Assessment of Industrial Vocational Education Needs in Manitoba's Secondary Schools

and

Comparative Analysis With Responses to Similar Needs in West Germany and the United States of America

DISSERTATION

Presented in partial fulfillment of the requirements for the Degree of Doctor of Philosophy in the Faculty of Graduate Studies.

by

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ASSESSMENT OF INDUSTRIAL VOCATIONAL EDUCATION NEEDS IN MANITOBA'S SECONDARY SCHOOLS AND COMPARATIVE ANALYSIS WITH RESPONSES TO SIMILAR NEEDS IN WEST GERMANY AND THE UNITED STATES OF AMERICA

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ABSTRACT

The purpose of this study was to establish a data base for industrial vocational education, which will give additional direction to research planning and resource allocation in the Province of Manitoba. The study sought to accomplish this goal through identifying current priorities for vocational industrial education in secondary schools as perceived by educators and by the business community; and to respond to these priorities with a comparative analysis of industrial vocational education in the United States and West Germany.

During March and April of 1981, the investigator, with the assistance of the Manitoba Department of Education and the Winnipeg Chamber of Commerce undertook an assessment of vocational industrial education needs as perceived by educators and the business and industrial community of the Province.

The population responding to this survey included vocational teachers, counsellors, vice-principals, principals and superintendents having responsibilities in vocational secondary schools. Industry and Commerce was represented by the membership of the Winnipeg Chamber of Commerce. A total of 271 educators and 105 members or

organizations of members of the Chamber of Commerce contributed to the survey.

In general, vocational educators and industrial personnel responded to the survey in a similar fashion. The areas receiving the highest ratings were:

Communication between various sectors of the community concerned with vocational education.

Improvement of the public image of vocational education.

Easing the transition of students from school to work.

Provide counselling for students with negative attitudes.

Increasing the co-operation and collaboration between the secondary vocational schools and the employment community.

The results of the Manitoba assessment have many similarities to results of current needs assessments carried out in the United States.

Information on the West German system was gathered during a 47 day data gathering visit. The United States portion of the study was carried out through the authors participation in The International In-residence Program at the National Center for Reseach in Vocational Education, at the Ohio State University.

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CHAPTER I

INTRODUCTION AND STATEMENT OF THE PROBLEM

Background

Who is responsible for preparing Canada's young people for the world of work? This is a question that is being asked with increasing frequency in Canada. Unfortunately, the answer that is being given by many Canadian agencies and institutions is "NOT I". Industry and commerce points to the public education system. The public education system beleaguered by steadily increasing costs and shrinking funds, cannot comply to everyone's satisfaction. Canadian business, pointing to its increasing costs and the need to remain competitive in a tight world market, states it cannot afford it. The Federal Government under the provisions of the constitution has no jurisdiction in education.

The Federal Government, however, can make funds available to it's provincial counterparts through programs such as the Technical and Vocational Training Assistance Act of 1960. The act had a nationwide impact. By 1970, an additional 500,000 student places had been created. (Young 1971)

This Act prompted the Manitoba Government to release a

White Paper in October 1967. The White Paper outlined in broad terms the plans for providing comprehensive vocational education and manpower development in the province. The implementation of this White Paper resulted in a rapid expansion of secondary vocational education in Manitoba.

In 1969 less than 10% of the Manitoba secondary school population participated in vocational education; by 1982 over 30% were enrolled in vocational programs. Approximately 90% of all vocational education stations in Manitoba are provided by the Regional Comprehensive Schools.

Between 1971 and 1972 seven large vocational centers, housing between 700 to 1600 students each, were placed into operation. These schools were based on the comprehensive model, offering both vocational and/or academic education for all students under one roof. Each school was left to its own devices on how to implement the vocational programs. To qualify for vocational funding by the province a vocational program must contain a 50% vocational component. The schools employed various modes of delivering the vocational component to the students.

The numbers are impressive, but it is apparently not enough. Don Pollock, Chairman of the Ontario Manpower Commission, during his presentation to Manitoba Vocational Educators, in Winnipeg in January of 1981, anticipated that the shortage of skilled labor will reach crisis proportions in the 1980's. Evidence is mounting that Canada's labor

shortage is more pervasive than previously thought. The Human Resources Survey, (1980) conducted by the Economic Council of Canada,(ECC) polled 1354 industrial establishments across the nation. The summary findings published in September 1980 are ominous. Approximately 60% of the manufacturers surveyed reported difficulty since 1977, in hiring skilled personnel. But more important is the revelation that over 50% reported that they anticipated continuing problems during the next four years (Tausz, 1981). Don Pollock places the blame on industry.

> "There is gross undertraining in Ontario and elsewhere in Canada. The single biggest barrier to broadening the base is the attitude of many employers to training. They simply don't believe in it. The present situation will get worse and worse and five years from now we may well have a serious crisis. I think the employers will have no one to blame but themselves."(Tausz,1981, p. 20)

How did this problem come to reach these proportions? Lloyd Axworthy, the Federal Minister responsible for Employment and Immigration, in his presentation to the Canadian Manufactureres Association (CMA), (Axworthy, 1980), stressed the historic reliance of Canadian Industry on Immigration for satisfying its needs for skilled labour. In recent years, however, he stated that the immigration of skilled workers has dropped from 106,000 in 1974 to 35,000 in 1978, to 25,000 in 1981. He cited two factors: first, that the Immigration Act of 1978 made it very difficult for companies to import skilled workers without first satisfying

the government that there were no Canadians available for the positions and that they had made every effort to train Canadians, secondly, the international market for skilled workers is very competitive. The Canadian economic environment is no longer in a position to compete with other nations in terms of salaries and other benefits. The net result of these factors is that only about 5% of Canada's manufacturers search outside of Canada for skilled workers.

The most disturbing factor in the whole scenario is the fact that Canada's unemployment rate (see Table 1) is reaching all time high proportions and almost 50% of the unemployed are youths between the ages of 16 and 24. (Statistics Canada, 1981); How do we compare to other western industrialized nations with respect to youth unemployment? (refer to Table 2) There is a marked difference between the youth unemployment rate of West Germany at 5.75% and Canada at 14.5%. Why is the rate so much lower in Germany? A recent publication of the Organization for Economic Co-operation and Development (1981) entitled Study of the Youth Employment Practices in West Germany commended the Dual System of education in preparing and placing the young workers of that nation. An earlier OECD (1976) study Reviews of National Policies for Education: Canada, was critical of the secondary school vocational programs and made the following recommendation: ".....the role of practical and technical education of

Table 1

Manitoba and Canada Unemployed and Unemployment Rates All Ages and Aged 15-24

	UNEMPLOYED (000)		YOUTH AS %	UNEMPLOYMENT RATE (%)	
	15-24	TOTAL	OF TOTAL	15-24	TOTAL
JAN.-NOV.			MANITOBA		
1981	14	29	47.1	10.5	7.0
1980	13	27	48.1	10.1	5.5
1979	13	26	50.0	9.7	5.4
JAN.-NOV.			CANADA		
1981	411	890	46.2	13.3	7.5
1980	408	867	47.1	13.2	7.5
1979	393	838	46.9	13.0	7.5

Source: Statistics Canada, The Labour Force, various issues (1981-1982).

Table 2

Youth Unemployment: Actual and Projected for 1981.

	Percentages			
	1978	1979	1980	1981
Canada	14.3	13.0	13.5	14.5
Germany	4.8	3.7	4.0	5.75
France	11.0	13.3	14.75	17.5
Italy	24.8	25.6	27.5	30.25
Japan	3.8	3.5	3.5	4.0
England	8.9	8.0	10.0	16.25
United States	11.7	11.2	14.0	15.75

Source: OECD Youth Unemployment: "The Causes and Consequences" (1981)

Canada's young people needs vigorous and creative re-thinking." The warning was clear. The facilities and processes in place at that time were not equal to supplying Canada's needs.

Countries such as Japan, West Germany, Austria, Switzerland, have similar statistics of low unemployment; particularly youth unemployment. All of these countries have a productivity level that Canadians are envious of, and all are in the forefront of technological innovation (OECD 1981). What is the educational common denominator in these countries? The answer is that in all these countries the majority of youths are in some type of vocational education. In West Germany for example over 80% (BIBB 1981) of the secondary school population receives some vocational education.

Demand for Industrial Vocational education in Manitoba is increasing. The pressure is being applied from two directions; the communities are placing requests for more student stations to be constructed in their neighborhood and industry is requesting more training in specific skill areas. For example, pressure by the southern school divisions of Winnipeg has resulted in the development of plans to construct a joint vocational center in Fort Garry. In addition, pressure from industry has resulted in the introduction of aero space metal trades in the vocational school of the Transcona Community of Winnipeg. Recent

publications by the Federal Government emphasize the need for additional vocational training. The Parliamentary Task Force on Employment Opportunities for the 80's Report, together with Employment and Immigration Canada's Labour Market Development in the 1980's, point to a crucial shortage in skilled manpower. Both reports emphasize the need for training at the secondary and post secondary levels. To satisfy the demand, construction of additional facilities is planned for areas of Winnipeg and Manitoba that are not yet adequately served. The Quarterly Reports on Occupational Skill Shortages in Manitoba (1981-1982) consistently point out areas of serious need. On the other hand the Labor Force Statistics Canada indicate relatively high unemployment, particularly among Manitoba's youth (see Table 1). These statistics in conjunction with the skill shortages report indicate that a sizeable number of youths have no saleable skills and are forced to remain unemployed. As evidenced by these statistics the continued development of vocational education is necessary to the Manitoba labor situation. Schools must continue to expand if they are to meet the shortages. The manpower is available as indicated by the unemployment rates, but the individuals are not receiving proper guidance and training.

Manitoba Research

Literature indicates the success of any vocational program is in great measure dependent upon the quality of research and planning achieved. However, research into vocational education in Manitoba is not keeping pace with a prolific expansion of vocational stations. Since 1967 four studies have been conducted. The first was a published report by a task group on vocational education (Pankiw, 1967). This task group compiled a list of forty recommendations based on student registration in vocational areas and interviews of students, administrators and staff of selected schools. In 1975 the second publication, a province wide follow up survey of graduates from vocational schools, was released. The results of the survey were considered inconclusive due to a poor response rate (Roberts, 1976). A second follow-up survey was administered in 1976. The results, however, have not been published to date. A third follow-up survey has been completed and the results were published in September, 1981. These four studies constitute the bulk of the research on vocational education in Manitoba. A few studies have been carried out by individuals, ie. a study by Welsh (1977), of selection and placement practices at Kildonan East Regional Secondary School. These studies, however, were generally in response to specific localized problems and and did not deal with the

overall situation in Manitoba.

Identified Issues

An informal survey conducted by an interview of the Manitoba Department of Education officials, superintendants, principals, and teachers involved in vocational education, together with a review of literature enabled the investigator to identify the following issues:

1) Adjusting the curriculum to accomodate the rapid changes in technology and manpower demands: Currently the schools have no vehicles to anticipate changes nor the ability to accomodate changes rapidly.

