

5-1988

Integrating Mildly Handicapped Students in Industrial Arts Programs in Northeastern Iowa

William Martin Leonhart
University of Northern Iowa

Let us know how access to this document benefits you

Copyright ©1988 William Martin Leonhart

Follow this and additional works at: <https://scholarworks.uni.edu/grp>

Recommended Citation

Leonhart, William Martin, "Integrating Mildly Handicapped Students in Industrial Arts Programs in Northeastern Iowa" (1988). *Graduate Research Papers*. 3686.

<https://scholarworks.uni.edu/grp/3686>

This Open Access Graduate Research Paper is brought to you for free and open access by the Student Work at UNI ScholarWorks. It has been accepted for inclusion in Graduate Research Papers by an authorized administrator of UNI ScholarWorks. For more information, please contact scholarworks@uni.edu.

Offensive Materials Statement: Materials located in UNI ScholarWorks come from a broad range of sources and time periods. Some of these materials may contain offensive stereotypes, ideas, visuals, or language.

Integrating Mildly Handicapped Students in Industrial Arts Programs in Northeastern Iowa

Abstract

The field of industrial arts is in a position to contribute considerably to the education of this group. It is this field of education that can prepare them personally, emotionally, socially, and economically to meet the demands of an adult industrial society. (Sharkey, 1964, p.17) The problem of this study is to ascertain how industrial arts teachers can assist with the education of the educable mentally handicapped student, referred to in this paper as the Educable Mentally Handicapped (E.M.H.).

INTEGRATING MILDLY HANDICAPPED STUDENTS
IN INDUSTRIAL ARTS PROGRAMS IN NORTHEASTERN IOWA

A Departmental Research Paper
Submitted
In Partial Fullfillment
of the Requirements for the Degree
Master of Arts

William Martin Leonhart
Department of Industrial Technology
University of Northern Iowa
May 1988

This Study by:

William Martin Leonhart

Entitled Integrating Mildly Handicapped

Students in Industrial Arts Programs in Northeastern

Iowa has been approved as meeting the Department of

Industrial Technology, Departmental Research

Paper requirement for the Degree of

Master of Arts - Industrial Arts

Approved:

5/3-88

Date

Graduate Advisor

5-3-88

Date

Member, Graduate Faculty

5-4-88

Date

Head, Department of Industrial Technology

ACKNOWLEDGEMENTS

Many people are responsible for the completion of this research paper. First of all, a large thank you goes out to the respondents who completed the questionnaires for input into the research document.

My graduate advisor Dr. Ervin A. Dennis for the continuous support and patients during the peaks and valleys of my coursework. To Dr. Charles D. Johnson and John Schultz for their time and effort in looking over various papers throughout my graduate program.

The most important acknowledgement goes to my wife, Susan, and children, Matthew and Jennifer. Absence from home wasn't easy for a once thought impossible goal.

TABLE OF CONTENTS

	page
ACKNOWLEDGEMENTS	iii
TABLE OF CONTENTS	iv
LIST OF TABLES	vii
CHAPTER 1. INTRODUCTION	1
Statement of the Problem	2
Significance of the Problem	2
Purpose of the Study	3
Definition of Terms	4
Assumptions	5
Limitations	5
Methods of Approach	5
Chapter 2. REVIEW OF LITERATURE	7
Rationale and History of Mainstreaming	8
Definition of Special Education Students	16
Goals for the Special Education Student	17
Method of Accommodations	19
The Role of the Industrial Arts Teacher	20
Role of Administration and the Special Education Teacher	26
Industrial Arts Teacher Preparation	29
Chapter 3. RESEARCH METHODOLOGY	34
Written Questionnaire Construction	34
Personnel Interview	35

Selection of Questionnaire Participants	36
Data Collection	37
Summary	38
Chapter 4. ANALYSIS OF DATA	39
Responsibility for Teaching Industrial arts to Special Education Students	39
Accommodations for Special Education Students in Industrial Arts Programs	40
Classification of Special Education Students. . .	41
Placement of Special Education Students in Industrial Arts Classes	42
Scheduling of Special Education Students.	43
Problems Encountered in Teaching Special Education Students	43
Services of a Special Education Teacher	44
Specialized Training for Industrial Arts Teachers	45
Instructors Teaching Industrial Arts to Special Education Students	45
Teacher Preparation	47
Special Knowledge the Industrial Arts Teacher should Possess.	48
Superintendent's Role in Providing Special Education Programs for the Mildly Handicapped . .	49
Chapter 5 SUMMARY, CONCLUSIONS, AND RECOMMENDATIONS	52
Summary	52
Conclusions	54
Recommendations	55

APPENDIX A	LETTER TO INDUSTRIAL ARTS TEACHERS	57
APPENDIX B	INSTRUCTORS QUESTIONNAIRE	58
APPENDIX C	ADMINISTRATORS' QUESTIONNAIRE	66
APPENDIX D	Mailing list of Instructors for Survey . .	67
APPENDIX E	FOLLOW-UP POST CARD	69
REFERENCES	70

LIST OF TABLES

Table	Title	Page
1	Number and Percentage of Respondents Indicating Accommdations made for Special Education Students in Industrial Arts Programs	41
2	Frequency of Responses and Sources from whom Industrial Arts Teachers were Informed of Special Education Students In their classes	42
3	Problems Encountered in Teaching Special Education Students	44
4	Sources of Counseling and Advice Relative to the Teaching of Special Education Students	48
5	Special Knowledge an Industrial Arts Teacher Should Possess to Effectively Teach Special Education Students	49

CHAPTER I

INTRODUCTION

Presently the American school system is dedicated to the teaching of all children. The Education for all Handicapped Children Act of 1975 (P.L. 94-142) provides that handicapped children be placed in the "least restrictive environment". The mainstreaming movement has placed a tremendous responsibility on the regular classroom teacher for meeting the needs of handicapped students mainstreamed into the regular classroom. Often teacher training programs have not adequately prepared teachers for this task.

In general, the objectives for teaching these students are the same as for teaching any student. The Educational Policies Commission of the National Education Association has stated some objectives for American Education that are widely accepted for teaching the mildly mentally handicapped. These include self-realization developed by health, learning, culture and recreation, understanding of human relationships, economic efficiency as a producer and consumer, and civic responsibility.

Devilbiss (1964) stated that in schools, academics is emphasized which involves verbal skills. This is the area of greatest difficulty for the mentally handicapped. The

mentally handicapped person holds or loses jobs as a result of good or poor skills, attitudes, and aspirations not necessarily involving academic skills.

Statement of the Problem

The field of industrial arts is in a position to contribute considerably to the education of this group. It is this field of education that can prepare them personally, emotionally, socially, and economically to meet the demands of an adult industrial society. (Sharkey, 1964, p.17) The problem of this study is to ascertain how industrial arts teachers can assist with the education of the educable mentally handicapped student, referred to in this paper as the Educable Mentally Handicapped (E.M.H.).

Significance of the Problem

As a result of P.L. 94-142, many handicapped children are mainstreamed into regular classrooms for part of the school day, and the classroom teacher is responsible for adapting the instructional program to meet the exceptional educational needs of these students. Appropriate individualized instruction, as specified in the individual education program (IEP) for each handicapped student, is expected to occur as described in P.L. 94-142. The results of this study have revealed the current status of industrial arts programs in Northeast Iowa for special education students, the current amount of teacher training

and preparation, and some methods of accommodating these students in industrial arts programs.

Mildly handicapped students are just as important as the non-handicapped students when public education is supported by state funding. The education of these students will allow them to cope with situations in society of the future. Industrial arts can be a valuable experience for special education students and make them productive citizens of communities.

Purpose of the Study

The purpose of this study was to historically look at how mainstreaming evolved. The investigation has looked at different methods of instituting special education programs involving E.M.H. students. The study attempted to reveal what is being done in other public high schools, what activities are appropriate, and what special equipment and techniques are being used in other industrial arts programs. More specifically the answers to the following questions will be sought.

1. Are special education students taught industrial arts as a separate group or as part of a regular class?

2. What are some of the benefits of having special education students in classes?

3. What are some specific problems encountered by the industrial arts instructors in working with special education students?

4. What type and amount of formal preparation have industrial arts instructors received in the area of special education?

