. Various methods of obtaining results are necessary.

This is not done in a course of study
This comes only with practice.
Learn to refer student to appropriate personnel.
School officials should have this information available to them.
Consult with guidance
This has to do with each individual personality and the ability to
develop the appropriate attitude, not done in a course.
Same as above.
Goes hand and hand with 102.
Teacher needs to experience a classroom before the development of
this can take place
This is again something that should be learned after exposure to teaching-
Theory is fine, application of same difficult.
Takes practical application.
Refer and consult with appropriate personnel.
My answers reflect what I believe can be accomplished within the confines
of the University, and comments reflect what I believe to develop only
after experience has occurred.
599 - Continued-

102 Learned by teacher?
109 work permits?
116 aids, tutors, etc.

141 employer appreciation program? What is it?
144 learned?

602 006 We cannot select students.

620 We have no special class for handicapped students in Ind. Arts. Possibly you are confused with the Jr. High program in Special Ed. 

627 I am answering this as a special educator who feels that the subject area teachers need to know the basis regarding special kids, but should also get a considerable amount of support from special services.

TREATMENT — For most of these an I.A. teacher should use the Spec. Ed. teacher as a resource so wouldn't have to be specially trained himself.

628 093 "issues? — ?

This questionnaire is too detailed, but I hope it's helpful.

637 DIAGNOSIS — Basically a guidance job, willing to help

646 Not Applicable—non teacher

650 I don't know what the confusion is with this matter. My I.A. dept. head, ________ ________ , advises me that he filled this out originally and mailed it to you. Sincerely, ________

655 049 Yes, Let's limit the goals or achievements a student could do by his disabilities. Better yet, why bring him into I.A.

139 Yes! Yes! Yes!
140 Every place is different

TOO MANY QUESTIONS!
Let's not go overboard with this! We also have to work with the average student—many of these items should be done in special needs areas.

(learning disabilities) - problem exists - allowing specialists to do identifying.
- get info from reading special st
- testing done by specialists
- perhaps done by counselor rather than teacher
- in conjunction with special ed. instructors
- counselor's function
- counselor's function
- in partnership with counselor and specialists
- rely upon specialists
- rely upon specialists
- counselor's role
- no doubt varies greatly from student to student
- with counselors & parents & specialists
- function of others
- realistically adapt what is available
- others' responsibility
- part of PET process
- not always appropriate or possible
- not always appropriate or possible
- depends on what diagnostic tests
- not always with parents
- very helpful - but can lean on counselors for this
- depending on situation and circumstances
- depending on situation and circumstances
- with handicapped it certainly will vary
- in appropriate classes
- only where equipment can be modified in work world
- when appropriate
- Counselor's function might work in pairs
- Often families don't comprehend
Counselor's function

100 in conjunction with counselor

106 counselor's role

107 if requested

109 counselors also can assist

110 in appropriate areas

113 with counselors

120 when appropriate

A "superteacher" might try to accomplish all the essentials while a great teacher does many of them. So many of the statements can, may and should be shared with counselors and special ed. teachers - depending on competencies, willingness and personality of each.

Diagnosis - A general understanding must be gained in pre-service - but there are many on-going activities which can be gained on the job.

Nurture - As I read and re-read these questions, I am convinced that most of them are "common-sense" statements. All of them deserve some attention in the pre-service training of instructors. Upon employment, follow up through in-service needs to be done. All items would be checked as essential or nice to know. Pre-service and in-service should also be included.

In my opinion public school is not the place to train handicapped students. They should go to a school with teachers trained to handle them. We don't have the time or training to handle other students now. Adding a handicapped student to the already over worked unprepared IA teacher is a big mistake.

Ed, I reach some of these as a principal. To do the questionnaire would be senseless. I've spoken to my IA people who have also received one.

A course concerned with handicapped students should be included in the under grad program at Gorham in IA. How to plan units that would work with normal students and handicapped students, modifying the shop, etc.
723 056 NA?
   059 Repeat?
   089 Repeat?

724 082 Of What?

727 047 No
   048 No
   052 Who determines the entry level - if me - OK!
   060 Why should they be different?
   062, 063 I don't have time for this crap!
   073 handicapped - all kids
   074 I should let the kid alone?
   075 your kidding!
   076 They know they're different

097 Depends
107 - No
108 - No
113 - No
133 Not in (______) name of town
134 Not in (______) name of town

732 108 Within reason relating to ability to function and personal safety

734 011, 012, 016, 017, 018, 019, 020, 022, responsibility of other education
   027, 028, 030, 031, 034, 035, 036, 037, personnel.
   038, 039, 042, 043, 045, 047,
   055, 066, 067, 093, 095, 097, 100, 101, 107, 113, 131, 134, 142,
   025, 026, 029, 046, 051, 052, 053 054, 068, 135, 136, Only if instructing
   a complete class of special ed. students.
   040, 045, 054 Only in conjunction with PET teams
116 aids, tutors, etc. ?! HA HA HA
Skills should be developed by:
1. Special Ed. Major: 006, 007, 012, 036, 037, 043, 055, 056, 066, 067,
   075, 076, 090, 093, 095, 097, 098, 109,
2. Psychologist/ similar specialist: 016, 029, 098,
3. Occupational therapist or similar: 016, 017,
4. Testing and evaluation specialist: 010, 011,
5. Municipal planning/ School Board/ School Administration: 018, 129, 131,
   134, 142

I am uncertain on my answers to many questions. Most of the handicapped
students I have had are simply slow learners and poor readers. I assumed
"other" might be in the form of conferences.

085 too complicated for anyone!

The questionnaire is too complicated.

016 This would be quite a chore for all 15 clusters
019 Not IA area - Let adm-guidance do this.

PRESRIPTION - This section of survey must also include PET- SP, ED. Guidance
   - Adm. etc. The IA cannot be expected to go alone
032 In cooperation with rest of staff- an on-going process

144 Can't be taught

No program now.

I am returning your Competencies For Industrial Education Teachers of
Handicapped Learners since I feel because of the detailed and specificness
of the questionnaire that my answers would be vague and without merit.
I do understand however that the three Industrial Arts teachers at the
school have filled out this somewhat and I hope that this is satisfactory.
Sincerely, 

058 ?
107,108, 109, Not part of instructor's function!
Sorry for the delay in getting this back to you.

at least know about and analyze utilize?

This is so similar to No: 10 & 17 they could be handled together.

Who wrote this jargon?!

Pre-service should not design but be told what has been designed to date

Alternative programs. "Other" listed because this is also an administrative responsibility

understand Who "understands" federal and state regulations

No, personnel people should help here

- as far as possible in an "ivory tower" atmosphere

again for those who plan and write programs

not written in the same format as the rest

Vague!

This is like Flag and Mother! Who could say no!

See No: 71. Who supervises? The Pre-service? No. The in-service - How?

Inform & get fired

Instructional

hard to teach people how to do this

see above

first aid instruction

Bah!

Not a good instrument

The questions require one to assume he is in an isolated situation rather than a part of a total educational delivery system, i.e. public school, department, etc. Discrete and definite differences exist between public and post secondary roles.

NOT APPLICABLE
If you spend all the time doing all these things you will not teach the student anything. You will not have time.

A person should be well prepared for the job he is doing. He should have inservice. Given a reasonable load.

Fact necessary, not function

How?

I question the validity of the information obtained by such a questionnaire since an accurate response to most of the questions would depend (in my opinion) on an infinite number of situations & other variables such as class size, number of handicapped involved, amount of time available to classroom teacher, etc. It * also depends on the existing realities in education: responsibilities to all students. The "Average" student risks becoming "handicapped" by lack of attention to his "normal" needs under the system implied here.