2) Recruiting instructors for specific courses: Schools have considerable difficulty in recruiting potential instructors from industry due in part, to the discrepancy in salary involved in shifting from a successful position in industry to a novice position in education.

3) In-service upgrading of teachers: Adequate incentives for the teacher to continue his/her education are lacking. Secondly, the rapidly changing technology in industry is outdating teachers that have left industry as recently as two or three years prior to their entry into the teaching profession.

4) School administrators role in teacher training and upgrading: School administrators are responsible for solving the problem of upgrading the staff, as well as,

curriculum and instructional areas to compensate for the changes in technology and employment conditions. Administrators are faced with a lack of time, funds and expertise to resolve the situation.

5) The rigidity of the present student tracking system: The tracking system presently in use requires a student to choose his vocational area at the end of grade nine. The instructors are specialists in their trade and consequently have a vested interest. They proceed to train a plumber or mechanic with the assumption that the choice is firm. The system allows little opportunity for the student to change in case of a poor choice. Students who do change are penalized. The tracking system also inhibits change and upgrading due to its reliance on the traditional trades.

6) Resource and personnel management: Some of the larger schools have annual budgets approaching four million dollars and staff counts approaching one hundred and thirty. In most cases the school administrators have little or no experience or training in industrial/commercial management techniques for an operation of this magnitude.

7) The historical academic bias in society often hinders a proper vocational choice by students and contributes to a split in the staff of the comprehensive schools. This hinders constructive co-operation between vocational and academic staff; who are in most cases working with the same student.

The Response

To accurately identify current perceptions, it was decided to assess the needs of industrial vocational education in Manitoba; and to respond to the expressed needs with a comparative analysis of industrial vocational education in the United States and West Germany. The United States was selected because of the similarity of its vocational education system and the readily available research. West Germany was chosed because of its international reputation for the excellence of its craftsmen and skilled workers. Dr. J. E. Radvary, of Resource Development Associates Inc., (1980) suggests that we should "take a page from the book" of the systems in place in West Germany. G. H. Kuper, (1980), former executive director of the United States National Center for productivity and quality of working life, echoes these sentiments and suggests there is much to learn from this nation.

Statement of the Problem

Access to Vocational Industrial Education programs in Manitoba's secondary schools has increased significantly in the past ten years. In conjunction with this growth, there is a need to ensure that human and financial resources are properly focused on meeting the evolving needs brought about by technological and socio-economic changes.

Decisions for the allocation of human and monetary resources, should be based on established needs with respect to: local requirements, evaluation and revision of programs, linkage with business and industry, recruiting and guidance of students, transition of students from school to the workforce and recruiting, pre-service and in-service training of staff. Guidelines for a course of action for the schools should be established in accordance with the identified needs if we are to provide accountability for expenditure of resources.

An understanding of successful techniques and systems developed in the United States and Germany would enhance the data available for responses to the Manitoba needs of industrial vocational education. Both of these nations have research and development resources that far exceed Manitoba's potential for research and development.

The Purpose

The purpose of the study, therefore, was to accumulate and analyze data which will provide direction for future research, planning and resource allocation in the province and to develop strategies and guidelines for this process. The study sought to accomplish this purpose by seeking answers to the following questions:

1) What are the needs of Vocational Industrial Education in Manitoba's secondary schools as perceived by

vocational industrial teachers, counsellors, supervisors and representative industries?

2) What is the relative priority of these needs?

3) To what extent do the priorized needs as perceived by vocational industrial teachers, counsellors and supervisors differ on the priorized ratings?

4) To what extent do the priorized needs of vocational industrial educators and industrial personnel differ on the priorized ratings?

5) To what extent do the overall priorized ratings as perceived in Manitoba differ from similar studies in the United States?

6) What solutions or systems have been employed in the United States and West Germany to satisfy needs that are similar to those that have been identified in Manitoba?

This assessment of Vocational Industrial Needs in Manitoba Secondary Schools is the first attempt of its type in this Province and in Canada. The survey was carried out with the assistance of the Vocational Section of the Department of Curriculum, Mathematics and Natural Sciences, Faculty of Education, the University of Manitoba and the Winnipeg Chamber of Commerce with the support from the Manitoba Department of Education.

Assumptions

The following assumptions were made in relation to this study:

Teachers and supervisors administer the Industrial Vocational Programs to students on a daily basis and are aware of problems on a local and regional level.

Industry is the recipient of the product of the schools offering Industrial Vocational Programs. Industry is in a position to appraise the skills of the employees that have graduated from the Industrial Vocational Programs.

Similar national surveys of priority were conducted in the United States by Dr. Edward Morrison and Dr. K. A. Adams at the National Center for Research in Vocational Education, The Ohio State University, during 1976, 1977, 1978 and 1981. An extensive and systematic procedure was used by the center to develop the problems and needs experienced in operating vocational programs. The National Center at Ohio State University would offer a logical choice for a comparative analysis between United States and Manitoba.

West Germany is being recognized as an international leader in industry and human resource management; particularily in Vocational training and productivity systems. Problems similar to those encountered in Manitoba would be encountered in such an educational system. The

solutions generated in Germany may be of use in Manitoba.

Delimitations

Due to the design of the research procedures utilized in this study, the researcher imposed the following delimitations. The study was confined to the perceptions of:

1)Vocational industrial teachers and supervisors currently active in the Manitoba vocational schools (as listed by the Manitoba Department of Education).

2)The membership of the Winnipeg Chamber of Commerce.

Field study in the United States consisted of an one month participation in the International In-residence Program at the National Center for Research in Vocational Education, at the Ohio State University.

Field study in Germany was limited to a six week survey of representative research and training institutions as listed in Appendix G.

Limitations

The population representing Manitoba industry was limited to the members of the Winnipeg Chamber of Commerce. The chamber considers itself representative of Winnipeg Area Industry. Winnipeg contains a considerable majority of Manitoba Industry and may be representative of Manitoba. The number of returns from the chamber were low. However,

sub-groups of members collaborated and returned one form to represent the opinion of their group. The actual number of members represented by the returns was estimated by the Chamber of Commerce management at 16%. The management of the Winnipeg Chamber of Commerce is quite satisfied with the returns in relation to other surveys it undertook and is confident that it is a representative sample. (see Appendix K)

All items and categories are ranked according to the value of their means, the range of the means is quite narrow. It remains a question whether there is a greater than chance difference between 3.943 and 3.867. There are statistical procedures that can be applied to determine generally if there are statistically significant differences between the means of items or categories. However, in this case the practical significance of the difference in means is questionable. For this study the researcher elected to interpret the survey results according to their practical significance (Dreyer, 1979). The three levels of analysis may provide a solution to this problem. If the item or category ranks consistently indicated a similar relative position for the need it is fairly certain that the priority is as indicated. For example items referring to curriculum consistently receive high priority and items referring to safety were consistently ranked low. It is fairly safe to assume that a strong need exists in the

curriculum area and safety problems are perceived to be under satisfactory control.

The broad scope of the survey necessitated the inclusion of general items. A statement like "Improve business and industries use of vocational programs as a source of employees", gives only a direction. How this is to be accomplished is a matter of further research.

Definition of Terms

The following definitions apply to terms used in this study:

1) Vocational Industrial Program:

a program designed to impart technological and trade skills and knowledge; and prepare students for a job in a specified field or within clusters of related occupations in industry; or in business. (Pankiw, 1976)

2) Vocational Industrial Teacher:

a teacher certified by the Manitoba Department of Education, currently teaching a vocational industrial subject in a Manitoba Secondary School.

3) Vocational Industrial Counselor:

a guidance counselor currently active in a Manitoba Vocational Secondary School.

4) Vocational Industrial Supervisor:

a vice-principal,principal ,superintendent or curriculum consultant active in a Manitoba Vocational

Secondary School.

5) Manitoba Industry:

any business establishment currently a member of the Winnipeg Chamber of Commerce.

6) Priorize:

to list in descending order of importance as perceived by the respondents in this study.

7) Land:

member state of the Federal Republic of Germany, (West Germany).

8) BIBB:

West German Federal Institute for Vocational Education and Research.

CHAPTER II

REVIEW OF THE LITERATURE

Introduction

An ERIC search for literature associated with needs assessments and with vocational education revealed that a great deal of the research and literature in this area originated at the National Center for Vocational Education at the Ohio State University. Subsequently, in accordance with the purpose of this study, the majority of this review was carried out at the National Center for Research in Vocational Education. The work was performed under the auspices of the International In-residence Program of the National Academy at the National Center. Most of the literature was available in the libraries of the National Center and the University. The location and the program provided the additional advantage of being able to consult with the authors and/or with personnel associated with the major studies mentioned in this review. This consultation process improved the efficiency of the search process in providing access to information and advice that is not readily available in the published materials.

Purpose of the Review

The purpose of this literature review is: (1) to examine the relative strengths and weaknesses of the various concepts and methodologies employed in the needs assessment arena, (2) to identify proven strategies, instruments, needs statements and analysis techniques that are relevant to this study, (3) to review selected major studies employing needs assessment techniques in the field of vocational education, (4) to synthesize the findings and recommendations of these studies to facilitate a comparative analysis between the results of an assessment of technical vocational needs in Manitoba and the findings of the selected studies.

To accomplish these stated aims, two general areas of literature will be consulted. The first deals with the theory, concepts and practices associated with needs assessments that have been developed in the past decade. The second area of literature will concentrate on the major vocational education needs assessments carried out in the past ten years.

Determining the nature of needs and their relative intensity has always been a task for educators. Usually this has been done informally. Starting in the early 1970's, however, systematic efforts to assess educational needs were increasingly employed. An important number of these were stimulated by the accountability movement, and by Federal Legislation in the United States, for example, the Elementary and Secondary Education Act of 1965. More recent

U. S. Federal legislation, such as the 1976 Ammendments to the Vocational Education Act and the accompanying rules and regulations, also caused educational needs to be assessed (Ahman, 1979). The years since 1970 have seen a proliferation of systems models and definitions in this field, with many claims and counterclaims as to the utility and importance of the needs assessment approach and its applications (Kominski, 1978). There is, however, agreement among many authors that it is a basic component of program planning and evaluation (Kaufman, 1972, Stufflebeam, 1974, Scriven and Roth, 1978). The literature in this area is plentiful and varied.

The Educational Definition of Need

The classic definition and perhaps the most quoted definition of educational needs from the literature is by Kaufman (1972)---"An Educational Need is a measureable discrepancy or gap between current outcomes and desired or required outcomes." This statement has often been translated to "the difference between what is and what ought to be." Oswald (1980) placed this definition in a mathematical context, "What should be - What is = Educational Need." This is called the discrepancy definition.