5. Do industrial arts instructors receive assistance in the area of special education from special education teachers, school administrators, or other staff members?

Definition of Terms

The meaning of words as they relate to a study can be misinterpreted. The following words have been defined for clarification of this research study.

Integration - Placing special education programs in the regular school setting with some selected opportunities for children to interact.

Handicapped Children - Mildly handicapped students are those labeled mild mental disability or in the past were referred to as educable mentally retarded.

Least Restrictive Environment - In this study, the term means that handicapped children are educated in the regular classroom with their non-handicapped peers, unless their particular educational needs cannot be met that way.

Mainstreaming - Placing handicapped children in a regular classroom for all or part of their academic education with minimal special assistance.

Assumptions

It is assumed that E.M.H. students will benefit from participation in the regular industrial arts program. The assumption is made that when a selection of area industrial arts teachers is made and a questionnaire sent, a high percentage of responses will be received. Pertinent data will be accumulated and analyzed for a better understanding of this group of students.

Limitations

The research was limited to high school programs located in Area 1 which includes the surrounding eight counties in the northeast corner of Iowa. The survey included schools that place E.M.H. students in regular industrial arts courses and to schools that have E.M.H. students who do not participate in industrial arts. Schools were selected randomly from a list provided by the special education consultant working at area education agency.

Methods of Approach

The role of industrial arts as part of the special education curriculum with respect to teacher preparation

and methods of accommodating special education students was investigated through the use of books, magazines, and other literature. This was done to obtain a basic knowledge in this area. A questionnaire was developed and sent to area industrial arts teachers and was used to gather information concerning the methods of accommodating special education students in industrial arts programs and also the preparation of industrial arts instructors. A list of industrial arts instructors was obtained through the special education consultant for A.E.A. in Elkader, Iowa. From this list a number of industrial arts instructors were selected based on size of school and subjects taught. A list of questions was developed and interviews conducted with administrators of various high schools on how they educate their special education students who are in their district. The writer investigated findings and did gain knowledge on how other industrial arts teachers deals with special education students when they were mainstreamed into industrial arts classrooms.

CHAPTER II

REVIEW OF LITERATURE

There are over 8 million handicapped children ages 6 to 19 in the United States. Service to these students has been expanding in recent years. According to the National Advisory Committee on the Handicapped, 58% received educational services in 1976 as compared with about 40% in 1970 and 10% in 1950. This trend will surely accelerate under the impact of new legislation and will put new challenges before the educator.

The education of these students presents many problems to teachers in our nations's schools. Birkland and Cochran (1968) have described the situation by saying:

Today there is definite agreement that a number of students in any unselected school population cannot profit by the organization and curriculum of the average public school. For them special provisions must be made to provide for their fullest development. Among these students who need special provision are the young people who are generally designated mentally retarded or handicapped students (p. 21).

In past years industrial arts has been confronted with the problem of dealing with the mentally retarded pupil. Smith and Tisdall (1965) have stated that:

Perhaps the primary point to be made is that the industrial education laboratory can realistically be used as an educational setting in which more can be done for the over-all development of a retarded child than any other setting within the total school environment (p. 58-59).

Rationale and History of Mainstreaming

The case for or against mainstreaming is not as clear-cut as some people may believe. Research has not indicated a definite superiority of mainstreaming over special classroom placement for the mildly mentally retarded. Mainstreaming is such a complex issue with so many factors involved in its success that it is difficult to adequately assess current mainstreaming programs. Baum (1979) states that empirical findings leading to the acceptance of mainstreaming are: (a) lack of demonstrated achievement differences between mentally handicapped children educated in special classes vs. in regular classes, (b) negative effects of labeling, (c) resulting effects of teachers' lowered expectations, (d) biases of IQ testing and inappropriate class placement, and (e) parental influences in demanding equal and quality education for their handicapped children. In order to develop a better perspective of the concept of mainstreaming, instructors should look at some historical events that have influenced

the eventual legislative actions which made mainstreaming a reality in educational systems today.

Special education had its roots in the nineteenth century when the compulsory attendance school law came into being. It was then that the mentally retarded were recognized as having special educational needs since they did not fit into the existing school programs. As a result, most of these people were placed in institutions which were supposed to be responsible for their education, but, unfortunately, services offered were primarily custodial. In 1897, the first special education class was established in the public schools in Springfield, Massachusetts. Progress for educating the mentally retarded was delayed by the Depression and World War II. In the 1950's and '60's, growth of special education classes for the mentally retarded started again (Bates, 1977).

Increased awareness of human potential and dignity helped the establishment in 1950 of an organization called, the National Association for Retarded Children in Minneapolis, Minnesota. It later became known as the National Association for Retarded Citizens (NARC). NARC was the first of the organizations organized by parents on behalf of their handicapped children. The main effort of NARC was to improve the educational opportunities of the mentally retarded. NARC confronted the issue of the so

called "trainable" children being denied admission to public schools. In 1956, a foundation grant from the American Legion led NARC to hire Dr. Ignacy Goldberg as an educational consultant to work in this area. Goldberg debated with Dr. William Cruickshank, an authority in special education, over the right of "trainable" children to the best educational environment. This debate, published in the pages of the National Education Association's (NEA) Journal, was a significant milestone toward mainstreaming (Dybwad, 1980, pp. 85-87).

The United States federal government became involved in the education of the mentally retarded in the late 1950's. In 1957, the U.S. Office of Education received an appropriation for research into the problems of mentally retarded children. In 1958, states were allocated federal monies for training teachers in the field of mental retardation. Three years later, President John F. Kennedy established the President's Board on Mental Retardation which led to further federal programs and the elevation of special education to a more significant level within the U.S. Office of Education. In 1963, Kennedy signed the Mental Retardation Facilities Act which appropriated \$50 million for the education of the handicapped and \$11 million for the training of teachers of the handicapped. At that time, the Division of Handicapped Children and Youth was established under the U.S. Office Of Education.

As State and Federal financial support for special education grew, it became profitable for school systems to set up "special classes", often away from regular school settings. Too often they became "dumping grounds" for behavior problems and a place to segregate ethnic or racial minorities (Dywad, 1980, pp. 85-90).

The Civil Rights movement of the 60's was very significant in regard to the growth of the mainstreaming concept. The same rationale regarding harmful effects of segregation found in the Civil Rights movement influenced the thinking of those working for rights of the handicapped. A strong coalition of parents, civil rights lawyers, legislators, and public servants initially fought the denial of education to children with handicaps and then the emerging practice of segregated classes for exceptional children. The separate, often sometimes discriminatory, system of regular education vs. special education within public schools came under sharp attack by groups from all segments of the population.

In the late '60's, educators were also beginning to question the efficiency of special education classes. In 1968, Dunn came out strongly against special education classes segregated from the rest of the school population. They were seen to be ineffective and undesirable for many students (Bates, 1977).

Court cases began to flourish in the late '60's and early '70's regarding the rights of handicapped children. In 1967 the Hobson vs. Hanson case held that the tracking system of educational placement in Washington D.C. was illegal since it was in violation of the equal protection clause of the U.S. Constitution (Hutt and Gibby, 1979). In 1972, the Pennsylvania Association for Retarded Children's Right to Education case resulted in Pennsylvania ordering "zero reject" education; that is, free public school for retarded children. Of the 15,000 previously out of school children admitted to the public schools because of that decree, only 52% were mildly retarded. The Peter Mill case in Washington D.C. extended the zero reject imperative to all handicaps (Corrigan, 1978, pp. 10-14).

In 1970, Congress passed the Developmental Disabilities Act, which for the first time, allocated an action priority to cases of severe disability. A 1975 amendment added to it a Bill of Rights for persons with developmental disabilities and required the establishment of a Protection and Advocacy System in each state (Dybwad, 1980, pp. 85-87).

Provisions ensuring that handicapped children would get appropriate education in so called regular educational environments was framed in the Mathias Amendment, P.L. 380, U.S. Code Section 413. It was written after the model statute of the Council for Exceptional Children and stated

that handicapped children must be educated with non-handicapped children, but that their education be differentiated by special needs and appropriate services (Corrigan, 1978, pp. 10-14).