(* It: the "accurate response"

Most parents wouldn't care.
When the competency is done doesn't really matter, pre-service, in-service, or other.

The more I look at this the more angry I get. (Do not send me another) Between OSHA, State IA Safety Bulletins, Administrative Forms, Etc., When does a teacher get caught up? Typical Gov't Busy Work

Preferred

029 time permitting
036-037 very important!
050 not critical as long as they are achieved!
082 very effective
108 money problems
123 important!

085 OSHA is a waste of time
095 I don't like this idea
108 difficult to answer
122 ?

068-070 important to do all three
APPENDIX L

Materials Sent to Joint Members of
American Vocational Association and
American Industrial Arts Association
Special Needs Committees.
To: 
From: Dr. James J. Buffer and Ed W. Taylor 
Re: Enclosed materials

Thank you for agreeing to examine these materials. As I indicated during our call last week, your expert judgment is greatly appreciated. For the last few years, we have been aware of a need in our industrial teacher education programs in the area of preparation for teaching learners with handicaps. During the last year, an extensive examination of this problem has been undertaken. At this time we are requesting your participation by examining the developed materials, and providing feedback for further development.

The project began with an examination of the literature for programs which could provide guidance for our listing of desired outcomes for the classroom teacher. The present project, although designed for Maine, could serve as a model for other states. The search of the literature included customary library procedures such as computer searches of data bases, manual searches of hard copy information, etc. The result of the searches was a list of twelve studies which employed a competency base for the development of teacher education skills. From this list, five were selected on the basis of their reported research procedures in generation of the lists and subsequent validation activities.

The resulting list of competencies was then submitted to a selected panel of experts (I. A., Voc. Ed., and Special Ed. certified) who had experience in these areas in the schools. The list was examined for duplication, omission and acceptable terminology. This revised list was submitted to a panel of teacher educators at the Ohio State University and further revised and edited.

The list of competencies was then sent to the total population of I.A. and T. and I. teachers in Maine, along with the appropriate administrator for each program. Based on a return rate of 35%, the competencies were re-examined and ordered in 34 objectives, based on the clinical teaching model (Diagnosis, Prescription, Treatment, Nurture, and Evaluation).
This listing will hopefully provide a basis for pre- and inservice teacher education and in turn enable the education of learners with handicaps. We are asking you, because of your recognized interest and expertise in this area, to critically examine these 34 objectives and competencies. Specifically, would you check (✓) the desired level of proficiency for the industrial education classroom teacher in the columns at the right and note any inappropriate or omitted items. Please return the materials to:

Dr. James J. Buffer / Ed W. Taylor
The Ohio State University
120 Welding Engineering Building
195 West 19th Avenue
Columbus, Ohio 43210

Please return the materials by 23 May, 1980 if possible.

Thank you for your valuable assistance in this worthwhile project.

PS. The index card is enclosed to help with the levels of proficiency.

LEVELS OF PROFICIENCY

AWARENESS - Knows about competency but does not have/need skill to perform task.

LOW LEVEL - Has the minimal skill/ability regarding the competency to perform the task with the assistance of others.

HIGH LEVEL - Has the skill/ability regarding the competency to perform the task independently.

NOT APPROPRIATE - Not necessary for the IE teacher to know about and/or do.

Remember: The level of proficiency under consideration is for the classroom Industrial Education - I. A. and T. & I. - teacher.

PS. The index card is enclosed to help with the levels of proficiency.
DIAGNOSIS

Objective # 1: Demonstrate knowledge of a screening-referral process for special needs students in secondary programs.

Competencies:

1. Identify learning styles.
Learning styles include use of perceptual faculties such as visual, hearing, tactile, etc. Styles can be further described in terms of cognitive/psychomotor and verbal/non-verbal.

2. Identify learning disabilities.
Learning disabilities include visual, auditory, ambulatory impairment as well as emotional and behavioral disorders. Cognitive processes may be impaired by these conditions or as a result of drug therapy related to them.

3. Identify learning difficulties.
Learning difficulties are caused by both the learner and the environment in interaction.

4. Identify personality patterns.
Observe student behavior which tends to interfere with other students and make referrals for further analysis.

5. Identify emotional factors.
Emotional factors include blatant behavior such as hyperactivity, aggressiveness, withdrawal, etc. Also includes behavior which indicates the presence of emotional tensions, or excessive anxiety.

6. Identify reading level of student.
Reading level can be identified by examining cumulative folders, and should be based on results of accepted reading assessment techniques. Reading level is an indicator of the ability to receive instruction via printed matter.

7. Identify symptoms of drug use/abuse.
Symptoms may include physiological conditions, behavioral manifestations, and depression of cognitive functioning.

Objective # 2: Utilize the results of diagnostic instruments and techniques for classification and placement of special needs students in pre- and vocational education programs.

Competencies:

1. Utilize performance-based techniques.
Performance based testing techniques may include teacher specified (local) performance activities or other more formal measures. (i.e. work samples, use of tools, materials, and processes to perform specified tasks.)
Objective # 2: --Continued--
Competencies:
2. Analyze interests and aptitudes.
This analysis includes interpretation of the results of standardized instruments such as the Otis, Kuder Preference, etc., as well as personally obtained information from the learner in informal situations.

3. Interpret results of standardized instruments.
These instruments include interest and preference inventories as well as aptitude and/or achievement tests. These instruments are generally administered by the guidance or testing department. The results may provide insight and help with motivation and teaching of individuals.

4. Develop a process and procedure for student selection.
Based on available information, the industrial educator should select those programs and parts of programs which are appropriate for the individual student's progress.

Objective # 3: Conduct an analysis of a career cluster.
Competencies:
1. Determine knowledge concepts and general competencies.
These knowledges and competencies are general and include mathematical and verbal abilities, as well as specific knowledges required by those working in the career area.

2. Determine specific job skills.
These skills are specific to a selected job within the career cluster. They should include specific operations and the level of skill required in the specific situation.

The standards of performance should be those generally expected for the selected level of operative in the career area.

4. Determine basic aptitudes required.
These aptitudes include the potential and actual readiness to learn and progress in the career area.

Objective # 4: Analyze local or regional job market and determine employment opportunities for handicapped persons.
Competencies:
1. Conduct and/or utilize a community needs survey.
The community needs include the known and projected employment opportunities. They should be examined to assess the employment potential for handicapped persons within the community. The survey includes contacting local employers, employment agencies, and social agencies.
PRESCRIPTION

Objective #5: Develop a system for planning programs and services for each handicapped student.

Competencies:

1. Develop local program objectives.
   These objectives include statements about types of services desired, utilization of facilities, and educational personnel employed at the present or in the future.

2. Develop a composite profile of learning characteristics for special needs students to be served.
   This profile includes known and projected characteristics of students and prospective students and special conditions which may influence educational planning of programs.

3. Develop cooperative arrangements for team teaching.
   These arrangements include administrative policy making, implementation, and consideration of cross-discipline curriculum approaches for instruction of individuals and groups of students.

4. Inform parents of their responsibility for program planning and evaluation.
   These responsibilities include not only the legal rights under current legislation (PL 94-142), but also involvement in an on-going way in the total education of the child.

5. Obtain necessary information from parents regarding planning and implementation.
   This information includes relevant facts about the disabilities of the student which may not be obvious in the structured school situation.

6. Collaborate with other educators.
   Collaboration includes sharing information and expertise regarding the setting and achieving of appropriate educational outcomes. It also includes team teaching, consultation and activity with pupil evaluation teams.