This definition is often a basis for examining individual needs. A major criticism of the discrepancy definition, however, is that it requires the knowledge of

what the ideal state is in order to determine a need, and further, it requires that this state is a stable target and one toward which educators strive. There is confusion about the difference between needs and wants. Our wants are well known to us, but the satisfaction of them may not constitute proper goals. For example, a child may want another stuffed toy even though it already has a number of them. This is a "Want"-- the child's state of well being is not likely affected by the absence of another toy. On the other hand, a deficiency of protein in the child's diet would be quite detrimental to the childs' proper development. The child, however, may not want or even know what protein is; but the proper amount of protein is a definite need that has to be satisfied. We are not always aware of our needs, but the satisfaction of them may be vital to our welfare. A need ends and a want begins when a satisfactory condition has been reached. Therefore a need may be a gap between "what is and what is satisfactory"(Ahman,1979). Scriven and Roth (1979) stated this more formally "'A needs 'X' means 'A' is or would be in an unsatisfactory condition without 'X' in that respect, thereby moving toward or achieving but not surpassing a satisfactory condition in this respect" (p 3).

Clearly there are many sources of need which are of concern to people in vocational education. Primary among these are student's needs: but there are also institutional needs and societal needs. The three are inseparable and

often identify the outcomes of educational programs that are not meeting their educational objectives.

It is very difficult to separate individual wants from individual needs. Similarly it is difficult to distinguish between individual and institutional needs such as space, equipment and staff. Schools are designed to meet individual needs and develop their needs or wants in accordance with these needs. The individual needs, however, are intertwined with the needs and wants of society and are expressed by the individual and the political institutions that govern the schools and control the resource allocations (English, 1977). The basic issue then, focuses upon the satisfaction of the personal needs of the individual. The schools, set up and funded by society can greatly assist in this process if their activities are properly planned and are responsive to the needs of the individuals. This responsiveness could guarantee continued support of the schools by society.

Definition of Need Assessments

As with the definition and description of needs, most models of needs assessments draw on the early work of Kaufman, who placed the needs assessment in the context of "Educational Systems Planning" (Kaufman, 1972). Needs assessments provide data for identifying and subsequently eliminating high priority needs. Needs when properly

documented and assessed provide basic information for setting valid goals which, in turn, assure us that our education is relevant.

There are generally four components to needs assessment: (1) generate goals and rank them for importance-- this determines the desired conditions; (2) determine the present status of each goal or existing conditions; (3) identify and analyze discrepancies between the goals and present status; (4) assign priorities to the discrepancies. These discrepancies then constitute the high priority needs areas that require attention. These high priority needs areas quite naturally become the basis for research and planning. The whole process is conceptualized as the "front end" of educational planning (Witkin, 1977) and the outputs of the needs assessments are used by the decision makers for general or specific program initiation or modification. There is substantial agreement in the literature that a complete assessment always includes the above four basic elements. The order of the elements may vary and other steps may be added, the basic discrepancy model, however, is the most widely used used device for assessing needs in elementary and secondary schools (Witkin 1977).

Types of Needs Assessments

An untold number of needs assessments have been

conducted at local, regional and national levels in the United States. These assessments have used a variety of approaches, formal and informal, thus making it difficult to classify them in an orderly manner. The Rhode Island State Department of Education (1978) constructed a Needs Assessment Compedium of Abstracts, which reviewed seventy-three representative systems. Twenty-three of these were judged useful. Sixteen criteria were used to assess the quality of the systems. The compedium has some use as a resource for selecting and constructing a needs assessment instrument, however, no attempt at classification or directions to categorize the systems for a particular use was made in the Compedium.

Kaufman (1972) identified three general classes of needs assessments: inductive, deductive and classical. The inductive approach requires the collection of data regarding the current state of affairs in the educational community. Goals are then formulated by sub committees of the educational community and the discrepancies are estimated. This is followed by the setting of detailed objectives to bring about the required behaviors. The deductive approach starts from existing goals and outcome statements, then the degree to which they are being attained is determined. The discrepancies discovered are employed to formulate methods to bring about the desired state of affairs. The classical approach starts with some general statements of goals or

intents and proceeds directly to the development of educational programs, which are implemented and evaluated. This model is the one that is used most often by default and is not recommended. (Kaufman, 1972)

The inductive needs assessment has advantages because it starts with the perceptions and concerns of the partners in the educational community, but has the disadvantage of being somewhat slower and more complex to implement than the deductive process. The deductive approach has the disadvantage that the goals and expectancies that form its basis may not be valid for the area of investigation. Care must be taken to validate the goals and expectancies. Most needs assessments are deductive, the incidence of inductive needs assessments is rare (Ahman, 1979).

kaufman (1977) further proposes a possible taxonomy of needs assessments. He offers six types but makes the point that there are no right or wrong modes, only differences as to when and where each mode is to be used. Kaufman classifies the modes in the following manner:

(1) Alpha--This is the most basic approach and requires that all conditions, myths and preconceived notions be dropped and that the investigations be confined to determining whether the intended outcomes do in fact contribute to the requirements of the learner. The model would determine the required outcomes before using existing policies and solutions. It is the most direct route to the

identification and achievement of change.

(2) Beta--This is perhaps a more pragmatic approach. In this mode, perceived needs of the participants are analyzed and rated according to priority, programs are then designed to meet these needs. In this type, the requirements for survival and societal contributions of the learner are assumed by the participants.

(3) Gamma--The participants are asked to order existing goals and objectives for the purpose of obtaining priorities. Based upon the order of rank, alternative programs or materials are emphasized in the school system. Associated with this type are cost effectiveness/efficiency models. This process often forms the basis for budgetary decisions.

(4) Delta--The decisions of what to do and frequently how to do it have been made. What remains are decisions of task management and accomplishment. Possible examples are management by objectives or management by exceptions.

(5) Epsilon--This type of assessment is similar to summative evaluation. It is used to determine to what extent the desired results have been accomplished.

(6) Zeta--The final type of gap analysis listed by Kaufman, is akin to formative evaluation. Discrepancy data concerning progress and accomplishment of means and ends can be collected at any point in the process.

Kaufman cautions that the further into the taxonomy the

assessment is initiated, the higher the probability for error. Each step in the taxonomy requires that more assumptions and established ideas are accepted and used in the measurement process. The established norms may not be correct; thus invalidating the whole process.

Adams (1977) prepared the following classification scheme for needs assesments:

(1) Objective discrepancy analysis: student performance is measured by using standardized tests or work products and compare these to a desired status. Desired status is estimated by students, educators and/or community judgement.

(2) Subjective discrepancy analysis: only subjective information is used to estimate the level of student performance that should exist and the level which actually exists, for each educational goal. The opinion of reference groups, students, teachers and community, are used for "what is" and "what should be". The results are analyzed to locate large discrepancies.

(3) Self-perceived needs discrepancy analysis: students alone estimate independently the level of their skills in terms of a composite opinion of what ought to be.

(4) Interactive needs assessments: the participants of an educational system, students, parents, teachers employers interact systematically to generate goal statements. These statements are then analyzed for current importance to estimate needs and actions required.

(5) Objective needs assessments: in this process objective data, such as manpower statistics, and skill shortages reports are employed to identify gaps.

(6) Subjective needs assessments: a rating scale is used to obtain from respondents their opinion of the relative importance of a group of needs.

Table 3 lists the advantages and disadvantages of each needs assessment type as identified by Adams.

Scriven and Roth (1978) point out that there are dangers in using the composite subjective judgement reference groups. It is unclear whether the participants are voting for basic needs or incremental needs. For example, it is one matter to ask schools to provide instruction in basic skills (a need which usually receives high priority) and another to ask that they provide more of such instruction. The incremental needs are important in this case, but have the participants made this distinction? Scriven and Roth call this a "blue sky" process in which the realities of instruction and physical limitations are ignored. This could make the entire process a waste of time and resources. What reality requires is some consideration of what is practical and not merely what is wonderful.

In all types of needs assessments it must be kept in mind that the desired standards are relative to the time and location in which they are perceived. For example, what we consider an absolute necessity in Canada may be an

Table 3

Some Advantages and Disadvantages of the Six Types of Needs Assesments. *(Adams 1977)*

ADVANTAGES	DISADVANTAGES
1) Objective Discrepancy Analysis a) Objective data have more validity and credibility b) Data are readily quantifiable. c) Norm referenced data can be easily compared over time and over groups.	a) The computations of discrepancy scores requires that both the what is and what should be dimension are measured in a comparable way. b) Test norms may not be appropriate c) Tests may not be appropriate. d) Use of objective tests limit the variety of types of needs on which information may be collected since tests reflect only cognitive achievement.
2) Subjective Discrepancy Analysis a) It is easy to compare "what is" with "what should be" since similar scales may be used. b) It is easy to compare the perceptions of different groups. c) Perceptual data about "what is" is valid data as long as it is recognized as such.	a) Are composite judgements of "what is" true reflections of the actual situation? b) Poor sampling can seriously bias the results. c) This kind of analysis may vastly over-simplify the needs which truly exist and the view the constituents have of them.
3) Self Perceived Needs Discrepancy Analysis a) The technique has the advantage of more valid "what is" information and retains comparable rating scales for easy analysis. b) The technique can be used as a diagnostic tool with individual students as well as to compare general program needs.	a) The approach is generally limited to student needs. b) Perceptual information about "what is" may not reflect the true situation since individuals may have different standards and lack complete knowledge about the status of different areas.
4) Interactive Needs Assessments a) Involvements of the constituents may generate in and commitment to the study and may the use and acceptance of the study. b) The two way communication required may facilitate the development of goal statements and uncover problems that may have remained dormant without the interaction. c) Goal statements generated by the participants may word ideas in such a way so as to make them more understandable to the community.	a) The process is very time consuming. b) The commitment to the process may dissipate if the process is very long. c) Goals may be confused with solutions and problems. d) A lot of time may be wasted in repeating processes that have been completed successfully elsewhere.
5) Objective Needs Assessments a) For certain types of questions, objective data which is compared over time, against standards, or across demographic variables may be sufficient for deriving needs. b) Objective data may be compiled from existing sources without the collection of new data.	a) Excessive data may be collected that may obscure the original intent of the study. b) The data may be more open to various interpretation. Needs may be derived differently depending on how the data is viewed.
6) Subjective Needs Assessments a) The use of only one rating scale makes this process one of the easiest to complete, analyze and report. b) The process of setting priorities is shortened leaving more time and resources for program planning and remedial action in high priority areas.	a) The process may only assign priorities to goals; if this is the case, it is not a needs assessment - - a goal is not the same as a need.

unattainable luxury in India. The current desire that everyone attain a certain minimum level in the so called "basic skills" of reading, writing and arithmetic may have been unrealistic fifty years ago, thus, we must constantly be aware of the existing situation and define our framework of the "adequate or satisfactory" level accordingly.

Some Major Vocational Education Needs Assessments

A variety of needs assessment studies have been conducted in vocational education. Since they differ in scope and quality, it is difficult to identify a representative cross section. An attempt has been made in this section to identify and describe studies that have been recognized in current literature as having had considerable impact and are sound in their approach. Illustrative of these are the national studies conducted through the National Center for Research in Vocational Education at the Ohio State University. These and the state assessments described in the following section incorporate, with modifications, elements of the six types of needs assessments described previously.