With these numerous events as a foundation for action, a strong coalition of parents, lawyers and legislators, supported by the Education Commission of the States, brought the Education of All Handicapped Children Act of 1975, P.L. 94-142, through Congress, and it was signed November 29, 1975. P.L. 94-142 became fully effective on October 1, 1977 (fiscal year 1978). Senator Edward Kennedy stated that the heart of P.L. 94-142 is its emphasis on the tremendous potential for an estimated eight million handicapped young persons who often are neglected. It guarantees a free appropriate public education for all handicapped children, without regard to the ability of their families to provide these programs (Kennedy, 1978, pp. 7).

To insure implementation of P.L. 94-142, each state submitted "State Plans" to the U.S. Office of Education, Bureau of the Education for the Handicapped (BEH). By the 1978 school year, a "child find" was to have been completed and services extended to include handicapped persons ages 3-21. Twelve percent of each state's children were allowed to be labeled as handicapped. Federal assistance to those states which provided free appropriate education

for all handicapped children ages 3-21 began September 1978, and a funding formula was used to project increases over several years. It was anticipated that by 1982, more than 3 billion dollars would be provided annually: 75% to local agencies and 25% to state agencies (Merchant, 1979, pp. 1-7).

Three important aspects of P.L. 94-142 are: (a) provision to meet the educational needs, in the least restrictive environment possible, of all exceptional children regardless of the severity of their handicapping condition; (b) preparation of an individual education program (IEP) for each child and; (c) parental involvement in the planning process (Baun, 1979, pp. 20-21). State and local responsibilities spelled out in P.L. 94-142 are listed by (Bates, 1977):

1. Early identification of handicapped children;
2. Provision of full service;
3. Provision of due process machinery;
4. Individualized programs for all handicapped;
5. Special education in the "least restrictive environment";
6. Protection of confidentiality;
7. Assurance of nondiscrimination in testing and evaluation;
8. Provision of parent consultation;

9. Inservice training and comprehensive personnel development;
10. Policy guaranteeing the rights of all handicapped children to free, appropriate education.

The basic rationale for P.L. 94-142 is that handicapped persons are human beings who have the right to access of equal educational opportunity even if it costs more to provide it. The mandate marks a change of focus from children's handicaps to their learning needs from segregated classrooms and institutions to appropriate education in the least restrictive environment. Barriers between regular education and special education must be eliminated. All educators must now become members of a human service team and be prepared to provide individual instruction appropriate to the needs of the handicapped students. The school must develop ways to utilize the individual's own learning style and speed. Parents must agree and sign a plan which is designed to meet the child's individual educational needs and they must be consulted throughout the placement process (Merchant, 1979, pp 1-7).

A simplified interpretation of the 1975 mandate is offered by Dybwad. (1980), "It is normal to be different is the message of P.L. 94-142." Indeed, the attitudes and actions of educators and society in general in regard to differences is an underlying concern when considering the

Implementation of the Education for All Handicapped Children Act of 1975, P.L. 94-142 (p. 85-87).

Definition of Special Education Students

The educable mentally handicapped person, sometimes referred to as mentally handicapped, educable retarded slow learner, special student, or mentally retarded is that person with measured intelligence quotients between 55 and 80. The whole group of mentally retarded people represent about three to five percent of school age children.

There are four levels of retardation: (Scott and Sarkees, 1982, pp. 21-22). The first level of retardation includes the mildly retarded, those students having intelligence quotients between 52-69 who are usually maintreamed into regular programs and classrooms with the assistance of special education personnel in the form of related academics, remedial help, and work study opportunities. They are prepared with skills that will make them become independent in society. The second level of retardation are the moderately retarded students with intelligence quotients between 36-54 and known as "trainable mentally retarded" (TMR) students. Many trainable individuals can develop skills that will enable them to perform parts assembly work or production items in sheltered workshop facilities. If these types of students are in a public school, generally they are in a

self-contained classroom for most of the day. The major objectives of their instructional programs include developing self-sufficient skills and basic social skills. The third level is the severely retarded students with intelligence quotients of 20-39. They do not develop academic skills. The fourth level of retardation is the profound stage with intelligence quotients of 24 or below. These students are totally dependent on others and require almost total supervision. Generally, industrial arts teachers are not responsible for teaching the severely and profoundly retarded individuals but may be called in as a consultant if specific laboratory activities are being taught.

Goals for the Special Education Student

In an article written by Koble (1978), all the nation's schools are now operating under the regulations of the Education of All Handicapped Children Act of 1975, (Public Law (94-142)). This legislation was passed by the United States Congress and signed into law by President Gerald Ford on November 29, 1975. It affects the education of the handicapped child between the ages of 3-21. The main purposes of Public Law 94-142 are to: (a) guarantee the availability of education for handicapped individuals; (b) to assure fairness in decision making for providing opportunities for the handicapped; (c) to assist

local education agencies, and school districts with programs for the handicapped by appropriating federal funds; and (d) to insure relevant educational programs for the handicapped through continued monitoring.

Public Law 94-142 focuses on the needs of the handicapped in the U.S. The act requires that state agencies as well as local school districts: (a) guarantee handicapped students a public education designed just for them at no cost to parents or guardians; (b) assure that all handicapped children who may require special education are located, identified, evaluated, and taught according to their needs; (c) guarantee in writing an individual educational plan (IEP) for each student; (d) guarantee parents who are not satisfied with their child's education the right to an impartial hearing; (e) assure fairness with regard to the selection and use of proper evaluation procedures in the language known to the handicapped; (f) guarantee handicapped children will be placed in the "least restrictive environment" using regular classes whenever possible and special classes only when necessary; and (g) develop training programs for teachers of the handicapped.

Specific goals for special education students as stated by Brown, Ford, Nisbet, Sweet, Donnellan and Gruenewald (1983) are to provide the skills and experiences necessary for them to function as independently and productively as possible in a wide variety of domestic,

recreation, leisure, vocational, and general community environments. Students who do not grow up interacting with a wide variety of handicapped and non-handicapped persons will be different from those who do. The chances are that those differences will become deficits that will restrict their life in adulthood.

Any meaningful skill, attitude, or experience that can be developed and offered in a segregated school can also be developed and offered in a non-segregated school. The inverse is not true. Segregated schools are inherently restrictive because many important skills, attitudes, and values critically needed by both handicapped and non-handicapped students will not be developed. It is vital that nonhandicapped citizens who will be future neighbors, employers, supervisors, and co-workers be provided with the skills, experiences, attitudes, expectations, and values necessary to interact meaningfully with all other citizens, some of whom will be moderately and severely handicapped.

Method of Accommodations

In modern educational philosophy, there appears to be a general agreement that industrial arts education can make a substantial contribution to the education of the handicapped students. However, there appears to be a problem with industrial arts teachers teaching the handicapped. The fear of mainstreaming can cause stress

and sometimes resentment in many teachers. According to Stevenson & Milt (1975), teachers viewed mainstreaming as stressful by ranking it as more stress producing than other facets of their jobs such as large class size, low salaries, demands from parents, and violence in the schools. The possibility of having blind, spastics, emotionally disturbed, or other handicapped children may increase frustrations to a teacher. The preparation of the industrial arts teacher and the methods of accommodating the special education students in a regular industrial arts class play an important role in the success of the special needs student. All the knowledge that can be accumulated through readings and training sessions should be related to special education students.

The Role of the Industrial Arts Teacher

Traditionally, teachers of industrial arts have had handicapped students in their classes. Public Law 94-142 has meant increasing numbers of identified handicapped students enrolled in industrial arts classes. Today there are resource personnel and supplementary aides available who are willing to help regular classroom teachers. (Koble, 1978, pp. 11-12). State and local educational agencies have developed guidelines, rules, and/or forms that have to be filled out like the Individual Educational Program (IEP). The IEP should consist of five parts evolving from

conferences that include an administrator, a concerned professional, the parents, and where appropriate, the student. The five parts are (a) current functional level, (b) annual goals and short term objectives, (c) specific services and the degree of involvement in regular programs, (d) duration of services from anticipated termination, and (e) an evaluation of progress toward achievement of objectives occurring at least annually (Lutz & Hasbargen, 1979, pp. 19-24).

The industrial arts teacher should be involved with the IEP conference because this will help him/her to learn of various weaknesses of handicapped students. When a student's handicap is explained at the IEP conference, the handicap is explained with reference to one student. The industrial arts teacher will also be made aware of certain strengths of the student.