7. Utilize information from other disciplines about conditions of the learner:
   Sensory, Physical, Emotional, Social, Cognitive.
   This information may be the result of testing and/or consultation with professionals from the medical or psychological fields. This information should be used at the goal setting stage to develop realistic and individual plans and programs.
Objective # 5: Continued --

Competencies:

8. Plan modifications of facilities and equipment.
These modifications include appropriate access and utilization
for all students and modification for individual students.
Equipment modification may include development of special
jigs, fixtures, controls, guards, etc.

9. Develop alternative methods of: material handling,
storage, and clean-up activities.
The alternative methods must be appropriate for handicapped
individuals and non-handicapped. Includes considerations
of accessibility, use of aids for handling materials, scrap,
and various tools.

Objective # 6: Refer special needs students to suitable resource
personnel when appropriate.

Competencies:

1. Recommend students use these services when necessary.
Services include medical, psychological, and educational
counseling. These services should be used in a unified
approach, with communication among and between personnel.

2. Identify resource people to help prepare instructional
materials.
Curriculum consultants include educational personnel (media
specialists, special educators, and counselors) as well as
resource people from the medical and psychological fields.
Representatives from industry and employment agencies may
be included also.

3. Aid in guiding special needs students to develop
career objectives consistent with abilities and
interests. (Achievable with handicapping conditions.)
Collaborate with guidance personnel, educational measurement
personnel, and persons familiar with career areas to provide
a realistic assessment of capabilities and limitations of
of the learner. Based on this assessment, guide in the
development of career objectives.

Objective # 7: Specify instructional programs for special
needs students.

Competencies:

1. Determine relevant occupational cluster information.
Based on the analysis of a career cluster, specify the
understandings, skills, and attitudes required for an
individual learner. Indicate which of these is possible
within the industrial education program.

2. Direct students into alternative programs.
Based on a realistic appraisal of the capabilities of the
learner, and previous performance in actual educational
programs, a change in educational goals may be indicated.
This re-direction should be done through the student's
pupil evaluation team.
Objective # 7: —Continued—

Competencies:

3. Utilize results of tests to plan instruction.
Results of tests may be available in the student's cumulative file, or as a result of specific request by teachers or other professionals.

4. Prescribe remedial math activities.
Based on deficiencies encountered, remedial math activities may be suggested and coordinated through the pupil evaluation team. These activities may require the use of specialists.

5. Prescribe remedial reading activities.
Based on deficiencies encountered, remedial reading activities may be suggested and coordinated through the pupil evaluation team. These activities may require the use of specialists.

Objective # 8: Select or develop modules or units of instruction appropriate for special needs students.

Competencies:

1. Adopt or adapt instructional materials.
Instructional materials include texts (of varying reading levels), A.V. materials of various types, and teacher-made materials. These materials should be coordinated with the needs and abilities of the student.

2. Identify necessary special services.
Special services may include transportation, transcribing, recording, and interpretation (signing, etc.) services both to and from the school and within the industrial education facility or lab.

3. Organize a unit of instruction on career education.
Include opportunities for self-assessment, career planning, and exploratory activities. Guide student in development of long and short range career objectives.

4. Incorporate inductive and deductive thinking into curriculum.
Provide time and activities which allow for inductive approaches to problem solving by students. Also provide opportunities for descriptive activities and consequent analysis.

Objective # 9: Design instructional strategies.

Competencies:

1. Recognize instructional options.
Instructional options include active, interactive, and reactive approaches to the relationship between the teacher/manager and the learner. Options also include varying of instructional activities to accommodate different learning styles.
Objective # 9: —Continued—
Competencies:

2. Sequence tasks to conform with learning styles, pace, and inferred potential of students.

Sequencing may include the setting of additional enabling objectives, or additional activities of a remedial or review nature. Sequencing implies a developmental growth in that additional skills are built on pre-requisite skills of a lower order.

Objective # 10: Identify the cognitive, affective and psychomotor level of each student in order to prescribe an individual education plan.
Competencies:

1. Use the results of achievement tests and other assessments to plan instruction.

Prior to specifying instruction, the student's present level must be ascertained. Assessment activities include:
- obtaining available information from cumulative files, and collecting additional information by means of standardized formal assessment, general achievement tests, formal diagnostic tests - also informal assessment - criterion referenced tests, diagnostic teaching, systematic observation.

2. Understand and follow state and federal guidelines.

These guidelines are found in the state plan for special education, the state plan for vocational education, and the federal laws (54-142, 54-452, etc.).

3. Establish performance objectives based on tasks in occupations.

Using a task analysis or other referent, develop the needed on-the-job competencies for a given occupation. Those competencies which are general for an operative in the occupation should be listed.

4. Develop the Individual Education Plan.

The Individual Education Plan should include at least:
- Assessment of the pupil's current educational status,
- Goals - for a minimum of one year,
- Required professional and instructional services,
- Required facilities, materials, and media,
- Educational ancillary services,
- Essential out-of-school services
- Evaluation methodology.
Objective #11: Translate statements about physical and sensory abilities and limitations into statements about instructional alternatives.

Competencies:
1. Identify educational goals in terms of the student's abilities and develop long range educational options. Educational goals include the possibility of additional educational attainment beyond the extent of the secondary program, also additional training outside the educational institution. (OJT, etc.) Long range educational options include additional education, training, and/or redirection to other career areas.

2. Prioritize educational objectives. Objectives are prioritized to allow progress toward longer range educational goals. The relationship between enabling and terminal objectives assists in this process.

3. Break down long range goals into sequences of enabling goals. Enabling goals should include short term goals (must be included in IEP) and longer range goals.

4. Write and develop objectives for mainstreamed special needs students. (Consider entry level of student.) These objectives should be behavioral in nature and able to be evaluated. They are often developed as a part of the IEP.
TREATMENT

Objective # 12: Be aware of student's interaction with peers, teachers, parents, and others.
Competency:
1. Assist student in interpreting his own behavior. Provide feedback to the student regarding his interaction within the social context of the educational program. Encourage cooperative and productive steps to improve that interaction in conjunction with counseling services or PET functions.

Objective # 13: Select and utilize appropriate techniques for instruction.
Competencies:
1. Use small group instruction. Include small group instruction when appropriate. Match this procedure with educational outcomes for both handicapped and non-handicapped students.

2. Use peer instruction techniques. Utilize peer interaction by teaming handicapped students with other students, handicapped and non-handicapped, where efficient for learning.

3. Supervise and use laboratory-based activity. Laboratory activity should be realistic and success oriented. Modifications of facilities and equipment as well as procedures may be necessary. Laboratory experience includes activities required for organization of the laboratory environment and actual lab. work, clean-up, etc.

4. Demonstrate ability to use materials, tools, and processes. Utilize the demonstration method where appropriate and modify delivery techniques where necessary for effective results with handicapped learners. Include demonstrations of equipment/facility/process adaptations for special needs students. May include the development and use of special visuals, mirrors, video recordings, etc.

5. Employ questioning. Utilize questioning and allow sufficient time for expression of ideas. May be used as an inductive (exploratory) approach.

6. Use role playing activity. Role playing may include roles normally included in occupational settings, and may contribute to career education at the exploratory level.
Objective #13: Continued—

Competencies:
7. Develop student self-reliance and resourcefulness.
   Pose problem solving situations; design for success. Allow
   sufficient time and effort for student solutions and trial.

8. Establish and demonstrate safe use, storage, and
   maintenance of tools and equipment.
   Include any modifications of facilities and/or procedures.
   Include handicapped in normal maintenance activities.