National Needs Assessments in the United States

I) Vocational Education Program Needs in Large Cities: A National Study (Adams, 1977)

The study poses three major questions:

1) What are the needs for vocational education programs in large cities?

2) What are the relative priorities of these needs as perceived by urban vocational educators?

3) How do the vocational education priorities of large cities differ according to their size?

To answer these questions, a combination of interactive needs assessments and subjective discrepancy analysis were employed. The steps for establishing and measuring their relative priority were:

1) Determine the major problems

2) Determine major goals

3) Developing need statements based on discrepancies between problems and goals

4) Determining the relative priority of these needs

In developing needs statements considerable effort was made to obtain maximum involvement of urban educators, students and citizens. Open ended surveys and personal interviews were used to explore major problems and goals for urban vocational education. In this manner information was collected and synthesized into statements of need.

The relative priority of vocational education needs were assessed by using a single degree of need scale. The degree of need was defined as the difference between "what is" and "what should be" as well as the importance of reducing that difference.

The population used in the study was that of cities with over 100,000 residents (according to the 1970 U. S. census). In addition to these, the largest city in those states which which did not have a city with at least 100,000 were used. A total of 164 cities were included in the study.

To explore the critical needs in the urban vocational education program, three approaches were used. First, personal interviews were conducted with representative groups from the education and manpower community in fourteen large cities. Second, an open ended mail survey was sent to district level vocational personnel in 160 large cities. Third, key documents from the literature were analyzed. As a result, over 6000 statements of problems and goals for resolving them were generated for twelve areas of vocational education.

This information was reduced to 30 major goals and 260 specific needs relating to these goals. Four areas of vocational education were represented: curriculum and instruction, administration, personnel, and guidance and counseling.

To obtain a priority listing of the 30 major goals and the 260 specific needs, a packet of five survey instruments was developed and mailed to district level vocational personnel in 164 large cities. Nearly 70% of those receiving the survey instruments responded with a priority

rating of the goals and needs. The major findings of this study in descending order of importance are:

1) The highest ranked major goal area concerned the funding base for vocational education in major urban areas.

2) Sixty percent of the ten highest national priority major goals related to improving the linkage between the world of work and vocational education through such avenues as providing vocational guidance on careers, ensuring the relevancy of vocational curricula to jobs, expanding work experience opportunities for students, and improving community relations and support.

3) The fifty top ranked specific needs for the United States are in the major goal areas of vocational guidance and community relations.

4) Major goals related to the on going support and maintenance of vocational programs tend to be ranked at lower or medium priority.

5) In general, large city directors of vocational education and members of their staffs across the nation rate both the major goals and the specific needs in the areas of post secondary vocational education as lower priorities.

6) In general, large city directors of vocational education and members of their staff across the nation perceive serving persons with special needs and equal educational opportunities to be lower priorities.

II) National Assessment of Vocational Education Needs (Morrison, 1979).

This study was conducted by the National Center for Vocational Education at the Ohio State University during the years 1976 to 1977 as part of the National Centers contract with the United States Federal Government.

The major purpose of this study was to provide a preliminary assessment of the needs of vocational education as experienced in field operations.

A comprehensive literature search that was limited to the five years preceeding the study was employed to develop needs statements. An educational systems model (Morrison, 1972) was used to define a set of five logical categories within which needs would be sought. The search categories were:

1) Educational program management.

2) Educational program personnel (selection, preparation, and maintenance).

3) Educational program content. (identification selection, development, assessment).

4) Educational program functions (instruction guidance counseling, placement, follow-up).

5) Learners (individual and group differences of educational significance).

Over 600 statements were selected through this search. To these was added a set of 30 priorities established by the

U. S. Office of Education for its vocational research and development programs. A second set of 21 priority needs identified by the National Center for Vocational Education and used to direct its programatic work for several years; together with a third set of 30 major goals identified by the National Study of Vocational Needs in large cities, described previously, constituted the resources on which these needs statements were based. This entire collection of needs was distilled down to 101 needs.

After a review by evaluation specialists, directors of research and other vocational specialists, the final version of the instrument contained 48 needs. The instrument used a degree of need scale similar to the one employed by the large cities study developed by Adams.

Ten specific populations were selected as respondents. These were: State Directors of Vocational Education, State Directors of Community/Junior Colleges, Directors of State Research Coordinating Units in Vocational Education, Directors of State Vocational Instructional Materials Laboratories, Executive Secretaries of State Advisory Councils on Vocational Education, Vocational Education Teachers, Superintendents of K-12 School Districts, Directors of Area/Joint Vocational Schools, Presidents of Community/Junior Colleges and Vocational Teacher Educators. A stratified proportional random sample of 2000 was selected from the national population identified previously.

The overall response rate was approximately 50%, with a range of 85% return rate for State Directors and 36% for Vocational teachers.

The major findings of this study in descending order of importance are:

1) Highest priority was assigned to improvements in collaboration with key segments of the employment community, in communicating the benefits and content of vocational education, and in the relevance of vocational curricula to current job opportunities and practices.

2) Needs assigned high priority by consensus of all groups have a striking "external" orientation. Many of them concern interaction with, and response to, the community at large and to the changing context of vocational education.

3) Respondents to this survey appear to have assigned lower priority to problems of equal enrolment opportunity, such as sex stereo-typing, and special needs groups.

4) The major differences among groups concerning priorities were between those responsible for state-level management and those concerned with local education.

III. American Vocational Association Membership Survey (AVA,1978).

The AVA is the largest known affiliation of vocational training and can be considered representative of vocational teachers in the United States (Morrison, 1979). This study

was carried out in 1978 by the AVA with technical assistance by the National Center for Vocational Education.

The AVA study addressed the follosing questions:

1) What is the membership profile of the AVA? (Where do they work? What type of institution? What is the size of the institution? What are their responsibilities? What type of program does the institution offer?)

2) What goal priorities does the membership see for the AVA?

3) What are the professional development priorities of the membership?

To assess the professional development needs of the membership and the goal priorities for the AVA, the needs and goal statements developed for the Adams and Morrison studies were used as a base. The design of the instrument was similar to that employed by the two previously mentioned studies, in that judgements as to the amount of difference and the importance of the difference were combined to form one rating. The respondents were required to respond to each statement twice; once to assess the need in terms of professional development and once to assess its importance as a goal for AVA activities.

The instrument was mailed to a 10% random sample of the 56,000 AVA membership. Completed forms were returned by 1,400 members, a 23% return.

The major findings of this study in descending order of

importance are:

a)Priorities for Professional Development are:

1) Communicating information about vocational education to the public.

2) Using business, industry and labor resources effectively.

3) Upgrading subject matter.

4) Involving the community in vocational education programs.

5) Strengthening the ties between general education and vocational education.

6) Upgrading teaching skills.

7) Improving vocational education program planning.

8) Encouraging students to remain in school.

9) Providing guidance and counseling service for vocational students.

10) Improving students' school to work transition.

b) Priorities for AVA Advocacy:

1) Communicating information about vocational education to the public.

2) Using business, industry and labor resources effectively.

3) Strenghtening ties between general education and vocational education.

4) Involving the community in vocational education programs.

5) Increasing access to vocational education.

6) Improving vocational education program planning.

7) Upgrading subject matter.

8) Upgrading teaching skills.

9) Providing guidance and counseling services for vocational students.

10) Strengthening vocational education's role in job developement.

As can be seen the priorities for both the professional development and for AVA advocacy are very similar. It should also be noted that the emphasis of many statements is in the area of communication and cooperation with agencies outside the immediate domain of vocational education.

IV. Major Needs Assessment Activity of the National Academy for Vocational Education (Newton, 1980)

This study carried out in 1980 was another collaborative effort between the AVA and the National Center for Research in Vocational Education. Due to the relatively poor response rate in the 1978 AVA study, the procedure was modified. Two needs assessment instruments were developed. The two instruments differed only in the choices listed for "priorities for professional development". Instead of listing all possible choices, each instrument contained a representative number of responses. This procedure was chosen to aid in administering the study and to facilitate

the task of respondents in selecting only the top three priorities for professional development.

Determination of the instrument items involved:

1) Consideration of the national priorities as identified by the U.S. Bureau of Occupational and Adult Education (BOAE).

2) Consideration of the National Center for Research in Vocational Education's recommendations based on the previously described studies.

3) Review of pertinent current literature.

4) Unstructured interviews involving vocational educators and leaders of organizations and agencies representing business/industry and labor.

The final instrument identified a list of 24 staff development needs for vocational educators.

The major questions the survey sought to answer were:

1) What are the perceived staff development needs of vocational leadership personnel?

2) What staff development programs are vocational educators interested in attending?

3) How do the perceived staff development needs for vocational educators differ by regions in the U.S., and by organizational and institutional affiliation?

4) What are the perceived skill areas that vocational educators want to improve or expand?

5) What is the level of participation in professional

development activities held in state and out-of-state?

The population surveyed in this needs assessment was a proportionally stratified random sample of the AVA membership. The sample included 832 teacher educators and 2,718 vocational administrators. A return rate of 52% resulted.

The following conclusions were drawn from the study:

1) The effectiveness of vocational education can be enhanced by:

a) Improving and strengthening the role of vocational education by using business, industry, and labor resources.

b) Economic development and creation of new jobs.

c) Improving students transition from school to work.

2) Respondents showed a strong preference for attending professional development activities designed to strengthen and expand their program development, planning and evaluative skills

3) The respondents' preference appears to be to attend a greater number of professional activities held in-state.

4) Over all staff development needs for increasing the effectiveness and delivery of vocational education were higher than the overall needs for human and social adjustment and improvement through vocational education.

All four of the studies described have a striking

similarity in their conclusions. The emphasis of the perceived needs consistently remains in the area of linkage with the community that vocational education is designed to serve.

State Vocational Education Needs Assessments

The number of needs assessments in the vocational education field is truly large at the state level. This section describes several of the more comprehensive studies.

I. Minnesota Survey of Vocational Education Needs.

The major questions posed by this study were:

1) What are the general and specific research needs for vocational education in Minnesota, as perceived by vocational educators and selected industrial personnel?

2) Determine to what extent the research needs of vocational education differ as perceived by vocational educators and selected industrial personnel?

3) What are the most critical needs by areas of employment and by each vocational education field, as perceived by employers and educators.

To answer these questions a subjective discrepancy analysis was employed.

To determine the needs and their relative priority for each population the instrument developed by Morrison (1979) was modified to suit the purpose of the study, and

administered to the identified population via a mail survey.

The populations used in the study were Minnesota vocational educators and industrial personnel having responsibilities related to vocational training in Minnesota. A convenience sampling scheme was employed to identify 2,430 vocational educators and 1,543 industrial personnel. The response rate for vocational educators was 41.1% and for the industrial personnel it was 23.9%.