A concern of industrial arts teachers is, "Why are there handicapped students coming into my classes?" Perhaps the class was chosen because of a student's extreme interest, special strengths, or particularly strong background. Knowingly being aware of why the teacher's program was chosen will remove the lingering fear, "You are only putting that student into my class because you don't have anywhere else to put him/her." (Kok & Parrish, 1980, pp. 19-24).

The attitudes of teachers is one of the most important variables in the success of the handicapped student. Equally perplexing is the fact that most of the special education teachers have a minimum amount of hands-on experience in industrial arts. An awareness of handicapping conditions, limitations, and barriers in the learning environment are certainly minimum requirements in developing a positive approach to mainstreaming. Industrial arts teachers must look to the special education teacher as the key to providing the best possible educational program for students. Course objectives, methodology, and physical environment in industrial arts must be carefully reviewed by teachers in both areas (Wilson, 1979, pp. 30-39).

Unfortunately, much of the special educational assessment data focuses on the person's handicap and levels of academic functioning and often provides little or no productive information about the individual ability to choose, enjoy, and demonstrate success in an industrial arts or vocational class. Academic progress may or may not correlate with a student's progress in industrial arts classes. Informal observations, as well as research data, have indicated that little relationship exists between many of the industrial arts areas and the other academics in terms of student success. A person's handicap may not surface as a problem in industrial arts education. It is

for this reason that teachers need the chance to develop opinions based on performance and interactions in the industrial education environment (Lutz, 1982, pp. 40-41). When a special education student comes into an industrial arts program, they often do not receive individualized supervision which they may require. These students maybe generally highly motivated in the area of industrial arts, and the students may receive some vocational training that may be very helpful to them someday.

Industrial arts teachers should take a more creative approach to designing their curricula with the intent of allowing individual supervision for the student who is mildly handicapped (Gillette & Reed, 1979, pp. 48). Industrial arts instructors can help themselves with this problem by seeking out the special education and resource teachers from their school district. Tutoring or extra assistance in the laboratory during the students initial entry into the industrial arts class can help. Pairing of non-handicapped with handicapped students can be good because he or she may act as a role model and explain those things that may not warrant use of the teacher's time. The "buddy system" has been effective, not only for the retarded student, but also to develop in the normal student an understanding of the handicapped. Providing the special education teachers with copies of printed instructional materials including books and mathematic

related problems can further promote great success (Bender, 1978, pp. 63-65).

Wasburn (1979) states because of constant failure that many special education students have little or no self-esteem. Often they will show their feelings or dissatisfaction in a negative way by lies, arguments, loud talk, swearing, excuses, or tardiness. Learning disabled persons are easily led by negative actions that are very difficult to change into positive directions, (pp. 11-13). Several reasons can be found to offer industrial arts classes to sometimes frustrated special education students. The critical reasons are listed:

1. Industrial arts deals with processes central to living conditions, making and breaking, creating and destroying, thinking and using the results of thought, playing and working, and dealing with success and failure.
2. Industrial arts enables students to gain a sense of self by learning historical background of how we have progressed through a technological age. An understanding of students roles as future employees are important.
3. Industrial arts can make life richer and more expansive, the special education student needs to understand communications and the future.

4. Industrial arts education can provide opportunities to deal with basic statements like: (a) who am I, (b) what does my existence mean, (c) what I can do and be (d) how I shall travel throughout life, (d) with whom I shall travel, (e) what spaces and places I should occupy, (f) how I shall make this space in which I find myself an exciting and useful one in which to be.

Any curriculum, if it is to have worth and integrity, must be based on understanding about the person and persons around him/her (Berman, 1981, pp 4-7). In a world that is growing smaller by the day, children cannot be allowed to grow up without touching the lives of others unlike themselves.

Literate youths who have the opportunity to teach skills to illiterate persons, older or younger, learn to be contributing members of society. (Berman 1981, pp. 4-7) Handicapped people should be an integral part of the American society. If an opportunity is not provided in the formative years for children to learn the strengths and weaknesses of each other in the controlled environment of the school, stereotypes will be perpetuated that encourage keeping handicapped people in sheltered environments as adults. By means of integrating will help regular students learn that handicapped children are human, that their

handicap is not contagious, and that they have strengths all their own. It will encourage informal, unplanned daily activities and chance acquaintances that make these children not only aware of each other, but friends (Bartusek, (1984).

Industrial arts objectives for mainstreaming are not to dump special education students into classes but to place them in regular classes whenever possible, along with support services that are necessary to help them succeed. Handicapped and disadvantaged students have special needs, but as human beings they have the same needs and desires as anyone else. These are to develop a salable skill, enter the labor force, and become contributing members of society (Scott & Sarkees, 1982, p. 1).

Role of Administration and the Special Education Teacher

In order for the mildly handicapped student to succeed in an industrial arts program, a combined effort has to be made with the experience and knowledge of special education teachers, basic skills teachers, and administrators. It is through coordination and cooperation with educators that mildly handicapped students will experience success in regular programs. Secondary administrators and special education teachers need to address this problem and learn how to work together effectively to meet the challenge of

educating these learners (Scott & Sarkees, 1985, pp. 13-14).

The administrator's role in planning, implementing, and evaluating industrial arts programs are very important. If programs are vocational in nature, the administrators can provide the following services:

1. Support services necessary to aid special needs learners.
2. Extended time for teaching personnel, inservice/staff development activities to develop cooperating skills between the industrial arts teacher and special education teacher.
3. funds to purchase new machinery, modification of classrooms, and laboratory facilities.

In order for special needs learners to achieve success, it's important that administrators: (a) demonstrate belief in industrial arts programs, (b) be informed about the requirements mandated by federal law, (c) annually survey the school district to locate and identify special needs students, (d) supply a support system for teachers in need. (Scott & Sarkees, 1985, pp. 208-209). The special education teacher may not have the industrial arts experience needed to assist students, but can provide: (a) prevocational and career development experience for special education students, (b) ensure that appropriate goals and objectives are written into the

(IEP), (c) arrange for vocational assessment of student, (d) help industrial arts educators implement (IEP) goals and objectives, (e) provide handicapped students with opportunities to learn appropriate work attitudes and behaviors, (f) provide data on academics, personnel and social skills, and reinforce skills learned by student, (g) suggest adaptation in curriculum, instruction, materials and equipment, (h) reinforce mathematics reading, and communication skills (Scott & Sarkees, 1985, PP.208-209).

One of the best resources for the industrial arts teacher is the special education teacher because he/she can reinforce whatever is being taught. Communication between industrial arts teachers and special education teachers should be helpful because knowing what is being taught will only help special education teachers know that the (IEP) program for the student is being met (Johnson, 1986, pp. 11-13).

Both the administrator and special education teacher are responsible for giving a rationale for why special education students are placed in industrial arts programs. Some industrial arts teachers believe their classes are dumping grounds for slower learning students. Industrial arts teachers need to be assured that students may have a strong interest in their area of teaching. Knowing why the program was selected will remove the teacher's lingering fear, that administrators and special education teachers

are putting students into industrial arts classes because there is no place to put him/her.

This will make the special education teacher more responsible for his/her decisions. Special education teachers and administrators have responsibilities that, when carried out, can help the mildly handicapped student reach his/her goals and objectives. It's this cooperative effort among teachers and administrators that make integrating students into industrial arts programs a valuable part of their total education.

Industrial Arts Teacher Preparation

To understand the problems and meet the needs of the special education student, the industrial arts teacher will need specialized training. It may also be desirable to develop a program with special objectives designed specifically for the special education student (Vigglan, 1965, p. 21).

Ringlaben and Price (1981) conducted a survey of regular teachers' perceptions of mainstreaming and found a large percentage of teachers believed they knew very little about exceptional children and the responsibilities involved with mainstreaming. Fifty-five percent indicated that they had received no inservice training about exceptional educational needs. Eighty six percent of the sample indicated they had not taken course work in the area of mainstreaming.

Preparation toward teaching special education students is essential. The educating of teachers help make writing curriculums an easier task. Cole (1978) explains the situation as follows:

Without more information about handicapping conditions, the opportunity to overcome ignorance and fears commonly associated with these conditions, and specific instructions in constructing methods by which to accommodate the instructional needs of the handicapped persons, teachers can hardly be expected to be willing or able to engage in the practice of mainstreaming in their own classrooms (p. 3).