Objective #14: Effectively build a series of educational
   experiences which lead to a better understanding
   of career development.

Competencies:
1. Include self-awareness activities.
   Activities include exploratory activities within the lab.
   as well as use of lists of industrial tasks, standards,
   limits, etc.

2. Develop career awareness and provide career orientation.
   Include information from pamphlets, films, guest speakers,
   and other resources. Pattern work in the industrial education
   lab. to provide orientation type experiences.

3. Develop career decision making skills.
   Include or make available information about career requirements,
   and options for advancement and/or change. Encourage long range
   planning as well as shorter term planning.

Objective #15: Modify and utilize equipment, materials, and
   instructional methodology to facilitate the
   learning of special needs students.

Competencies:
1. Formulate instructional strategies and techniques
   to help learning of special needs students.
   Options include: Direct instruction, Inquiry-discovery methods,
   Group investigations, Precision teaching, Instructional games,
   Creativity-problem solving, Psychoeducational diagnostic-
   prescriptive procedures, Peer or cross-age tutoring,
   Developmental teaching.

2. Utilize appropriate media equipment and materials
   to improve sensory stimulation.
   Options include commercial and teacher-made visuals,
   auditory recordings, and tactile devices such as models,
   cutaways, etc.
Objective # 15: --Continued--

Competencies:

3. Present a lecture utilizing non-verbal visuals and related techniques to improve communication.

Options include media devices, special services such as signing, and demonstrations.

4. Incorporate appropriate business, OSHA, and industrial manuals in curriculum.

Encourage student use of these materials to determine rules, regulations and technical information and specifications.

Objective # 16: Develop positive reinforcement techniques to motivate and reinforce the learning process.

Include the usual rewards for desired performance as well as the use of behavior substitution for undesired behaviors.

Objective # 17: Initiate activities to further the social development of handicapped persons and others.

Competencies:

1. Set the development of positive social skills as an objective.

Include appropriate interaction, sharing, and helping as desired results of the development of social skills.

2. Encourage group processes and reward group contributions as appropriate.

Include group projects, teams, etc. Emphasize acceptance of all students in activities.

3. Organize a student club to enhance social development.

Foster social development in formal and informal situations such as clubs, etc.

Objective # 18: Inform school officials of responsibilities regarding placement and supportive services for handicapped learners.

Include changing, continuing needs of the student/teacher in the industrial education environment. Communication may involve a request for a PET meeting(s).
Objective # 19: Extend and implement programs for individual students. - Give attention to personal needs of the student.

Competencies:

1. Consult with supportive teachers.
   Supportive teachers include reading, mathematics, and other teachers who are knowledgeable about remedial programs, also special education teachers and additional members of the student's PET.

2. Conduct conferences with individual students.
   Conferences include sessions to facilitate the setting of objectives, evaluate progress, redirect process, etc.

3. Establish a student tutoring system.
   Personnel include aides, personnel from other subject areas within the school, social agencies, and peers.

4. Conduct successful home visitation and involve the family as a source of primary reinforcement.
   Actively seek parental input and support, may occur as a result or outgrowth of PET activities.

5. Participate in student-parent conferences.
   Student-parent conferences may occur as part of the PET process, or may be a part of the development and delivery of the IEP.

6. Plan and coordinate on- and off-campus on-the-job programs.
   Planning and coordination include cooperation with existing programs and coordination personnel, if available. Work-study and other on-campus or school related programs may be organized.

7. Aid special needs students with work permits.
   Aid may consist of simply helping the student with the formal aspects of application, or may involve assessment of strengths and weaknesses which relate to the proposed job situation.

8. Help the individual develop a positive attitude about self.
   Recognize the student as a person with strengths and weaknesses, as well as abilities and disabilities.

9. Encourage the student to express ideas, etc.
   Allow and make provision for student input into the organization, management, and evaluation of his or her individual program.
**Objective # 19: Continued**

Competencies:

10. Provide information about further education and/or advancement for the special needs student. Information may include descriptive literature about further educational experiences or opportunities, or requirements for advanced positions in a given job situation.

11. Aid student in adjusting to his/her disability. Develop a positive attitude in the learner by emphasizing the abilities rather than the disabilities. Be supportive of exploration of new areas but be realistic.

**Objective # 20:** Establish and maintain an appropriate group learning environment which can provide success for special needs students and others.

Competencies:

1. Arrange guided field experiences. Special attention should be given to providing for students ambulatory and other physical handicaps. Arrangements should be checked out with the host prior to scheduling these field experiences.

2. Moderate student discussion of sensitive issues. Use class discussion as a vehicle to help resolve "crisis" situations:
   - Discuss all sides of the issue
   - Be sure all have an opportunity to contribute
   - Make whatever decision is necessary (intervention)
   - Communicate back to the group

3. Stimulate learning through brainstorming, buzz groups, and question box techniques. Seek input into the planning and execution of the learning process. Maintain non-threatening means of communication.

4. Locate support for those with personal adjustment problems. Support personnel may include guidance personnel, school psychologists, personnel from social agencies, etc.

5. Develop procedure for job relocation or rotation in the laboratory. May include responsibilities within the laboratory such as tool room responsibilities, clean-up duties, etc. Emphasize real world responsibilities as far as possible.
Objective # 20: --Continued--

Competencies:

6. Provide success producing situations. Engineer at least some activities for no failure. In group learning situations, change membership of groups when advisable.

7. Be sensitive to and use behavior modification and other adjustment approaches. Use techniques such as behavior substitution to extinguish undesired behavior and to reinforce desired behavior.

8. Define operating rules and responsibilities of both the learner and the teacher-manager. Define the role of the teacher-manager and allow for student control of matters which are appropriate.

9. Establish the order of business each day. Determine at least the beginning and termination routines for each day. Include communication of expected outcomes for the day.

10. Provide opportunities for student to achieve recognition and receive personal group approval. Opportunities include student personnel systems, class meetings when advisable, group meetings when useful for group functioning.

Objective # 21: Establish and maintain appropriate attitudes.

Competencies:

1. Encourage the establishment of appropriate attitudes of regular students towards special needs students. Utilize activities which emphasize the client-centered approach rather than crisis-intervention. Include pre-sensitization where possible before actual teaching intervention.

2. Encourage the establishment of appropriate attitudes of special needs students toward regular students. Strengthen the concept of self-worth and value within the learning process. Recognize that all people have strengths and weaknesses - emphasize strengths. Deal with attendant frustration in positive ways.

3. Encourage the special needs student to develop positive attitudes toward self and work. Strengthen the concept of self-worth by providing activities which can be successful yet are challenging. Allow the special needs student to grow, but be sure to include some success.

4. Encourage regular students to develop positive attitudes towards self and work. Same as above.
Objective # 21: --Continued--
Competencies:
5. Encourage appropriate teacher attitudes by conducting teacher-teacher conferences.
Make yourself available for consultation regarding successes and problems encountered in the teaching/learning process with handicapped learners. Share methods, strategies, etc. which will help others.

Objective # 22: Establish and modify an appropriate physical environment.
Competencies:
1. Reorganize physical floor plan of classroom/laboratory. Consider architectural accommodations such as adequate provision for access, entry, mobility. Also consider the possibility of special furniture in reactive and interactive areas.
2. Organize instructional environments which encourage exploratory activities. Employ inductive methods of problem solving, encourage experimentation.
3. Execute emergency procedures in a calming manner in the event of a seizure, fatigue, or excessive emotional reaction. Utilize student self-organization to the extent possible to help manage the on-going process (Lab. or Classroom) while performing individual intervention.
4. Supervise and coordinate aides, tutors, etc. Perform the required management procedures—filling out reports, etc. Involve these personnel in the environment as a viable part by encouraging participation to the extent possible.