The data was analyzed in two ways: one method, to arrive at priority recommendations, was to accept the highest rated items, i.e., the highest means as priority indicators, and secondly to group the data into ten broad categories and then select the highest area based on an average of the items within that area. The categories employed were:

1) Special learner groups
2) Planning and evaluation
3) Student services
4) Curriculum and program development
5) Staff development
6) Curriculum content
7) Inter-intra agency communication
8) Staff utilization
9) Management

10) Student and behavior problems

In general, vocational educators and industrial personnel priorized the items in a similar fashion. The two highest rated items were:

1) Provide opportunities for all vocational students to acquire the basic skills (e.g. reading, communication, math) required for course work and jobs.

2) Improve opportunities for in-service personnel to renew and expand their competencies.

The second method of using the categories with the highest mean rating produced the following results: the category that was ranked the highest was "Inter-Intra Agency Communication". Within this area the priority items were:

1) Better communicate the benefits and content of vocational education to parents, students, employers, and general educators.

2) Increase collaboration with key segments of the employment community (e.g. business, industry, organized labor, government).

"Curriculum Content" and "Staff Development" were the next two broad areas having high priority.

The various areas of employment and vocational education areas rated the items and areas in a similar fashion indicating no signficant differences in priority.

The report was used to assist the state as well as the local educational agencies to identify critical areas that

need continual and programatic R & D efforts and to ensure that state and federal funds are expended on the most critical problems facing the field of vocational education in the state of Minnesota.

It is interesting to note at this point that the State of Minnesota embarked on a major publicity campaign in all public media in 1979. The purpose of the campaign was to inform the public at large of the purposes, programs, and advantages of Vocational Education. (Boyle, 1980)

The following two studies are examples of systems that employ objective data to establish "what is" and "what should be". The second, in particular, is a sophisticated computer based management system.

II. Needs Assessment on Vocational Education: Florida (Fishkind, 1976)

This study should be considered an objective needs assessment in that it relied on data generated by outside agencies to project and estimate vocational education needs in northeastern Florida. It includes projections of prospective shortages and surpluses of manpower in various occupations, and field surveys of local vocational education programs, their organizations, their students, teachers, funding, and facilities.

The study progressed in five steps:

1) An economic analysis of the target region was

conducted and its potential for economic and population growth was estimated.

2) A projection of the demand for labor by occupation and region was made.

3) A projection for the supply of labor by occupation and region was made.

4) The projections for demand and supply were combined and analyzed to identify future needs.

5) Extensive field surveys of vocational education programs, facilities, students, teachers, and administrators were conducted.

The study was comprehensive and identified occupations with significant excess of demand or supply. In this way administrators could presumably quickly react to adjust the output of the schools accordingly.

This project was a major and expensive undertaking. Data as to its impact is not generally available.

III. Missouri Management Information System (Atteberry,1977)

This was another massive objective study that dealt with the development and the related needs assessments of a management information system for the State of Misssouri. The objective function of the developed model was the maximization of the number of training related placements.

The description of the models developed, their use, the

mathematics and statistics involved are beyond the scope of this review.

The needs analysis system that was developed for the management information system had the following structure:

1) The method was designed to identify those groups of people to be served by vocational education as required by federal law.

2) The technique had to allow for the fact that different levels of the vocational educational system have distinct target groups of people to serve.

3) The needs analysis had to take into account the relationship between vocational education and the labor market activity of the individuals. A methodology for determining those in need of vocational education should include measures that reflect the needs of those having labor market problems.

4) The system had to take into account the fact that the needs for vocational education services are dynamic. Those in need of vocational education services vary from time to time. The needs for services are a function of the types of employment available, the industrial base and other economic factors.

5) The methodology had to take into account other agencies or institutions involved in the development of human resources. These are depicted in Figure 1.

6) The analysis technique had to be cost efficient. It

was designed to make use of existing data which have been collected by other agencies such as the Bureau of Census. Figure II describes the final model.

The needs assessment system depicted is based on computer capability to store and manipulate the variables in simulations or actual case demands.

The impact of the developed system according to Atteberry was the following:

1) The system as designed was not implemented.

2) The process, the tools and the techniques have not been adopted for continuous use by the State Department of Education.

3) Developmental activities and implementation attempts suggest that a reason for the lack of adoption stems from a resistance to improve the planning process."

Atteberry further states that the resistance to implementation and use of the system occurs for the following reasons:

1) Disincentive to plan by administrators.

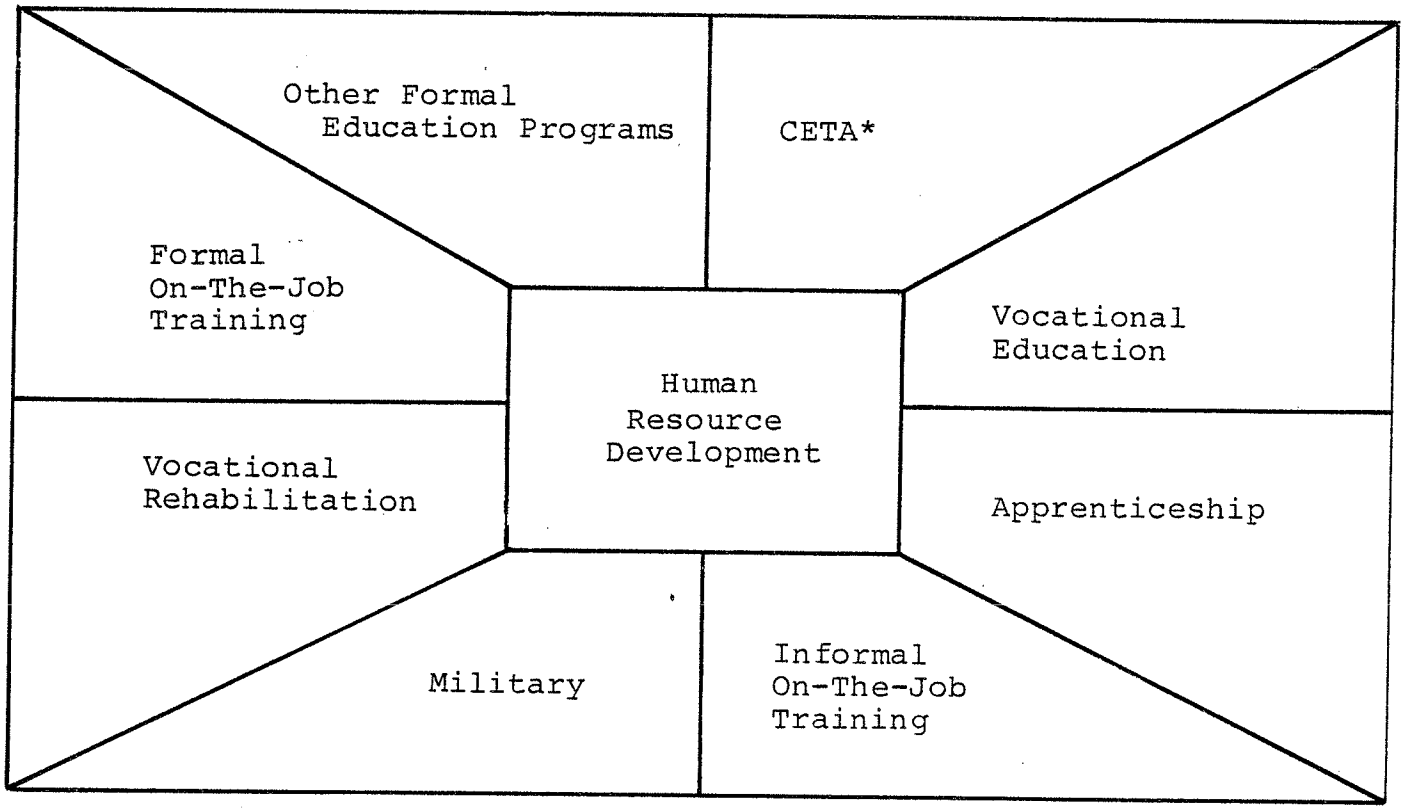
2) The existence of a laissez-faire educational system.

3) Inadequately trained and unmotivated administrators.

The sheer size of the system and its high technical demand on its implementors was probably a contributing factor. Another aspect that may frighten its potential users is the high degree of accountability that the facts and figures would demand. There appears to be an inverse

Figure 1

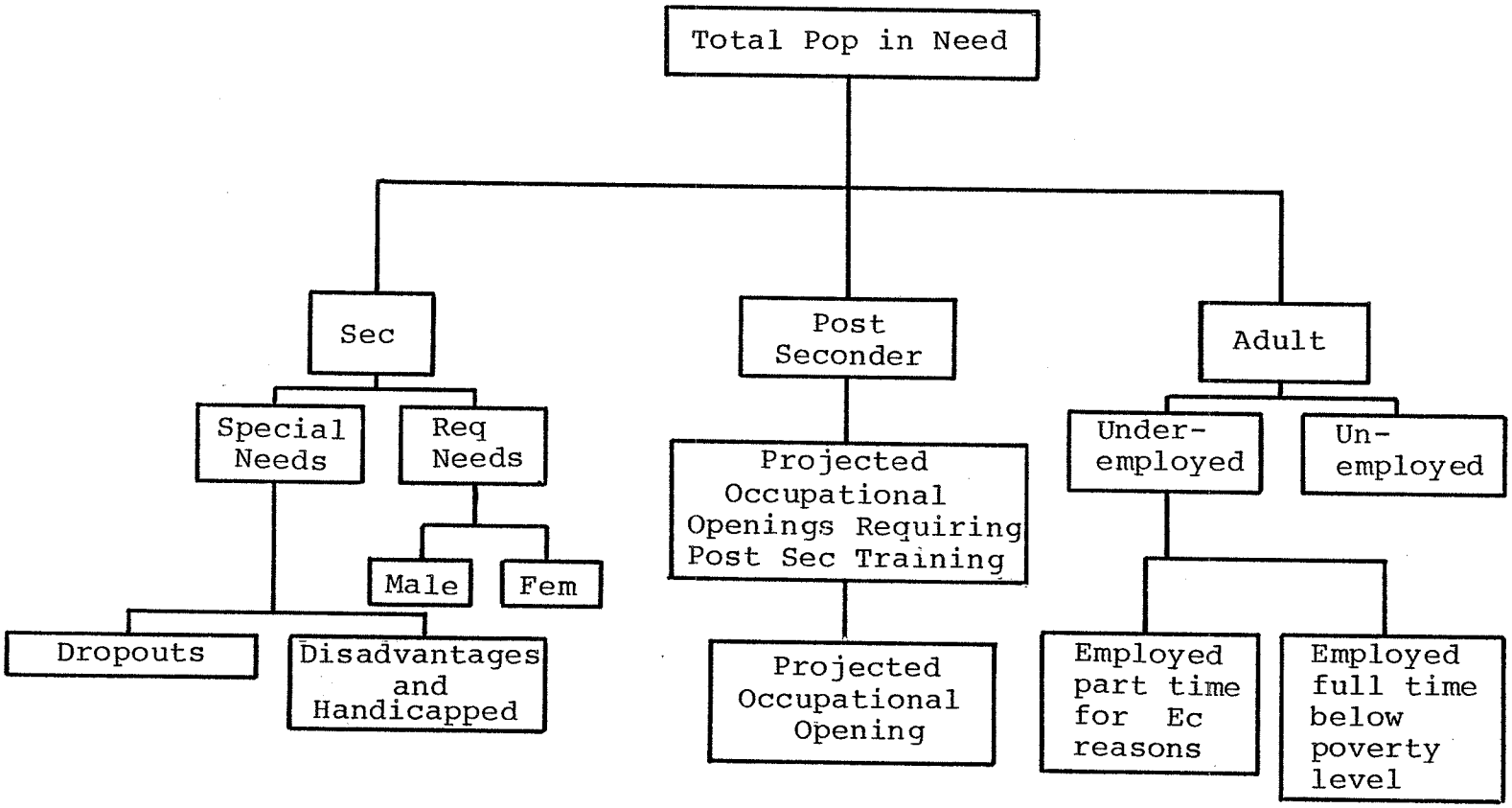
Missouri Management Information System. (Atteberry 1977)



*Comprehensive Employment Training Act aimed at vocational upgrading of the disadvantage source (Atteberry 1977).