Teachers should be aware of the educational lag that many impaired individuals bring to the classroom. There will be certain experiences and terms with which they might assume most children are familiar that maybe totally new to the handicapped. Many teachers would experience the same frustration if they were placed in a medical school lecture without any prior knowledge in the discipline. One of the most effective activities the teacher can do to prepare for a handicapped student is to spend a number of hours in the laboratory by simulating, as closely as possible, the difficulty the student might face. If acceptance of the handicapped individual by other students in the class is a perceived difficulty, a sensitivity session might change attitudes in the group. A sensitivity session simply puts

teachers and non-handicapped students in roles of the handicapped to point out to them what it is like to have this handicap (Wilson, 1979, pp. 38-39).

Inservice training is of importance to meet the needs of special needs students. Inservice workshops can concentrate on the skills, competencies, and attitudes needed by teachers to promote and facilitate the teaching of the special needs population. In service training can also provide for an exchange and integration of ideas, attitudes, and philosophies among special needs teachers, classroom teachers, counselors, administrators, and parents (Lee, 1981, pp. 6-7).

Safety and teaching methodologies are of major concern for industrial arts instructors. Laboratory teachers not trained to work with special needs students also are apprehensive about having them in a place where contact with potentially dangerous machines and tools is unavoidable (Jensen & Schaefer, 1978, pp. 35-36). Some of the concerns of industrial arts teachers are, "How can a student with a mental handicap function safely and productively in a lab class? and "What safety precautions need to be considered when special needs students are in a welding or machine shop class?" Modifications may be necessary and appropriate for the special student, but there appears to be little evidence to support the often held notion that special needs learners are less safe or

more accident prone than other learners. Handicapped students are no different from non-handicapped students in regard to carelessness, confusion, and boredom that sometimes leads to unsafe conditions (Lutz & Pearson, 1978, pp. 20).

Learning and instructional theories for the handicapped student are essentially the same as for the non-handicapped student except for maybe a difference in the length of time it takes a student to acquire a given competency or learn the application of various instructional and manipulative hardware. There are three basic teaching methodologies that can be effectively used by industrial arts instructors to help teach the handicapped student: (a) matching, where students develop skills to see how objects are the same or different, (b) symbolizing, where students will be able to associate the stimuli or symbol with the steps in the operation, and (c) sequencing, where teachers make an effort of ordering instructional or teaching content and activities for presentation to and participation by students. The use of multi-dimensional methods of teaching becomes imperative when attempts are made to match teaching styles to individual learning styles. Teachers, therefore, are required to increase their instructional repertoire when working with the handicapped (Bies, 1979, pp. 19-20).

In a study concerning inservice and pre-service training by higher institutions, a study panel made a recommendation. They recommended that departments work with classroom teachers to develop pre-service and inservice teacher education courses that have practical value and relevance to school and classroom realities. The study panel said that these programs should shape attitudes and sensitivities that will enable teachers to overcome prejudices and fears and relate more openly and effectively with handicapped persons (Jensen & Schaefer, 1978, pp. 35-36).

Chapter III

RESEARCH METHODOLOGY

Integrating special education students into regular secondary high school classes can be challenging for both mildly handicapped students and industrial arts teachers. Preparation and methods of teaching these students in secondary industrial arts programs were investigated through the use of books, magazines and other literature to obtain a basic knowledge in the area. A questionnaire was developed to help identify some areas of strengths and weaknesses of industrial arts teachers dealing with the mildly handicapped students. This document was necessary to understand how other industrial arts instructors were teaching the mildly handicapped students. Industrial arts instructors throughout northeastern Iowa received the questionnaire, filled it out, and returned it to the researcher.

Written Questionnaire Construction

To acquire knowledge as how other industrial arts instructors in northeastern Iowa integrate mildly handicapped students, a questionnaire was developed. Through reading related research and interviewing special education personnel, the questionnaire was based on accommodating special education students in industrial

arts classes. Questions were selected based on some conversations with the industrial arts instructor and the special education teacher in the Guttenberg school system. The reviewing of the questionnaire was done with Dr. Ervin A. Dennis, Graduate Advisor, and Dr. Charles D. Johnson, Industrial Technology Professor, University of Northern Iowa. Some of the questions were revised based on their knowledge of special education programs throughout the State of Iowa. The finalization of the questionnaire was accepted by both parties as feasible for study. There were a total of thirty-three questions in the survey that was used to collect valuable data (Appendix A).

Personnel Interview

The researcher realized the importance of personally interviewing high school administrators of current special education programs. An interview was conducted with Rich Larimer, Special Education Consultant at the Area I Agency, Elkader, Iowa, to understand the different types of special education programs that are offered in secondary high schools in the state of Iowa. It was with his help that seven questions were developed for an oral questionnaire. The superintendent and principal of the Guttenberg High School were interviewed to help formulate some background on various special education programs provided by secondary high schools in the state of Iowa. Questions were designed to help establish which programs provided the best possible

education for handicapped students. It was with help from the previously mentioned people that questions were written based on their knowledge and experience of programs current in local high school districts. Dr. Ervin A. Dennis and Dr. Charles D. Johnson reviewed the questionnaire, made revisions, and accepted the oral interview questions. The final copy was drafted and ready for use (Appendix B).

Selection of Questionnaire Participants

The selection of a population to survey was based on schools of comparable size to Guttenberg High School. A list of industrial arts teachers was obtained from Rich Larimer. From a list of ninety-nine industrial arts teachers in Area I, thirty-three teachers were randomly selected (Appendix C). The selection of participants was established by looking at size of school and how many industrial arts instructors were in the district. Guttenberg High School employs two instructors, and the selection process intended to mirror this program. Oral questionnaire participants were selected on the types of programs that are offered in their respective schools. Three area superintendents who had different types of programs were selected: Jim Nelson, Garnavillo; Bob Buckner, Elkader; and Dick Backman, Edgewood-Colesburg Community Schools. These programs included a) self-contained special class with little integration, b)

special class with integration, and c) resource teaching program, available to their students.

Data Collection

There were thirty-three questionnaires sent March 2, 1987 to area industrial arts teachers. At the end of a fourteen-day waiting period, a total of twenty-four questionnaires were returned. A reminder in the form of a postcard was sent March 16, 1987 to the remaining nine industrial arts instructors who had not yet responded (Appendix D). This first follow-up resulted in the return of an additional five questionnaires. On April 7, 1987, a second follow-up by telephone resulted in the return of all remaining questionnaires. Eight of the questionnaires received were eliminated since those instructors were not involved in teaching the mildly handicapped students. Their students were either taught separately in the school system or transported to a nearby neighboring school district. A total of twenty-five questionnaires, or 76% of the original 33, provided usable data for the completion of the study.

The researcher interviewed, in person, the three superintendents about their programs to get their opinions concerning whether they were serving the needs of special education students in their districts. The data from both industrial arts teachers and superintendents was the

foundation for making conclusions and recommendations for future study.

Summary

The method of study for this research paper was important in that the researcher questioned and interviewed industrial arts teachers who share a common interest in working with the mildly handicapped students. It was hoped that other industrial arts teachers would be willing to be part of the study. It became evident that other industrial arts teachers do share the same problems of integrating mildly handicapped students in their existing programs. The results of the questionnaire and personnel survey will answer many questions that face industrial arts teachers who teach the mildly handicapped students in their programs.

Chapter IV

ANALYSIS OF DATA

This chapter relates to the data obtained from questionnaires concerning the status of industrial arts programs for special education students that were sent to thirty-three industrial arts teachers in northeastern Iowa. A total of thirty-three, or 100%, of the questionnaires were returned. Eight questionnaires were not used because in these districts special education students did not attend school there. Data for this study were extracted from the remaining twenty-five questionnaires. One of the twenty-five respondents indicated that special education students did attend the school but did not receive instruction in industrial arts. The other twenty-four respondents, 96% of the total, indicated that special education students attended the school in which they were teaching and did receive instruction in industrial arts.