Objective # 23: Establish and maintain a working relationship with industry and employers.
Competencies:
1. Assist employers and supervisors in acquiring techniques to enable them to work with special needs students. Act in the role of an available consultant and refer employers and supervisors to appropriate agencies and other resources when possible.
2. Plan and coordinate on- or off-campus on-the-job instruction. Cooperate with coordinators when possible—offer consultant services when practical.
EVALUATION AND DISSEMINATION

Objective #24: Design a system for monitoring student achievement on a regular basis.

Competencies:
1. Use a variety of performance-based techniques. Measure understandings, skills and attitudes through student performance. Utilize formal skill evaluation exercises when available and construct appropriate ones for in class use. Systematic observation may be used to provide input for affective assessment.

2. Maintain student records in an objective manner. Records include objectives achieved, cognitive measures, etc. Seek and use student input in the evaluation process.

3. Evaluate pupil performance at each objective level. The evaluation contains information about the quality of performance as well as noting the fulfillment of the objective. It is a measure of readiness to continue.

4. Conduct a system of reporting student progress to student and parents. Utilize the system provided by the educational system. If it is not adequate to indicate progress within the individual student's program, devise additional methods of reporting progress (such as a narrative report, etc.).

5. Evaluate particular teaching process and strategy as related to student performance and modify. Based on the performance of individuals in the teaching/learning situation, critically examine the process and strategy and modify as needed. Consult with other professionals such as special educators when appropriate. Seek student input.

6. Assess the ability of the individual to modify his/her behavior. Consider factors which limit and enhance the ability of the individual to succeed; prescribe activities which encourage positive change. Utilize student input.

Objective #25: Organize and/or conduct a local program review.

Competencies:
1. Utilize follow-up data from students who leave or graduate to improve the program. Collect data regarding employment and/or other activities of graduates and those who leave the program. Ask for feedback about strengths and weaknesses, suggestions, etc.
Objective # 25: --Continued--
Competencies:

2. Share program strengths and weaknesses with other professionals.
Based on follow-up data and process evaluation, communicate with other professionals to share ideas, strategies, etc.

3. Establish and utilize advisory groups.
Utilize advisory groups to enhance value of the program by seeking input from employers, professionals in agencies which work with handicapped, and others.

Objective # 26: Develop and use a filing system to accommodate student records.
Competencies:

1. Prepare records of program and development as required by law.
Records include accounting for monies spent, materials expended, etc. May also include specific testing and results, changes made and funded under specific laws, etc.

2. Prepare records of students and development as required by law.
Records include specific evaluations for use by PET, as well as others.

3. Provide for a system of authorization for the release of information from student records.
Provide for the preservation of rights of students and others to privacy in accordance with federal laws.

Objective # 27: Develop public relations literature.
Competency:

1. Devise methods of interpreting special needs and education programs to: parents, teachers, administrators, and community groups.
Methods may include open-house activities, press releases, projects with high visibility within the community, etc. A written statement of goals and objectives should be prepared and made available to interested parties.

Objective # 28: Obtain public support for vocational programs for special needs students.
Competency:

1. Conduct an employer appreciation program.
Program may be combined with recognition of graduates, open house activities, etc. Provides contacts for graduates and others.
Objective # 29: Conduct a parent-teacher conference.

Competency:

1. Utilize the parent-teacher conference to enhance the educational process for the individual. Meet with both parents if at all possible. Assume good intentions by parents. Listen to parents. Consider all alternatives with parents. Expect criticism. Don't expect too much from one conference.
Objective # 30: Communicate with objectivity and specificity with other professionals. Relate facts and specifics, not opinions unless they are requested and are clearly labeled as professional opinions. Keep copies of all written communication.

Objective # 31: Demonstrate a commitment to teaching. Become active in state, local, and national professional organizations. Become active in professional groups which deal with specific subject matter areas. Seek additional training - in-service, extension coursework, etc.

Objective # 32: Demonstrate knowledge of the ethical procedures of a professional. Be familiar with the codes of ethics published by professional organizations (NEA, etc.) Subscribe to and support these codes.

Objective # 33: Keep abreast of professional developments, societal needs, and technological advances. Join and become involved in professional organizations, technological societies, etc. Be active in the community.

Objective # 34: Research current trends in business and industry, (e.g., Technological practices, employment practices, and training needs, etc.) Strengthen ties with local societies and organizations. Be aware of national trends by membership in national organizations, etc.
APPENDIX M

Results of Evaluation by Joint Members of the
American Vocational Association and the
American Industrial Arts Association
Special Needs Committees
DIAGNOSIS

Objective # 1: Demonstrate knowledge of a screening-referral process for special needs students in secondary programs.

Competencies:
1. Identify learning styles.
Learning styles include use of perceptual faculties such as visual, hearing, tactile, etc. Styles can be further described in terms of cognitive/psychomotor and verbal/non-verbal.

2. Identify learning disabilities.
Learning disabilities include visual, auditory, ambulatory impairment as well as emotional and behavioral disorders. Cognitive processes may be impaired by these conditions or as a result of drug therapy related to them.

3. Identify learning difficulties.
Learning difficulties are caused by both the learner and the environment in interaction.

4. Identify personality patterns.
Observe student behavior which tends to interfere with other students and make referrals for further analysis.

5. Identify emotional factors.
Emotional factors include blatant behavior such as hyper-activity, aggressiveness, withdrawal, etc. Also includes behavior which indicates the presence of emotional tensions, or excessive anxiety.

6. Identify reading level of student.
Reading level can be identified by examining cumulative folders, and should be based on results of accepted reading assessment techniques. Reading level is an indicator of the ability to receive instruction via printed matter.

7. Identify symptoms of drug use/abuse.
Symptoms may include physiological conditions, behavioral manifestations, and depression of cognitive functioning.

Objective # 2: Utilize the results of diagnostic instruments and techniques for classification and placement of special needs students in pre- and vocational education programs.

Competencies:
1. Utilize performance-based techniques.
Performance based testing techniques may include teacher specified (local) performance activities or other more formal measures. (i.e. work samples, use of tools, materials, and processes to perform specified tasks.)
Objective # 2: --Continued--
Competencies:
   2. Analyze interests and aptitudes.  
This analysis includes interpretation of the results of  
standardized instruments such as the Otis, Kuder Preference,  
etc., as well as personally obtained information from the  
learner in informal situations.  
   (5) (2) (-) (-)

   3. Interpret results of standardized instruments.  
These instruments include interest and preference inventories  
as well as aptitude and/or achievement tests. These instruments  
are generally administered by the guidance or testing  
department. The results may provide insight and help with  
motivation and teaching of individuals.  
   (2) (5) (-) (-)

   4. Develop a process and procedure for student selection.  
Based on available information, the industrial educator should  
select those programs and parts of programs which are  
appropriate for the individual student's progress.  
   (-) (-) (6) (1)

Objective # 3: Conduct an analysis of a career cluster.
Competencies:
   1. Determine knowledge concepts and general competencies.  
These knowledges and competencies are general and include  
mathematical and verbal abilities, as well as specific  
knowledges required by those working in the career area.  
   (-) (1) (6) (-)

   2. Determine specific job skills.  
These skills are specific to a selected job within the  
career cluster. They should include specific operations  
and the level of skill required in the specific situation.  
   (-) (-) (7) (-)

The standards of performance should be those generally  
expected for the selected level of operative in the  
career area.  
   (-) (1) (6) (-)

   4. Determine basic aptitudes required.  
These aptitudes include the potential and actual readiness  
to learn and progress in the career area.  
   (-) (2) (5) (-)

Objective # 4: Analyze local or regional job market and determine  
employment opportunities for handicapped persons.
Competencies:
   1. Conduct and/or utilize a community needs survey.  
The community needs include the known and projected  
employment opportunities. They should be examined to  
assess the employment potential for handicapped persons  
within the community. The survey includes contacting local  
employers, employment agencies, and social agencies.  
   (-) (4) (3) (-)
PRESCRIPTION

Objective # 5: Develop a system for planning programs and services for each handicapped student.