Figure 2

Missouri Management Information System Needs Assessment Model. (Atteberry 1977)



ratio between the sophistication and completeness of a model and its widespread and enthusiastic acceptance and implementation. (Witkin, 1975).

IV. Select Areas Vocational Program Improvement Study, Oregon. (Vinarskai, 1980)

A brief description of this study was included because it represents a different approach to needs assessments.

This project involved the use of the Delphi technique in selected vocational education program areas. The areas to be priorized were arrived at through a search of literature that concentrated on goal and need statements developed by various sources, such as the national studies.

The statements were grouped into three general areas having nine to sixteen items each, for a total of 35 items. The three group headings were: 1) Planning and Evaluation, 2) Research and Exemplary, and 3) Curriculum.

Groups of experts were assembled for each area. Each area was responded to by different expert groups through two rounds of the study. Each expert group responded to from 9-16 items in each category.

The top 10 items ranked in descending order of priority were:

1) Improve the planning process so that goals for new programs, expanded programs and student enrolment better fit labor market needs.

2) Increase efforts to evaluate vocational program effectiveness in relation to quality standards.

3) Conduct a follow-up of former vocational students three to five years after leaving the program.

4) Survey employers of former vocational students to determine their opinion as to the former students' success on the job.

5) Determine the extent to which approved vocational education programs influence the secondary school retention rate.

6) Determine the effects of vocational education programs on the reading, writing, speaking and computational skills of students.

7) Develop a curriculum library, review and evaluate available materials and publish a curriculum newsletter to keep all teachers informed.

8) Improve the present secondary school and community college evaluation system, and/or processes.

9) Accelerate the collection of vocational curriculum materials to consider adapting in lieu of developing new materials.

10) Develop secondary vocational programs curriculum materials, focusing on modularization or other avenues to effect individualized instruction.

It seems that the list generated by this project contains a mixture of needs statements, solutions and

problems. The study seems to fall into the categories that were declared in-appropriate for needs assessments by the authorities cited in the first part of this literature review. The results do, however, indicate general directions for further research and review. No indication of the impact of the project, or of the use it was put to, was given.

Overview

To present an overview of the findings reported by the national and state studies the results are presented in an abbreviated form in Table 4. Table 4 presents the major goals and need statements in descending order of priority. Due to the different sources of the statements, the wording of the statements has been altered to facilitate their presentation in a table format; however, every effort has been made to retain their intent. The top ten statements are presented in each case with the exception of the 1980 American Vocational Association (AVA) and National Center for Research in Vocational Education (NCRVE) study. The frequency of selection on the remaining statements in that study was so low that they cannot be considered in the same light as the first seven (Newton, 1980).

As can be seen from the table, several areas of concern are common to all the studies. They are as follows:

1) Linkage with business and industry with respect to:

Table 4

Summary of Needs Statements in Descending Order of Priority.

Overall Ratings of all Populations Participating in the Studies.

Large cities Study Adams 1977	National Study Morrison 1979	AVA Membership Survey 1978	AVA NCRVE PD priorities 1980	Minnesota Survey of Voc. Ed. Needs 1978	Oregon Select Areas Improvement 1980
1) Provide a more adequate funding base. 2) Comprehensive guidance and counseling for career & program selection. 3) Insure relevance of curricula to current industry and business needs. 4) Improve basic skills reading communication and math. 5) Improve job placement in areas related to training. 6) Communicate benefits of voc. ed. to community. 7) Improve opportunity for work experience in community and school. 8) Upgrade curriculum and materials. 9) Make guidance and counseling more accessible. 10) Better coordination with business, industry and labor.	1) Collaboration with business, industry & labor. 2) Communicate benefits of voc. ed. to the community. 3) Insure relevance of curriculum to current industry & business needs. 4) Evaluate voc. ed. more effectively. 5) Improve voc. ed. to meet the needs of adults. 6) Comprehensive guidance and counseling for career and program selection 7) Improve basic skills reading communication & math. 8) Improve data for planning and evaluation voc. ed. 9) Improve in-service upgrading of personnel. 10) Improve guidance placement and follow-up of students in industry and business.	1) Communicate benefits of voc. ed. to the community. 2) Use business, industry and labor resources effectively. 3) Upgrade curriculum to the needs of employers. 4) Involve the community in voc-ed. 5) Improve linkage between voc. ed. and general education. 6) Upgrade teaching skills to current requirements. 7) Improve program planning to meet the needs of employers. 8) Encourage students to remain in school. 9) Provide guidance and counseling for career and program selection. 10) Improve students school to work transition.	1) Use business, industry and labor resources to improve quality and availability of voc. ed. 2) Improve students transition from school to work. 3) Strengthen voc. ed. role in development creation of new jobs. 4) Upgrade basic skills through voc. ed. 5) Develop performance measures for voc. ed. skill areas. 6) Use federal and state funds for program improvement. 7) Implement program standards in voc. ed.	1)Provice opportunities for all vocational students to acquire the basic skills. 2) Increase collaboration with key segments of the employment community. 3) Better communicate the benefits and content of voc. ed. to community. 4) Insure relevance of curriculum to current business and industry needs. 5) Improve opportunities for in-service voc. personnel to up-grade their skills 6) Improve voc. ed. for individuals who are adults. 7) Finance voc. ed. more effectively. 8) Ensure that pre-service prep, of voc. ed. personnel meets present and future needs. 9) Assist students with special problems 10) Improve voc. ed. for students who are handicapped.	1) Improve programs expand programs and enrolment to better fit employers needs. 2) Improve evaluation of voc. ed. in relation to quality standards. 3) Conduct follow-up of voc. ed. graduates. 4) Survey employers to obtain evaluation of the graduate of voc. ed. 5) Determine the effect of voc. ed. on drop-out rates. 6) Determine the effect of voc. ed. on basic skills. 7) Review & evaluate current available curriculum materials. 8) Improve voc. ed. evaluation systems. 9) Improve collection of curriculum materials to consider in lieu of developing new materials. 10) Develop curriculum materials focusing on individualization of programs.

student placement, curriculum and program, and work experience takes highest priority.

2) Basic skills with respect to communication, reading, writing, and related mathematics.

3) Evaluation of programs and student performance.

4) Guidance with respect to job placement and program selection.

5) Relations and communication with the parents and the community at large appear in five out of the six studies.

The Florida and Missouri examples of objective needs assessment were almost entirely directed toward aligning the output of vocational education with the demand in the business and industry sector of the economy. The premise under which they seemed to operate was that it is the responsibility of the vocational education system to train and produce employees in strict accordance with the needs of the employment community. The Vocational Education Amendments of 1976 in the United States certainly point in that direction.

> "Funds are to be distributed by the state to eligible recipients on the basis of annual applications which describe the vocational education needs of potential students in the area of the community served by the applicant and it must be indicated how, and to what extent, the program proposed in the application will meet such needs."

(U. S. Department of Health and Education and Welfare, 1977, p. 134).

It appears that subjective needs assessments such as

the Adams and Morrison studies could be employed to point out general areas of need. These results could then be used as indicators for further research in more specific areas. The objective needs assessments could then follow-up to accurately define specific needs on a local and regional level in needs areas pointed out by the subjective studies.

General Summary of Problems and Limitations of Needs Assessments

It is apparent from the literature that the needs assessment process has many problems and shortcomings associated with it. A selection of these problems inherent in both objective and subjective approaches are listed below:

1) Needs assessments are usually based around a set of general educational goals. These goals are often so general that placing them in priority order through assessment procedure often reveals little more than common sense would have.

2) Needs assessments generally priorize needs using measures of central tendency. This process usually brings popular needs to the top of a priority listing leaving more unpopular, but perhaps equally important needs, toward the bottom.

3) The use of five point Likert type scales on most instruments, together with the use of measures of central

tendency, tends to cluster the needs into a narrow range from 2.5 to 3.5. This makes it difficult and arbitrary to distinguish the relative priority of the needs.

4) Many needs assessments rely on people's perceptions about the current status of their programs. This may not reflect the actual situation. Individuals may lack accurate and complete knowledge about the status of many areas that they are being asked to pass judgement on.

5) In using objective information, measurement error may be increased if test scores are collected for the "what is" dimension and a rating scale is used for the "what should be" dimension. The test data must be converted to a similar scale as the rating scale to make comparisons possible. Error will likely occur in this conversion.

6) Discrepancy scores used to establish priorities magnify error if either the "what is" or the "what should be" dimensions contain inaccuracies. Even if both sets of data have reasonably high validity, the discrepancy score will magnify any existing error.

7) If the ratings on the "what is" dimension and the "what should be" dimension are collected at the same time, to save money, the process will tend to have a low validity. Rating each item in two dimensions becomes frustrating for most respondents, particularly if the instrument is long.

8) Discrepancy scores are difficult to communicate to lay audiences. Attempts at explanation may become too

technical. (Adams, 1978, Kominski, 1978, Jenkins, 1975).

Possible Solutions to Some of the Problems

1) Clear and measurable needs statements should be derived from expert sources (Kominski, 1980). The National Center for Research in Vocational Education has accumulated an extensive resource of needs statements that were validated and used in numerous studies. Statistical data on each of the items is available. In this way it may be more likely that valid educational data will be obtained rather than the unrealistic desires or wants of a special interest group.

2) Collect both general and specific information about each need:

Example: general statement

Provide comprehensive guidance and counseling service so that vocational students can better select careers and educational programs suited to their ability.

specific statements

a) Counseling prior to enrolment to assist students in clarifying their purpose for enrolling in vocational education and selecting the right program.

b) Pre-vocational orientation and exploratory programs for junior high-school students to introduce them to career clusters.

The specific need can be more easily translated into

effective action. The general need can be used for major policy or funding information (Adams, 1978). In addition the specific needs can provide additional indicators as to the priority of the general statement.