Responsibility for Teaching Industrial Arts to Special Education Students

Twenty-two of the twenty-four instructors believe that if special education students are to receive industrial arts instruction, the industrial arts teacher should be responsible for providing this instruction because it benefits the special education students being with non-handicapped students. Two of the twenty-five instructors stated that the industrial arts teacher should

be responsible; however, they indicate that there should be some special preparation with the help of the special education teacher in the areas of physical and mental limitations, planning programs, vocational guidance, and methods of teaching the mildly handicapped students. One instructor believed he should be responsible for industrial arts instruction with the help of an aide. Two instructors gave no response. It is apparent through this study that if special education students are integrated into industrial arts classes, help is needed from other sources.

Accommodations for Special Education Students in Industrial Arts Programs

Table 1 reveals that twenty-four of the twenty-five instructors indicate they are teaching industrial arts to special education students in their classes. One of the twenty-five instructors reported that these special education students received no instruction in industrial arts.

Four of the twenty-four teachers reported they teach in schools that do provide instruction in industrial arts for special education students; however, they are provided assistance from other resource people. Two of the four instructors reported they are assisted by the special education teachers, while the other two have help from aides. The responses in the questionnaire clearly show

that in no school system does the special education instructor teach industrial arts as a separate class.

Table 1

NUMBER AND PERCENTAGE OF RESPONDENTS INDICATING
ACCOMMODATIONS MADE FOR SPECIAL EDUCATION
STUDENTS IN INDUSTRIAL ARTS PROGRAMS

Accommodations	No. of Teachers	Per Cent
Respondent taught industrial arts to special education students	20	83
Industrial arts instruction taught with the aid of special education instructor or aide....	3	13
No industrial arts for special education students.....	1	4
	24	100%

Classification of Special Education Students

Of the twenty-five instructors who reported that special education students attended the school in which they taught, all indicated that the school identified these students as special education students. The special education students attended various classes outside of their special education classroom.

Placement of Special Education Students
in Industrial Arts Classes

The industrial arts instructors reported that they received information of the placement of special education students in their classes from several sources. Table 2 shows the most frequent source of this information is the special education teacher with twelve of the twenty-four instructors responding in this way. Eight instructors indicate the guidance counselor provide this information. Also listed as sources are administrators and fellow teachers by six and one respondents respectively. Some of the instructors list more than one source of this information. Only four instructors report they are seldom made aware of the presence of these students in their classes.

TABLE 2

FREQUENCY OF RESPONSES AND SOURCES FROM
WHOM INDUSTRIAL ARTS TEACHERS WERE
INFORMED OF SPECIAL EDUCATION
STUDENTS IN THEIR CLASSES

Source of Information	No. of Teachers
Special Education Teacher	12
Guidance Counselor	8
Administrator	6
Not Informed	4
Fellow Teacher	1

Scheduling of Special Education Students

In the scheduling of special education students for industrial arts, twenty-one of the twenty-four teachers indicated these students are placed in regular industrial arts classes. Two of the twenty-four teachers reported in their school that special education students are taught industrial arts as a separate group.

Thirty-one per cent of these twenty-four industrial arts teachers indicate they prefer to teach special education students as a separate group. Fifty-seven per cent believe strongly that special education students should be in regular classrooms with non-handicapped students. Three respondents had no opinion about where students are placed.

Problems Encountered in Teaching Special Education Students

Twenty-one of the twenty-four, or 87% of the instructors, indicated they experience one or more problems while teaching special education students. Table 3 shows the most frequently occurring problem to be motivating special education students as indicated by eleven of the instructors. Project selection and teaching methods are listed as problem areas by ten and eight instructors respectively. Seven instructors indicate having problems communicating with special education students. Discipline and guidance of special education students in their classes

is a source of problems by six instructors. Four of the twenty-four instructors gave no response to this part of the questionnaire. This might indicate they have not experienced serious problems in teaching these students.

Table 3

PROBLEMS ENCOUNTERED IN TEACHING
SPECIAL EDUCATION STUDENTS

Problem Area	No. of Teachers
Motivation	11
Project and Activity Selection	10
Teaching Methods	8
Communications	7
Discipline	6
Guidance	6

Services of a Special Education Teacher

Twenty-four of the instructors reported their school employed a qualified special education teacher to provide for a major portion of the education of these special education students. Schools employing a special education teacher did not fail to classify these students as special education students.

Specialized Training for Industrial Arts Teachers

A need for industrial arts teachers to have some specific training in the field of special education was expressed by twenty-two, or ninety-one per cent, of the twenty-four responding instructors. This high percentage may be the result based on the assumption that although all industrial arts teachers are not teaching special education students, they may be called on to do so at some time during their teaching career.

Instructors Teaching Industrial Arts to Special Education Students

This question was concerned with the data provided by the twenty-four industrial arts teachers who are teaching special education students in their classes. This group represented ninety-six per cent of the twenty-five instructors reporting that special education students attend the school in which they teach.

Fifteen of the industrial arts instructors, sixty per cent, believe that special education students blend in well with regular students. With support from the special education teacher, the class can be enjoyable for both instructor and student. Seven instructors believed that socially, both regular and special education students benefit. Instructors in seven schools are against placing them in regular classes because of the extra time,

patience, and training involved. Sometimes it is believed that special treatment is given to special education students often not given to regular students. Two instructors did not respond.

The ages of mildly handicapped students range from twelve to nineteen years. The youngest students in any industrial arts classes were twelve years old and participate in the regular seventh grade industrial arts classes. The special education students are placed with students of approximately their same age. When the mildly handicapped students are placed in regular classes, fourteen instructors favor pairing them with the regular students while eight did not. Two respondents failed to give any answer. The maximum number of special education students the twenty-four instructors believed they could effectively teach in a regular class range from one to three students. Fourteen instructors state two to three students is best for them. Seven respondents only handle a maximum of two students. One instructor believes he can successfully teach more than four with the help of an aide while another said it depended on the size of the regular class. One instructor did not respond to the question.

Teaching the mildly handicapped can have some rewarding benefits to the instructors as well as the students. Sixty-seven per cent, or sixteen instructors, realize students benefit physically as well as mentally.

Students benefited in areas of word usage, acquired needed skills and pride in work. Social skills are listed as a high priority among seven instructors. Again one instructor did not respond.

Teacher Preparation

Three of the twenty-four industrial arts teachers reported they have taken five different courses that can be considered part of a special education curriculum. Formal counseling and professional advice may have been of benefit to teachers lacking preparation in the area of special education; however seventeen of the twenty-four instructors reported they have at no time received such counseling and advice. The seven instructors who have received some counseling and advice gave several sources of this counseling and advice. The most frequent source is the school administrator as indicated by five teachers. (Table 4) Four teachers stated the special education teacher was very helpful in giving advice. A fellow teacher was indicated by two teachers, and one teacher listed the guidance counselor. A.E.A. workshops were also mentioned as helpful in providing counseling and advice.

Table 4
 SOURCES OF COUNSELING AND ADVICE RELATIVE
 TO THE TEACHING OF SPECIAL
 EDUCATION STUDENTS

Sources	No. of Teachers
Administrator	5
Special Education Teacher	4
Fellow Teacher	2
Guidance Counselor	1
Area Education Association	1

Special Knowledge the Industrial
 Arts Teacher Should Possess

The twenty-four teachers were asked to indicate some specific knowledge they believe an industrial arts teacher should possess to effectively teach special education students. Most instructors listed more than one choice and each choice was selected by more than 50 per cent of the respondents. As shown in Table 5, the most frequently selected area of knowledge, as indicated by twenty-two instructors, is concerned with the physical and mental limitations of the special education students. Other areas selected were methods of teaching special education students by eighteen instructors and curriculum planning

for special education students by seventeen instructors. Both objectives of the special education programs and principles of vocational guidance were areas of importance in working with the special education students in public high schools.

TABLE 5

SPECIAL KNOWLEDGE AN INDUSTRIAL ARTS TEACHER
SHOULD POSSESS TO EFFECTIVELY TEACH
SPECIAL EDUCATION STUDENTS

Knowledge	No. of Teachers
Physical and mental limitations of special education students	22
Methods of teaching special education students	18
How to plan programs for special education students	17
The objectives of the special education programs	12
Principles of vocational guidance for special education students	12

Superintendent's Role in Providing Special
Education Programs for the Mildly Handicapped

The reseacher visited three high schools that had different types of special education programs and received valuable information in relation to why they have certain

types of programs. In talking with Edge-Wood Colesburg, Elkader and Garnavillo school personnel, it was evident they all believe they are doing an adequate job in educating the mildly handicapped. A self-contained special education class with little integration, a special class with integration, and resource teaching programs are all available to students who need help. The most popular models used were with mainstreaming students into regular classrooms if students can handle it. If students can not handle the classroom, they can go to the resource room and be helped.