Competencies:
1. Develop local program objectives. These objectives include statements about types of services desired, utilization of facilities, and educational personnel employed at the present or in the future. 

2. Develop a composite profile of learning characteristics for special needs students to be served.

3. Develop cooperative arrangements for team teaching.

4. Inform parents of their responsibility for program planning and evaluation.

5. Obtain necessary information from parents regarding planning and implementation.

6. Collaborate with other educators.

7. Utilize information from other disciplines about conditions of the learner:
    Sensory, Physical, Emotional, Social, Cognitive.

This information may be the result of testing and/or consultation with professionals from the medical or psychological fields. This information should be used at the goal setting stage to develop realistic and individual plans and programs.
Objective # 5: Continued --

Competencies:

8. Plan modifications of facilities and equipment. These modifications include appropriate access and utilization for all students and modification for individual students. Equipment modification may include development of special jigs, fixtures, controls, guards, etc.

9. Develop alternative methods of: material handling, storage, and clean-up activities. The alternative methods must be appropriate for handicapped individuals and non-handicapped. Includes considerations of accessibility, use of aids for handling materials, scrap, and various tools.

Objective # 6: Refer special needs students to suitable resource personnel when appropriate.

Competencies:

1. Recommend students use these services when necessary. Services include medical, psychological, and educational counseling. These services should be used in a unified approach, with communication among and between personnel.

2. Identify resource people to help prepare instructional materials. Curriculum consultants include educational personnel (media specialists, special educators, and counselors) as well as resource people from the medical and psychological fields. Representatives from industry and employment agencies may be included also.

3. Aid in guiding special needs students to develop career objectives consistent with abilities and interests. (Achievable with handicapping conditions.) Collaborate with guidance personnel, educational measurement personnel, and persons familiar with career areas to provide a realistic assessment of capabilities and limitations of the learner. Based on this assessment, guide in the development of career objectives.

Objective # 7: Specify instructional programs for special needs students.

Competencies:

1. Determine relevant occupational cluster information. Based on the analysis of a career cluster, specify the understandings, skills, and attitudes required for an individual learner. Indicate which of these is possible within the industrial education program.

2. Direct students into alternative programs. Based on a realistic appraisal of the capabilities of the learner, and previous performance in actual educational programs, a change in educational goals may be indicated. This re-direction should be done through the student's pupil evaluation team.
Objective # 7: --Continued--

Competencies:

3. Utilize results of tests to plan instruction. Results of tests may be available in the student's cumulative file, or as a result of specific request by teachers or other professionals.

4. Prescribe remedial math activities. Based on deficiencies encountered, remedial math activities may be suggested and coordinated through the pupil evaluation team. These activities may require the use of specialists.

5. Prescribe remedial reading activities. Based on deficiencies encountered, remedial reading activities may be suggested and coordinated through the pupil evaluation team. These activities may require the use of specialists.

Objective # 8: Select or develop modules or units of instruction appropriate for special needs students.

Competencies:

1. Adopt or adapt instructional materials. Instructional materials include texts (of varying reading levels), A.V. materials of various types, and teacher-made materials. These materials should be coordinated with the needs and abilities of the student.

2. Identify necessary special services. Special services may include transportation, transcribing, recording, and interpretation (signing, etc.) services both to and from the school and within the industrial education facility or lab.

3. Organize a unit of instruction on career education. Include opportunities for self-assessment, career planning, and exploratory activities. Guide student in development of long and short range career objectives.

4. Incorporate inductive and deductive thinking into curriculum. Provide time and activities which allow for inductive approaches to problem solving by students. Also provide opportunities for descriptive activities and consequent analysis.

Objective # 9: Design instructional strategies.

Competencies:

1. Recognize instructional options. Instructional options include active, interactive, and reactive approaches to the relationship between the teacher/manager and the learner. Options also include varying of instructional activities to accommodate different learning styles.
Objective # 9: --Continued--

Competencies:

2. Sequence tasks to conform with learning styles, pace, and inferred potential of students.

Sequencing may include the setting of additional enabling objectives, or additional activities of a remedial or review nature. Sequencing implies a developmental growth in that additional skills are built on prerequisite skills of a lower order.

Objective # 10: Identify the cognitive, affective and psychomotor level of each student in order to prescribe an individual education plan.

Competencies:

1. Use the results of achievement tests and other assessments to plan instruction.

Prior to specifying instruction, the student's present level must be ascertained. Assessment activities include: obtaining available information from cumulative files, and collecting additional information by means of standardized formal assessment, general achievement tests, formal diagnostic tests - also informal assessment - criterion referenced tests, diagnostic teaching, systematic observation.

2. Understand and follow state and federal guidelines.

These guidelines are found in the state plan for special education, the state plan for vocational education, and the federal laws (94-142, 94-482, etc.).

3. Establish performance objectives based on tasks in occupations.

Using a task analysis or other referent, develop the needed on-the-job competencies for a given occupation. Those competencies which are general for an operative in the occupation should be listed.

4. Develop the Individual Education Plan.

The Individual Education Plan should include at least:

- Assessment of the pupil's current educational status,
- Goals - for a minimum of one year,
- Required professional and instructional services,
- Required facilities, materials, and media,
- Educational ancillary services,
- Essential out-of-school services
- Evaluation methodology.
Objective #11: Translate statements about physical and sensory abilities and limitations into statements about instructional alternatives.

Competencies:
1. Identify educational goals in terms of the student's abilities and develop long range educational options. Educational goals include the possibility of additional educational attainment beyond the extent of the secondary program, also additional training outside the educational institution. (OJT, etc.) Long range educational options include additional education, training, and/or redirection to other career areas.

2. Prioritize educational objectives. Objectives are prioritized to allow progress toward longer range educational goals. The relationship between enabling and terminal objectives assists in this process.

3. Break down long range goals into sequences of enabling goals. Enabling goals should include short term goals (must be included in IEP) and longer range goals.

4. Write and develop objectives for mainstreamed special needs students. (Consider entry level of student.) These objectives should be behavioral in nature and able to be evaluated. They are often developed as a part of the IEP.
Objective # 12: Be aware of student’s interaction with peers, teachers, parents, and others.

Competency:
1. Assist student in interpreting his own behavior. Provide feedback to the student regarding his interaction within the social context of the educational program. Encourage cooperative and productive steps to improve that interaction in conjunction with counseling services or PET functions.

Objective # 13: Select and utilize appropriate techniques for instruction.

Competencies:
1. Use small group instruction. Include small group instruction when appropriate. Match this procedure with educational outcomes for both handicapped and non-handicapped students.

2. Use peer instruction techniques. Utilize peer interaction by teaming handicapped students other students, handicapped and non-handicapped, where efficient for learning.

3. Supervise and use laboratory-based activity. Laboratory activity should be realistic and success oriented. Modifications of facilities and equipment as well as procedures may be necessary. Laboratory experience includes activities required for organization of the laboratory environment and actual lab. work, clean-up, etc.