3) The use of only one scale can considerably reduce the complexity of the instrument and help reduce some of the problems associated with it. The use of one scale should:

a) improve the return rate by making the instrument quicker and easier to complete.

b) improve the accuracy in reducing the frustration level that a two scale instrument seems to cause.

c) reduce the error magnification that discrepancy scores seem to cause.

d) data analysis and reporting of results are simplified (Adams, 1976 and 1978).

e) The correlation between the priority ranking obtained by the use of discrepancy scores between "what is" and "what should be" and the priority ranking obtained by a single scale approach in the "what should be", dimension is very high (Jenkins, 1975).

Conclusion

Kaufman makes a number of points which deserve attention in summing up major concerns of needs assessment.

1) A needs assessment is never completed. It must be a

continuing affair, and changes in needs are to be expected.

2) A discrepancy analysis is the documentation of a measureable differnce between current and desired state of affairs. It is not enough to guess either where we are or where we should be --" we require hard empirical data for both polar positions of a need."

3) A need is not a solution. Pre-conceived solutions must be left out of statements of discrepancies, or they bias the outcome and restrict the use of innovative or creative ways to solve a problem.

4) In setting priorities on need areas, they might be judged by two criteria: (a) what does it cost to meet the need, and (b) what does it cost to ignore the need?

5) Be sure all partners to the educational endeavor are involved in the selection of needs and the decisions about them.

6) Never select instruments that place blame on any group, or that could be used to do so.

7) Reconcile discrepancies among viewpoints of different groups.

8) Outcomes for the future as well as for the present should be included, since "we should not attempt to capture the status quo and derive an education system to maintain that status."

9) It should be recognized that needs assessments is only a beginning (Kaufman, 1972, Chapter 3).

Needs assessments can be phenomenally useful in program and policy planning, in evaluation, and in the optimal allocation of scarce resources. By their nature and because of what they study, they are difficult to do well. They usually work in a politically charged environment, dealing with problems, that by the very nature of the need for needs assessment, are poorly defined (Benson, 1978).

Politics are part and parcel of the needs assessment process and will be defined by and be part of whatever system politics are dominant. Depending upon the balance of power and the trust which has developed between the system coalitions, needs assessment will be more or less successful (English, 1978). This particular issue is clearly beyond the technical competence and integrity of the educational researcher. Politics in education will make needs assessment, as in the case of all other research tools and strategies, an imperfect mechanism. The attractive part of needs assessment is that it is part and parcel of a more generic process of a systems approach. Its deficits are knowable and correctable (Kaufman, 1972). This will to make corrections is, however, a political problem involving power and influence.

CHAPTER III

PROCEDURE OF THE INVESTIGATION

Design of the Study

The design of the study follows a descriptive survey pattern employing a combination of data collection techniques; thus ensuring a maximum return of information. To answer the questions posed in Chapter I the following three part procedure was developed; (1) determine the needs of vocational industrial education in Manitoba, (2) prepare a comparative analysis between the Manitoba assessment of vocational industrial needs and the results of similar studies in the United States, (3) collect data dealing with the West German vocational industrial education system to obtain information and techniques that could satisfy the needs established for the Manitoba system.

The approach employed to ascertain the needs of industrial vocational education in Manitoba, is based on the concepts and techniques developed at the National Center for Research in Vocational Education, The Ohio State University.

Manitoba Population and Sample

To ascertain the perceived needs of vocational

industrial education in Manitoba a needs assessment instrument was developed and administered to all secondary vocational industrial teachers, counsellors, and supervisors. A similar instrument with identical items, but different background information was administered to the membership of the Winnipeg Chamber of Commerce.

The total population of vocational industrial teachers and supervisors in Manitoba is approximately 330. Since the population is relatively small, a total population survey was feasible and yielded the most valid results. The Manitoba Department of Education supplied an accurate listing of the educator population.

The industry and business portion of the survey took the form of a convenience sample. The Winnipeg Chamber of Commerce considers itself as being representative of Manitobas' industry and business and has a mailing list of 1500 members.

Data Collection

The investigation was initiated by the Manitoba Department of Education with a letter to all superintendents responsible for vocational education in their school divisions. The letters were followed by telephone calls to the superintendents by the investigator. The purpose of the telephone calls was to obtain permission to approach the individual schools (see Appendix L). Arrangements were made

to meet the staffs of the schools at a specified time and location.

The needs assessment instrument was administered during February and March of 1981 by the investigator or his representative to supervisors, teachers and counsellors in vocational secondary schools having more than five vocational industrial teachers. This proceedure reached approximately 90% of the educator population. The method maximized the number of returns and reduced the cost of the study. The remaining 10% of the educator population was approached by mail and subsequent telephone follow-ups.The Educator population returned 271 completed questionairs. This constitutes a return rate of 80%.

The Chamber administered the needs assessment instrument to its member organizations through a mail survey. The Chamber mailed 1500 questionnaires to its members and member organizations, of these 105 were returned. This constitutes a 6% return rate. In spite of the low return rate the management of the Chamber feels that the number of returns exceeds the usual return rate for membership surveys conducted by them. The management estimates that the actual return rate is approximately 16%. Some member organizations returned a consensus questionaire representing the opinion of the organizations. (For number of returns and description of the populations see Appendix A)

Instrument Development

The items selected for the instrument were primarily obtained from an extensive collection of items developed at the National Center for Research in Vocational Education, The Ohio State University. The items have been validated in a number of national studies in the United States; Vocational Education Program Needs in Large Cities (Adams, 1977), National Survey of Vocational Education Needs (Morrison, 1979),American Vocational Association Membership Survey (AVA, 1978 and 1980) and Vocational Education Needs for the Eighties(Adams, 1981).

Approximately 120 items were selected, in accordance with their suitability in form and language to the Manitoba environment. Some items were modified to adjust the semantics to Manitoba use, i.e. province replaced the word state. Additional items were generated to ensure compatibility with the Manitoba situation. The items for the instrument were then categorized into eleven categories, based on the categories developed by R.C. Dreyer in 1978 for the Minnesota Survey of Vocational Education Needs. The categories were:

(1) Special learner groups: the handicapped, foreign language problems, cultural differences i.e. Manitoba natives, inner city residents , rural problems, sex bias.

(2) Planning and evaluation: program design and goals,

evaluation of existing programs, deletion and addition of programs.

(3) Student services: needs of students with respect to career planning and guidance, transition from school to work, work placement,and school organization.

(4) Curriculum and program development: curriculum delivery methods related to flexibility, academic vocational co-ordination, requirements of industry, addition of valid innovations, and co-ordination with advances in technology in industry.

(5) Staff development: pre-service and in-service teacher training and up-dating in new techniques and content.

(6) Curriculum content: vocational industrial courses with respect to: relevance to current job opportunities; clustering of similar skills for various trades, and maintaining content standards.

(7) intra-inter-agency communication: co-ordination between the schools and industry, pre-secondary schools, post secondary schools, parents, community, Department of Education, and manpower agencies.

(8) Staff utilization: teacher recruitment, teacher retraining, counsellor training, student teacher ratios, support staff.

(9) Management: plant requirement, equipment replacement and repair, communication with chief

administrators such as area superintendents.

10) Student and behaviour problems: special problems such as financial need, negative attitudes, program changes.

11) Safety: the requirements of the plant and courses to ensure the safety of participants and curriculum content with respect to safety training in the workplace.

The Minnesota survey utilized the items generated for the national U. S. surveys mentioned previously (Adams, 1977, 1978, 1980, 1981, Morrison, 1979). (for items listed by category see Appendix I)

Panel Review and Field Testing

To ensure the face validity of the survey instrument, a provisional list of items and categories was submitted to a panel of experts. The panel was asked to respond to the provisional needs assessment instrument and to suggest modifications. (For a list of the members of the panel see Appendix B) Their opinions were solicited by a questionnaire having the following items:

1) Suitability of items:

a) Language, (clarity of statement, reliability of terminology).

b) Additions, deletions and modifications.

2) General format:

a) Time required for completion.

b) Ease of response.

3) Additional comments and/or suggestions.

In accordance with the feedback from the panel, the instrument was modified and the items were then distributed randomly in the instrument to prevent a bias toward any one category. The instrument was field tested by three industrial vocational instructors and one vice-principal. The field test participants responded to the same instrument as the panel. The needs assessment instrument was further modified as a result of the field test.

The final version of the instrument is in two parts (see Appendix C). Part one contains 76 items with a response scale that is identical to the scale employed by the National Studies in the United States (Morrison, 1978, Adams, 1978 and the Minnesota Study, 1978). The respondents were asked to respond to a five point Likert scale; the number 1 corresponding to low priority of need and the number 5 indicates a high priority of need. The identical response scale will allow direct comparison with the United States studies. The instrument was designed to provide easy data entry. The data need not be transferred to an intermediate instrument. This design saved time and enhanced accuracy. After rating the 76 items, the respondent were asked to re-read the items and circle five item numbers of the statements which in his/her opinion most urgently require attention. This is defined as the second round of rating the needs statements. The respondent was

then given an opportunity to add any needs not stated in the list of 76 items. Part two of the instrument required the respondents to supply background information. The industry and business portion of the population were asked to respond in terms of industrial classification, occupation, gender and experience. The industrial vocational teachers and supervisors received an instrument with a different part two. They were asked to respond in terms of title (principal, teacher, etc.), teaching area, gender and experience. Part two of the instrument produced a profile of the respondent to facilitate the analysis and consequent answers to the operational research question.

The completed instrument was then submitted to the Ethics Committee Faculty of Education of the University of Manitoba for Human Subject Clearance.

A preliminary report of the results was made available to all participants and sponsors in January of 1982. This procedure was requested by the participants during the initial negotiations to provide feedback data as rapidly as possible. At subsequent meetings with teachers, superintendents, principals, counselors and Department of Education officials the results, implications, and possible conclusions were discussed. The participants, at these meetings, were asked to respond to the report in accordance with a questionnaire which was included in the preliminary report. (see Appendix M) There was consensus at these

meetings, that the instrument did in fact isolate the most serious needs of vocational industrial education in Manitoba. A similar procedure was followed with a committee of the Winnipeg Chamber of Commerce. The results of these meetings were much the same as the meeting with the educators; the members, however, expressed a certain amount of impatience with the study. In their opinion, the results pointed out the obvious and what was needed was concrete action along the lines suggested by the results.

Reliability

The SPSS computer programs for Reliability were employed to compute the Cronbach Alpha Reliability Coefficient for each of the eleven categories of the questionaire. The Cronbach Alpha Reliability Coefficient was selected because of its suitability in determining the reliability of instruments that have multiple scored items, such as the Likert Scales employed in this survey (Ghiselli, Campell & Zedek, 1981). The coefficients ranged from a low value of .50 for the category of Curriculum content, for the Educator population, to .88 for the category of Special Learner Populations for Industry and Business. The overall coefficient for the educator population was .71 and for the Industry and Business population it was .76. (for a complete listing see Appendix N). Considering the wide range of the background of the populations involved, the

reliability of the instrument is acceptable (Anastasi, 1976).