Special education training for administrators is virtually non-existent with much needed help coming from inservice through Area Education Agency. Special education consultants are available if needed to help set up various level programs. All administrators responded they are providing important education for their students, but some reservations were indicated from two superintendents; they believed that in teaching the special education students, instructors are always looking for better means of teaching students who have such a wide range of abilities. Having special education students in the same building as regular students is important in building a relationship between the two different abilities.

The superintendents were asked if industrial arts contributes to the education of special education students. The response was overwhelming that special education students gain socially by being with regular students in the same setting. Working with others in groups is important to these students because they can learn life surviving skills. The three individuals response indicates that industrial arts for the special education student is a viable learning experience.

Chapter V

SUMMARY, CONCLUSIONS, AND RECOMMENDATIONS

The investigation of integrating mildly handicapped students into industrial arts classes started with a historical perspective of the handicapped child and the educational opportunities that were provided for such children. Such an investigation was deemed necessary in order to fully understand the implications and steps which led to the passage of Public law 94-142 . It was ascertained that mildly handicapped students were present in the public schools; and it was further noted that many of these students, referred to as special education students, were receiving instruction in industrial arts.

Summary

A questionnaire was developed and sent to thirty-three randomly-selected industrial arts instructors in Northeastern Iowa to ascertain the preparation of the instructors to teach special education students and to determine some of the methods of accommodating students in the industrial arts programs. Of the thirty- three returns, twenty-five provided useful data for this study.

The findings of the study revealed that twenty-five instructors reported the presence of special education students in the school in which they were teaching.

Twenty-four, or 96% of the respondents indicated that they were teaching industrial arts to these students.

Eighty-three per cent of the twenty-four industrial arts instructors teaching the mildly handicapped students reported that they were made aware of the presence of these students in their classes from various sources within the school.

Of the twenty-four instructors teaching industrial arts to special education students, 88% indicated that these students were scheduled in regular industrial arts classes. A majority of the instructors believe that if special education students were to be included in regular classes, each should have no more than two to three. Thirty-one per cent of the twenty-four instructors indicated a preference for teaching special education students in separate groups.

The findings further indicated that although 13% of the instructors had received some formal preparation in the area of special education, majority of instructors had non. Only 17% of the twenty-four instructors teaching special education students reported receiving formal counseling or professional advice relative to teaching special education students. A need for industrial arts instructors to have specialized training in the area of special education was expressed by all of the twenty-four instructors participating in this study.

A majority of the industrial arts teachers teaching special education students (88%), indicated they did teach industrial arts to the mildly handicapped and had favorable results in providing them with a good quality education. Discipline was not a big problem except in a few responses some instructors mentioned attention span and having problems with the ability to retain little information.

Conclusions

The information collected from industrial arts instructors and administrators was enlightening and interesting. From the data obtained in this study it was concluded that:

1. Special education students are present in over 96% of industrial arts classes and these students do create some concerns for industrial arts instructors.
2. Industrial arts teachers, in general, are inadequately prepared to teach special education students.
3. Many of the problems encountered in teaching special education students are the result of inadequate preparation of the instructor.
4. Placement of special education students in regular industrial arts classes sometimes does not provide the most effective learning situation for these students.

5. In general, special education students do receive adequate education being with non-handicapped students.

Recommendations

In providing the proper education for the mildly handicapped student, instructors will have to be adequately prepared to meet the responsibilities of helping the slower learning student develop into a productive citizen of our community. Based on the review of literature and the finding of this study, it is recommended that:

1. Special education students be placed in regular industrial arts classes but be provided with assistance from special education teacher.
2. Special education students should participate in regular industrial arts classes in the same activities as the regular students.
3. A maximum of three special education students should be placed in a regular industrial arts class.
4. Special education students should be evaluated on the basis of their individual capabilities not comparison with other students.
5. Institutions training technology education teachers include information relative to teaching special education students in the curriculum.

6. School officials and special education personnel provide assistance to industrial arts instructors teaching special education students.

APPENDIX A

Letter to Industrial Arts Teachers

March 2, 1987

Dear Industrial Arts Teacher,

Since the passing of Public Law 94 - 142 schools have been faced with the challenge of teaching special needs students. Many schools employ special teachers to teach these students. However, instruction in the area of industrial arts is usually the responsibility of the industrial arts teacher. It is possible that the inclusion of special education students in industrial arts courses has caused some problems for the industrial arts teacher.

I am conducting a survey, in cooperation with the Department of Industrial Technology at University of Northern Iowa, Cedar Falls, to ascertain problems and specific methods incorporated to accommodate these students. Another question I wish to answer is the preparation industrial arts teachers are receiving in order to help them in classroom instruction.

To make this study meaningful, information from teachers in the field is necessary. Please take a few minutes of your time to complete the enclosed questionnaire and return it by April 20 in the enclosed, self-addressed and stamped envelope. The information you provide will be kept confidential and will be sincerely appreciated. Your name or the name of your school will not be used in any way in the tabulated results.

The results of this study will be available. If you would like to receive a copy, please complete the address form provided at the end of the questionnaire.

Thanks you for your time and cooperation.

Sincerely,

Bill Leonhart

Approved by:

Dr. Ervin A. Dennis, Professor and Advisor
Department of Industrial Technology

APPENDIX B

Instructors Questionnaire

Directions: Please respond by answering or by checking the appropriate responses. Where numerical responses are requested, an estimate of that number is all that is required.

1. How many years have you been teaching industrial arts?

(please circle) 1 ,2, 3, 4, 5, or more.

2. What per cent of your teaching day is devoted to teaching industrial arts?

Less than 50% _____ More than 50% _____

3. Do mentally retarded, brain damaged, and slow learning students having IQ's between 50 and 85 attend the school in which you teach?

Yes _____ No _____

If your answer to question 3 was "no", you need not proceed further. Please return the entire questionnaire in the enclosed return envelope. Thank you for your time and cooperation.

If your answer to question 3 was "yes", please answer the following questions.

4. Does the school in which you teach classify these students as special education students?

Yes _____ No _____

5. Does the school in which you teach employ a special education teacher?

Yes _____ No _____

6. Do special education students attending the school in which you teach receive instruction in industrial arts?

Yes _____

No _____

If your answer to question 6 was yes,

Who instructs these students in industrial arts?

a. Industrial arts teacher _____

b. Special education teacher _____

c. Other _____
please specify _____

7. Do you believe that industrial arts teachers should receive some training in the area of special education.

Yes _____

No _____

8. Do you teach industrial arts to special education students?

Yes _____

No _____

If your answer to question 8 was "no", you need not proceed further. Please return the entire questionnaire in the enclosed return envelope. Thanks for your time and cooperation.

If your answer to question 8 was "yes", please answer the following questions.

9. What is the age of the special education students you work with?

10. How many special education students are involved in industrial arts?

11. In what areas of industrial arts are the special education students placed?
12. Are the special education students paired with other I. A. students?
13. What tools do special education students use? Power equipment? Any special equipment just for them? Special safety equipment?
14. What projects do the special education students make? Do you use kits? Mass production? Individual projects? Group projects?
15. What visual aids do you use? Textbooks?
16. What problems arise in the classroom and laboratories? Attention span of special education students? Discipline?
17. Do you need to treat the special education students in a special way?
18. Do you allow time for experiments and investigation?

e. Methods of teaching special education students. _____

f. Other _____
Please specify

29. Please indicate areas in which you have encountered problems when teaching special education students.

a. Teaching methods _____

b. Project and activity selection _____

c. Discipline _____

d. Motivation _____

e. Guidance _____

f. Communicating _____

g. Other (please specify) _____

30. If you have had the opportunity of working with special education students, have there been some experiences that have been rewarding to you and to your students?
31. Please use this space for any comments you may have pertaining to this study.
32. What courses do you teach during the school day?
33. If you would like a copy of the study, please put your name at the bottom of this page and I will get the results to you as soon as study is completed.