4. Demonstrate ability to use materials, tools, and processes. Utilize the demonstration method where appropriate and modify delivery techniques where necessary for effective results with handicapped learners. Include demonstrations of equipment/facility/process adaptations for special needs students. May include the development and use of special visuals, mirrors, video recordings, etc.

5. Employ questioning. Utilize questioning and allow sufficient time for expression of ideas. May be used as an inductive (exploratory) approach.

6. Use role playing activity. Role playing may include roles normally included in occupational settings, and may contribute to career education at the exploratory level.
Objective #13: —Continued—

Competencies:

8. Establish and demonstrate safe use, storage, and maintenance of tools and equipment. Include any modifications of facilities and/or procedures. Include handicapped in normal maintenance activities.

Objective #14: Effectively build a series of educational experiences which lead to a better understanding of career development.

Competencies:
1. Include self-awareness activities. Activities include exploratory activities within the lab, as well as use of lists of industrial tasks, standards, limits, etc.

2. Develop career awareness and provide career orientation. Include information from pamphlets, films, guest speakers, and other resources. Pattern work in the industrial education lab. to provide orientation type experiences.

3. Develop career decision making skills. Include or make available information about career requirements, and options for advancement and/or change. Encourage long range planning as well as shorter term planning.

Objective #15: Modify and utilize equipment, materials, and instructional methodology to facilitate the learning of special needs students.

Competencies:
1. Formulate instructional strategies and techniques to help learning of special needs students. Options include: Direct instruction, Inquiry-discovery methods, Group investigations, Precision teaching, Instructional games, Creativity- problem solving, Psychoeducational diagnostic-prescriptive procedures, Peer or cross-age tutoring, Developmental teaching.

2. Utilize appropriate media equipment and materials to improve sensory stimulation. Options include commercial and teacher-made visuals, auditory recordings, and tactile devices such as models, cutaways, etc.
Objective # 15: --Continued--

Competencies:
3. Present a lecture utilizing non-verbal visuals and related techniques to improve communication. Options include media devices, special services such as signing, and demonstrations.  
   (-) (2) (4) (-) *

4. Incorporate appropriate business, OSHA, and industrial manuals in curriculum. Encourage student use of these materials to determine rules, regulations and technical information and specifications.  
   (1) (3) (2) (-) *

Objective # 16: Develop positive reinforcement techniques to motivate and reinforce the learning process. Include the usual rewards for desired performance as well as the use of behavior substitution for undesired behaviors.  
   (-) (-) (6) (-) *

Objective # 17: Initiate activities to further the social development of handicapped persons and others.

Competencies:
1. Set the development of positive social skills as an objective. Include appropriate interaction, sharing, and helping as desired results of the development of social skills.  
   (-) (1) (5) (-) *

2. Encourage group processes and reward group contributions as appropriate. Include group projects, teams, etc. Emphasize acceptance of all students in activities.  
   (-) (1) (5) (-) *

3. Organize a student club to enhance social development. Foster social development in formal and informal situations such as clubs, etc.  
   (-) (4) (2) (-) *

Objective # 18: Inform school officials of responsibilities regarding placement and supportive services for handicapped learners. Include changing, continuing needs of the student/teacher in the industrial education environment. Communication may involve a request for a PET meeting(s).  
   (-) (3) (2) (1) *

-- NOTE: One respondent did not answer any items on this page of the instrument; therefore, the totals for each item is six (6), not seven (7).
Objective # 19: Extend and implement programs for individual students. - Give attention to personal needs of the student.

Competencies:

1. Consult with supportive teachers.
   Supportive teachers include reading, mathematics, and other teachers who are knowledgeable about remedial programs, also special education teachers and additional members of the student's PET.

2. Conduct conferences with individual students.
   Conferences include sessions to facilitate the setting of objectives, evaluate progress, redirect process, etc.

3. Establish a student tutoring system.
   Personnel include aides, personnel from other subject areas within the school, social agencies, and peers.

4. Conduct successful home visitation and involve the family as a source of primary reinforcement.
   Actively seek parental input and support, may occur as a result or outgrowth of PET activities.

5. Participate in student-parent conferences.
   Student-parent conferences may occur as part of the PET process, or may be a part of the development and delivery of the IEP.

6. Plan and coordinate on- and off-campus on-the-job programs.
   Planning and coordination include cooperation with existing programs and coordination personnel, if available. Work-study and other on-campus or school related programs may be organized.

7. Aid special needs students with work permits.
   Aid may consist of simply helping the student with the formal aspects of application, or may involve assessment of strengths and weaknesses which relate to the proposed job situation.

8. Help the individual develop a positive attitude about self.
   Recognize the student as a person with strengths and weaknesses, as well as abilities and disabilities.

9. Encourage the student to express ideas, etc.
   Allow and make provision for student input into the organization, management, and evaluation of his or her individual program.
Objective # 19: --Continued--

Competencies:

10. Provide information about further education and/or advancement for the special needs student.

Information may include descriptive literature about further educational experiences or opportunities, or requirements for advanced positions in a given job situation.

11. Aid student in adjusting to his/her disability.

Develop a positive attitude in the learner by emphasizing the abilities rather than the disabilities. Be supportive of exploration of new areas but be realistic.

Objective # 20: Establish and maintain an appropriate group learning environment which can provide success for special needs students and others.

Competencies:

1. Arrange guided field experiences.

Special attention should be given to providing for students ambulatory and other physical handicaps. Arrangements should be checked out with the host prior to scheduling these field experiences.

2. Moderate student discussion of sensitive issues.

Use class discussion as a vehicle to help resolve "crisis" situations:
- Discuss all sides of the issue
- Be sure all have an opportunity to contribute
- Make whatever decision is necessary (intervention)
- Communicate back to the group

3. Stimulate learning through brainstorming, buzz groups, and question box techniques.

Seek input into the planning and execution of the learning process. Maintain non-threatening means of communication.

4. Locate support for those with personal adjustment problems.

Support personnel may include guidance personnel, school psychologists, personnel from social agencies, etc.

5. Develop procedure for job relocation or rotation in the laboratory.

May include responsibilities within the laboratory such as tool room responsibilities, clean-up duties, etc. Emphasize real world responsibilities as far as possible.
Objective # 20: --Continued--

Competencies:
6. Provide success producing situations.
Engineer at least some activities for no failure. In group learning situations, change membership of groups when advisable.

7. Be sensitive to and use behavior modification and other adjustment approaches.
Use techniques such as behavior substitution to extinguish undesired behavior and to reinforce desired behavior.

8. Define operating rules and responsibilities of both the learner and the teacher-manager.
Define the role of the teacher-manager and allow for student control of matters which are appropriate.

9. Establish the order of business each day.
Determine at least the beginning and termination routines for each day. Include communication of expected outcomes for the day.

10. Provide opportunities for student to achieve recognition and receive personal group approval.
Opportunities include student personnel systems, class meetings when advisable, group meetings when useful for group functioning.

Objective # 21: Establish and maintain appropriate attitudes.

Competencies:
1. Encourage the establishment of appropriate attitudes of regular students towards special needs students.
Utilize activities which emphasize the client-centered approach rather than crisis-intervention. Include pre-sensitization where possible before actual teaching intervention.

2. Encourage the establishment of appropriate attitudes of special needs students toward regular students.
Strengthen the concept of self-worth and value within the learning process. Recognize that all people have strengths and weaknesses - emphasize strengths. Deal with attendant frustration in positive ways.