APPENDIX C

Administrators Questionnaire

Name: _____

School: _____

Type of program _____

1. What kind of program do you provide for special education students in your district?

2. Why have you set up this type of program?

3. Have you had any specialized training dealing with programs in special education?

4. What do you think is the best method for educating the mildly handicapped student?

5. Do you think the special education students in your school district are properly educated?

6. Have you any reservations of how you educate your special education students or would you prefer a change?

7. How do you feel industrial arts contributes to the education of special education students?

APPENDIX D

Mailing list of Instructors for Survey

Bill Blagsvedt Waukon H.S. Waukon, Iowa 52172	Gary Noack Guttenberg H.S. Guttenberg, Iowa 52052	Tom Paulin Central H.S. Elkader, Iowa 52043
James Schreffler Decorah H.S. School Decora, Iowa 52101	Dan Tuirstra Kee High School Lansing, Iowa 52151	Don Reece Ed-Co High Edgewood, Iowa 52042
Dennis Steele Fredericksburg H.S. Fredericksburg, Iowa 50630	Art Moelering Jr. Garnavillo H.S. Garnavillo, Iowa 52049	Gilbert Burlew Crestwood H.S. Cresco, Iowa 52136
Kevin Wedeking Crestwood H.S. Cresco, Iowa 52136	Oswald Goettler M-F-L H.S. Monona, Iowa 52159	Ronald LaFrentz M-F-L H.S. Monona, Iowa 52159
Glen Thompson Maquoketa Valley Delhi, Iowa 52223	Warren Winborn Maquoketa Valley Delhi, Iowa 52223	Jack Slyfield Mar-Mac H.S. McGregor, Iowa 52157
William Ipsen New Hampton H.S. New Hampton, Iowa 50659	Arlin Severson New Hampton H.S. New Hampton, Iowa 50659	Phil Steger North High School West Union, Iowa 52175

Richard Dorn
Oelwein H.S.
Oelwein, Iowa
5 50662

Thomas Farmer
Oelwein H.S.
Oelwein, Iowa
50662

John Hyman
Postville H.S.
Postville, Iowa
52162

David Guy
Riceville H.S.
Riceville, Iowa
50466

Tom Flannery
South Winn. H.S.
Calmar, Iowa
52132

Roger Reed
Starmont H.S.
Strawberry Point
52076

Leon Hansen
Valley H.S.
Elgin, Iowa
52141

Richard Schnorenberg
Turkey Valley H.S.
Jackson Junction
Route 2

Wayne Dettmer
West Central H.S.
Maynard, Iowa
50655

Ron Struble
West Delaware H.S.
Manchester, Iowa
52057

Larry McCready
Epworth H.S.
Epworth, Iowa
52045

John Nenning
Beckman H.S.
Dyersville, Iowa
52040

Allan Main
Cascade H.S.
Cascade, Iowa
52033

Douglas Rickels
Cascade H.S.
Cascade, Iowa
52033

David Corbin
Epworth H.S.
Epworth, Iowa
Route 9

APPENDIX E

Follow-up Post Card

March 16, 1987

Dear Fellow Industrial Arts Teacher:

On March 2, 1987 I sent you a questionnaire pertaining to a study of special education students in Industrial Arts. If you have not already done so, perhaps you could take a few minutes to complete the questionnaire and return it to me. Your cooperation will help to make this study more meaningful. If you have already returned the questionnaire, kindly disregard this notice.

Sincerely,

Bill Leonhart
Guttenberg, Iowa

REFERENCES

- Bartusek, L. (1985 March). Special Students Deserve Option of Regular School Environment. Iowa Department of Public Instruction Dispatch. 14 (6), pp. 20-21.
- Bates, P. Mainstreaming: Problems, Potentials and Perspectives. Michigan University, Ann Arbor School of Education, 1977. (Eric Document No. ED 163671)
- Baum, R. B. & Frazeta, R.F. (1979) Educating the Exceptional Children in the Regular Classroom. Journal of Teacher Education, 30 (6), pp. 20-21.
- Bender, M. (1978, April). A Least Restrictive Place for EMR's. School Shop, pp. 63-65.
- Berman, L.M. (1981, November). Mainstreaming Industrial Arts Education. Man Society Technology pp. 4-7.
- Bies, J.D. (1979, May). Strategies for Special Needs Teaching. School Shop pp. 19-20.
- Birkland, H., & Cochran, W.A. (1968, March-April). Why Shouldn't They Learn? Journal of Industrial Arts Education, XXVII, p. 21.
- Brown, L., Ford, A., Nisbet, J., Sweet, M., Donnellan, A., and Gruenewald L., (1983) Opportunities Available When Severely Handicapped Students Attend Chronological Age Appropriate Regular Schools. The Journal of the Association for the Severely Handicapped, 8, pp. 16-24.
- Corrigan, D. C. (1978) Political and Moral Contexts that Produced P. L. 94-142. Journal of Teacher Education, 29 (6) pp. 10-14.
- Devilbiss, J. M. (1964, September- October), The Mentally Retarded: Old Problem or New Challenge?" The Journal of Industrial Arts Education. XXIV, pp. 50-57.

- Dybwad, G. (1980) Avoiding Misconceptions of Mainstreaming, The Least Restrictive Environment and Normalization. Exceptional Children, 1980, 47 (2), pp. 85-87.
- Education Policies Commission. (1938) The Purpose of Education in America. Washington, National Education Association.
- Gillette, G.A. & Reed, C.H. (1975, February). Special Education in the Woodshop: A Team Teaching Approach. School Shop p. 48.
- Hutt, M. L. & Gibby, R. G. (1979) The Mentally Retarded Child. Boston: Allyn and Bacon, Inc.
- Jensen, R.N. & Schaefer, C.J. (1978, September). Making Inservice for Special Needs Work for Vo-Ed Teachers. School Shop pp. 35-36.
- Johnson, C. D. (1986, May/June) Practical Answers to Concerns About Teaching the Handicapped. The Technology Teacher. pp. 11-13.
- Kennedy, E. (1978) P.L. 94-142 Poses Lofty Challenge. Journal of Teacher Education, 29 (6), pp. 7.
- Koble, R. L. (1978, March) Educating the Handicapped in Industrial Arts Education. Man Society Technology, pp. 10-1----
- Kok, M.R. & Parrish, L.H. (1980, May). How the IEP Helps the Shop Teacher. School Shop pp. 19-21
- Lee, H.D. (1981, December). The Use of In-Service Activities to Introduce Industrial Arts Teachers to Special-needs Students. Man Society Technology pp. 6-7
- Lutz, R.J. (1982, April) Special Needs: Defining the Term. School Shop pp. 40-41

- Lutz, R.J. & Hasbargen, A. (1979, December). An Industrial Educator and a Special Educator Discuss it. School Shop pp. 19-23
- Lutz, R.J. & Pearson, U.L. (1978, February). Teaching Safety to the Special Needs Learner. Industrial Education pp. 20-26
- Ringlaben, B.P. & Price, J. R. (1981) Regular Classroom Teacher's Perceptions of Mainstreaming Effects. Exceptional Children pp. 302-304
- Scott, J. L. & Sarkees, M. D. (1982) Preparing T & I Teachers: Vocational Special Needs. Alsip, Illinois: American Technical Publishers, Inc.
- Scott, J. L. & Sarkees, M. D. (1985) Vocational Special Needs. Alsip, Illinois: America Technical Publishers, Inc..
- Sharkey, F. Jr. (1964, May). Industrial Education for the Mentally Retarded. Industrial Arts and Vocational Education, pp. 22-23
- Smith, R. M. & Tisdall, W. J. (1965, April) Working with the Retarded Pupil in Industrial and Vocational Education". School Shop, pp. 58-59.
- Stevenson, G. S. & Milt, H. (1975) Ten Tips to Reduce Teacher Tension. Today's Education. 64 pp. 52-55
- Vigglani, J. C. (1965, March) Industrial Arts for Exceptional Children. School Shop p. 21
- Washburn, N.Y. (1979) Vocational Mainstreaming. California: Academic Therapy Publications.
- Wilson, H.H. (1979, October). A Mainstreaming "Sensitivity Session". School Shop pp. 38-39.