3. Encourage the special needs student to develop positive attitudes toward self and work.
Strengthen the concept of self-worth by providing activities which can be successful yet are challenging. Allow the special needs student to grow, but be sure to include some success.

4. Encourage regular students to develop positive attitudes towards self and work.
Same as above.
Objective # 21: --Continued--

Competencies:
5. Encourage appropriate teacher attitudes by conducting teacher-teacher conferences.
Make yourself available for consultation regarding successes and problems encountered in the teaching/learning process with handicapped learners. Share methods, strategies, etc. which will help others.

Objective # 22: Establish and modify an appropriate physical environment.

Competencies:
1. Reorganize physical floor plan of classroom/laboratory. Consider architectural accommodations such as adequate provision for access, entry, mobility. Also consider the possibility of special furniture in reactive and interactive areas.

2. Organize instructional environments which encourage exploratory activities. Employ inductive methods of problem solving, encourage experimentation.

3. Execute emergency procedures in a calming manner in the event of a seizure, fatigue, or excessive emotional reaction. Utilize student self-organization to the extent possible to help manage the on-going process (Lab. or Classroom) while performing individual intervention.

4. Supervise and coordinate aides, tutors, etc. Perform the required management procedures- filling out reports, etc. Involve these personnel in the environment as a viable part by encouraging participation to the extent possible.

Objective # 23: Establish and maintain a working relationship with industry and employers.

Competencies:
1. Assist employers and supervisors in acquiring techniques to enable them to work with special needs students. Act in the role of an available consultant and refer employers and supervisors to appropriate agencies and other resources when possible.

2. Plan and coordinate on- or off- campus on-the-job instruction. Cooperate with coordinators when possible - offer consultant services when practical.
EVALUATION AND DISSEMINATION

Objective # 24: Design a system for monitoring student achievement on a regular basis.

Competencies:
1. Use a variety of performance-based techniques. Measure understandings, skills and attitudes through student performance. Utilize formal skill evaluation exercises when available and construct appropriate ones for in class uses. Systematic observation may be used to provide input for affective assessment. (-) (-) (7) (-)

2. Maintain student records in an objective manner. Records include objectives achieved, cognitive measures, etc. Seek and use student input in the evaluation process. (-) (-) (7) (-)

3. Evaluate pupil performance at each objective level. The evaluation contains information about the quality of performance as well as noting the fulfillment of the objective. It is a measure of readiness to continue. (-) (1) (6) (-)

4. Conduct a system of reporting student progress to student and parents. Utilize the system provided by the educational system. If it is not adequate to indicate progress within the individual student's program, devise additional methods of reporting progress (such as a narrative report, etc.). (-) (1) (6) (-)

5. Evaluate particular teaching process and strategy as related to student performance and modify. Based on the performance of individuals in the teaching/learning situation, critically examine the process and strategy and modify as needed. Consult with other professionals such as special educators when appropriate. Seek student input. (-) (2) (5) (-)

6. Assess the ability of the individual to modify his/her behavior. Consider factors which limit and enhance the ability of the individual to succeed; prescribe activities which encourage positive change. Utilize student input. (-) (2) (5) (-)

Objective # 25: Organize and/or conduct a local program review.

Competencies:
1. Utilize follow-up data from students who leave or graduate to improve the program. Collect data regarding employment and/or other activities of graduates and those who leave the program. Ask for feedback about strengths and weaknesses, suggestions, etc. (-) (3) (3) (1)
Objective # 25: --Continued--
Competencies:

2. Share program strengths and weaknesses with other professionals.
   Based on follow-up data and process evaluation, communicate with other professionals to share ideas, strategies, etc.
   (-) (3) (4) (-)

3. Establish and utilize advisory groups.
   Utilize advisory groups to enhance value of the program by seeking input from employers, professionals in agencies which work with handicapped, and others.
   (1) (1) (4) (1)

Objective # 26: Develop and use a filing system to accommodate student records.
Competencies:

1. Prepare records of program and development as required by law.
   Records include accounting for monies spent, materials expended, etc. May also include specific testing and results, changes made and funded under specific laws, etc.
   (-) (3) (4) (-)

2. Prepare records of students and development as required by law.
   Records include specific evaluations for use by PET, as well as others.
   (-) (3) (4) (-)

3. Provide for a system of authorization for the release of information from student records.
   Provide for the preservation of rights of students and others to privacy in accordance with federal laws.
   (-) (2) (5) (-)

Objective # 27: Develop public relations literature.
Competency:

1. Devise methods of interpreting special needs and education programs to: parents, teachers, administrators, and community groups.
   Methods may include open-house activities, press releases, projects with high visibility within the community, etc. A written statement of goals and objectives should be prepared and made available to interested parties.
   (-) (3) (3) (1)

Objective # 28: Obtain public support for vocational programs for special needs students.
Competency:

1. Conduct an employer appreciation program.
   Program may be combined with recognition of graduates, open house activities, etc. Provides contacts for graduates and others.
   (-) (3) (3) (1)
Objective # 29: Conduct a parent-teacher conference.

Competency:
1. Utilize the parent-teacher conference to enhance the educational process for the individual.

Meet with both parents if at all possible. Assume good intentions by parents. Listen to parents. Consider all alternatives with parents. Expect criticism. Don't expect too much from one conference.
Objective # 30: Communicate with objectivity and specificity with other professionals.
Relate facts and specifics, not opinions unless they are requested and are clearly labeled as professional opinions. Keep copies of all written communication.

Objective # 31: Demonstrate a commitment to teaching.
Become active in state, local, and national professional organizations. Become active in professional groups which deal with specific subject matter areas. Seek additional training - in-service, extension coursework, etc.

Objective # 32: Demonstrate knowledge of the ethical procedures of a professional.
Be familiar with the codes of ethics published by professional organizations (NEA, etc.)
Subscribe to and support these codes.

Objective # 33: Keep abreast of professional developments, societal needs, and technological advances.
Join and become involved in professional organizations, technological societies, etc. Be active in the community.

Objective # 34: Research current trends in business and industry, (e.g., Technological practices, employment practices, and training needs, etc.)
Strengthen ties with local societies and organizations.
Be aware of national trends by membership in national organizations, etc.
APPENDIX N

Comments Received from Joint Members of the American Vocational Association and the American Industrial Arts Association Special Needs Committees
APPENDIX N

The following comments were received from the returns from the joint members of the American Vocational Association and the American Industrial Arts Association Committees for Special Needs. The names and any other identifying references are left blank to preserve the confidentiality of the respondents.

Could you please share these results with me and others who completed the survey.

Thank you for your consideration.

Enclosed is the questionnaire competencies for I. Ed. teachers of special needs. I completed it and also asked ______ ______, a post-doctoral visiting professor with an I. A. and Special Needs background to also mark it. He has indicated that he will also write you.

I had some problems with it. One is the word "desirable" in the instructions. Sure, all would be desirable at the high level, BUT not realistic. What priorities?

Also several competencies obviously require a group or cooperative actions of several e.g., planning an IEP or a total program. Some others should be more specialized in all or part of the activity. Therefore, the I. Ed. teacher would have lower competence than some of the others; hence, what does high and low mean?
Another, competencies, and level, would differ for an I.A. teacher, a Voc - Ind. teacher and a coop. coordinator. As near as I can tell, all are lumped together for this scale. Competency level would also differ for age level of student and ability.

It is an interesting list and could provide a basis for a number of uses but some differentiations would have to be made.

We do hope your efforts here will help you in your educational undertaking.

I am happy I had the time to examine your materials. I hope you will share your finished product with me, and then I can score you "High Level" on Objective #30.