Development of the German Interview Schedule

The West German component of the field study was carried out with a personal interview schedule. The interview schedule was prepared to correspond to the needs assessment categories developed for the Manitoba instrument. It was designed to gather data describing the structure of the West German vocational education system and to search for possible solutions to the needs that were expressed by the Manitoba survey.

The schedule was then translated into German and mailed to Dr. Bruckner, President of the Bavarian Phylology Association (Philologenveband) for validation and correction. The instrument was then modified in accordance with his suggestions. (see Appendix E)

The initial contact with the West German Authorities was made in the fall of 1980. Further contacts were made with the assistance of Dr. E. Norton of the National Center for Research in Vocational Education, The Ohio State University (see Appendix F). These contacts yielded a number of institutions and individuals responsible for vocational education. Correspondence with these contacts produced a considerable amount of literature. On the basis of the literature and correspondence, an itinerary was

established for a subsequent 47 day data gathering visit to West Germany in April, May and June of 1981. During the stay in Germany the itinerary was expanded with additional visitations at the suggestion of the German hosts. (For a complete listing see Appendix G). The duration of the visit was from April 21 to June 7, 1981.

The revised interview schedule was included with the final correspondence before departure for West Germany. In all cases the hosts were well prepared for the visits and interviews. An initial attempt was made to use a recording device during the interviews. The device, however, inhibited the hosts and was abandoned in favour of notes. In some cases the subjects asked for a guarantee that they would not be quoted directly.

Analysis

The 76 need statements from the Manitoba survey were analyzed principally on three levels: employing the SPSS computer programs "Condescriptive" and "Crosstabs". The first entailed the calculation of summary statistics for each item in the survey, by Job position of the vocational educators and for all vocational educators combined. Secondly, a similar analysis was performed for the five most crucial needs identified by the respondents on the second round of rating the needs statements. Thirdly, the 76 statements were grouped into clusters or categories and the

analysis was repeated for the total educator population and by position. The returns from the industry component of the survey were analyzed in a similar manner. However, no sub-populations were identified for individual analysis.

The three levels of analysis were employed for the purpose of:

1) ranking all 76 statements as to degree of need,

2) isolating the statements that were deemed to be the most crucial by the respondents,

3) identifying more general problem areas composed of similar specific needs statements.

The second round, in which the respondents were asked to re-read the questionnare and select five statements that in their opinion required the most urgent attention, was particularly useful in establishing the priorities of the needs. In many cases the second round confirmed the pattern established by the means of the first round.

The analysis employed here is consistent with the procedures established by other major needs assessment (Adams, 1977 and 1981), (Morrison, 1979,) (AVA, 1978 and 1980), (Dreyer, 1978). Further statistical treatments to determine whether or not the differences in means between the populations were significant were considered. However, a statistical significant difference in means does not assure a practical difference in opinion. In view of the stated purpose of this study and after consultation with Dr.

J. Kesselman of the Faculty of Education of the University of Manitoba, further statistical analysis of the data was deemed unecessary.

CHAPTER IV

VOCATIONAL EDUCATION IN THE FEDERAL REPUBLIC OF GERMANY

Introduction

The purpose of the West German Field Study was to obtain an overall understanding of the system in place to deliver industrial vocational education in that nation; and to identify what solutions or systems have been employed to satisfy needs that are similar to those that have been identified in Manitoba.

The findings are reported in two sections: The first deals with an overall description of the West German vocational education system. The second, summarizes the responses to the eleven categories of needs statements as solicited by the interview schedule.

General Characteristics of the West German Vocational Education System

The Federal Republic of Germany is a federal state. Therefore, all educational matters fall into the responsibility of each Federal Land as part of its sovereign rights. Vocational education, however, is governed by a

dual authority, Land and Federal, -- Federal for the industrial and business component and Land for the Vocational school component. Over the centuries a tradition has evolved that requires industry and business to carry out the vocational training and to ensure a succession of skilled workers. This training is governed by a series of Federal statutes -- the most recent of which was the Vocational Training Act (Berufsbildungs Gesetz), 1969. This law applies exclusively to on-the-job training and not to vocational schools (Berufschulen). The vocational schools are governed by local and land regulations.

The law provides that youth up to 18 years of age shall be trained exclusively in a recognized training occupation. Regulations establish the details for this training, thus guaranteeing a standard training level throughout the Federal Republic. The system recognizes 456 training occupations which represent the basis for more than 40,000 adult occupations and guarantee that the demand for qualified replacement is covered. This type of training is regulated by an occupational training contract between the trainee and the trainer. A standard form for this is used throughout the Federal republic. The responsible authorities are usually the Chambers of Industry and Commerce, Chambers of Trade, the Chambers of Agriculture, and the Chambers of the various professions.

An employer and a member of one of the various chambers

is only permitted to carry out vocational training if the instructors are qualified. This generally means that the instructor must hold a Masters Certificate, which includes pedagogical training in his or her profession.

The curriculum and general training guidelines are prepared and evaluated by the Federal Institute for Vocational Education and Research (Bundesinstitut fuer Berufbildung und Forschung B.I.B.B.). As a rule the training period of a youth will last three years. Some occupations have longer or shorter training periods depending on the specific requirements.

A youth makes a career decision during his ninth year of school at an approximate age of 15. At this point, he or she must decide whether to follow a vocational stream or continue on to an academic sequence. However, combinations of the two are possible in some lands, i.e. Berlin, Nordrein, Westphalia. If he/she decides on a vocatonal path, the tenth school year may be entirely spent in a vocational school where the basics of a large group of occupations, i.e. the metal trades are taught; and then enter into a contract with an employer in the eleventh year; the youth may also enter into a contract with an employer immediately and spend four days a week in training and one day in a vocational school. The trend currently is to establish the tenth year as a basic training year in the vocational schools.

All placement and allocation of the trainee positions in Industry and Business is co-ordinated by the Federal Manpower office. The Manpower Office has a monopoly on all career guidance and placement in the Federal Republic. Each region has its fully equipped guidance centers and provides guidance in the schools with the assistance of the teaching staff.

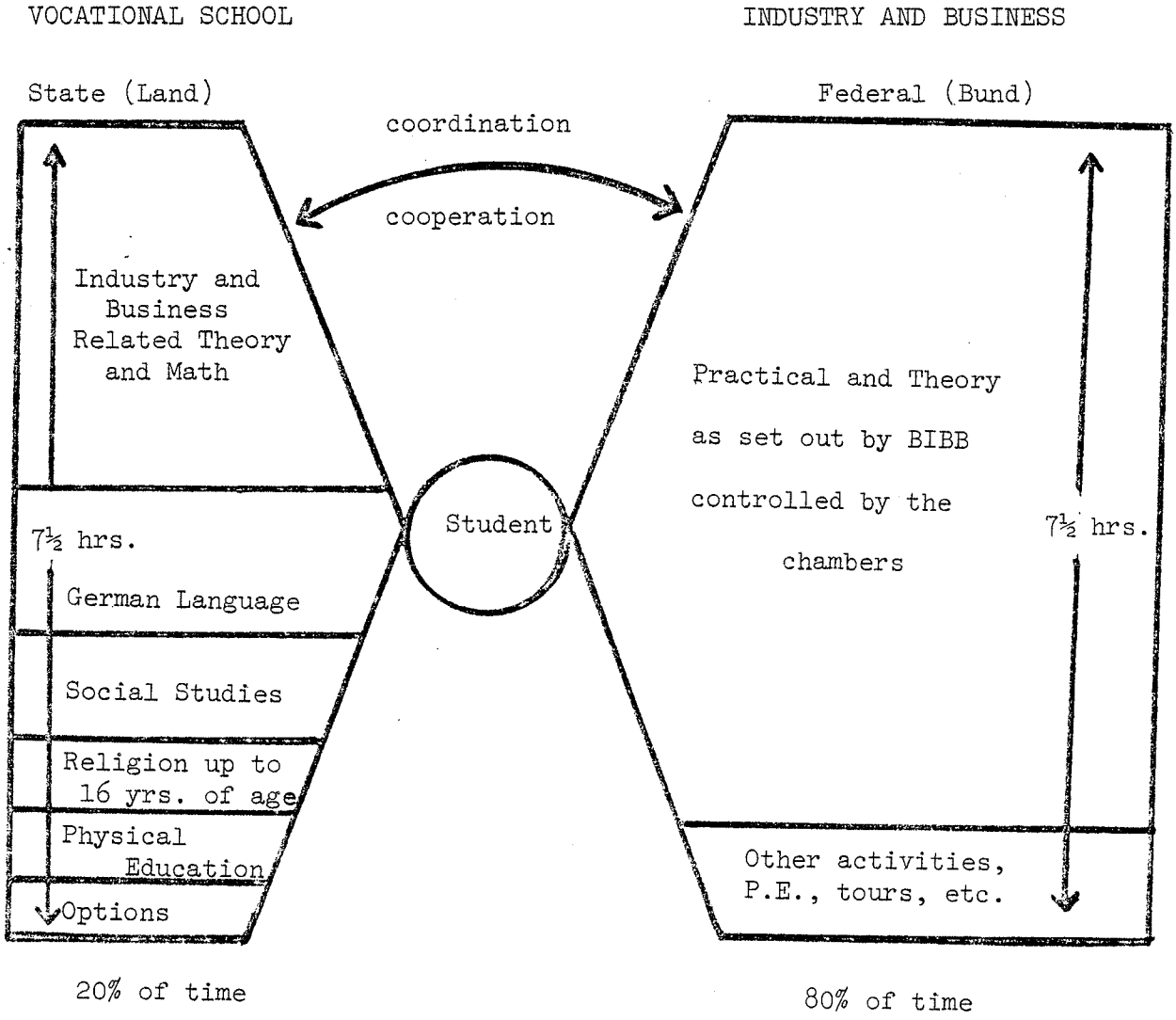
The Dual System

The quality of the vocational education system characterizes itself through its dependence on industry and business for the practical training which is, as mentioned previously, regulated by federal statutes. This is combined with simultaneous compulsory attendance one day a week in a vocational school, operated and administered by the land. Figure 3 illustrates this concept:

The purpose of the vocational school is to provide the theoretical background for the practical aspects of the trade that are provided by industry and business. The format of the vocational school component varies from school to school. In some schools the student attends once a week, in others blocks of time lasting up to a month, depending on the requirements of the school and the particular trade. In addition, to the theoretical background to the trade, the vocational school provides some practical work to emphasize particular important concepts. It is also the

FIGURE 3

RELATIONSHIP BETWEEN LAND VOCATIONAL SCHOOLS AND TRAINING BY INDUSTRY AND BUSINESS



responsibility of the school to continue the education of its students in such basics as German, mathematics, social studies, physical education, and religion. Religion becomes optional after the age of 16. The schools offer other options such as a foreign language, usually English, and related science. The school day is generally seven hours long. The curriculum of the technical component of the vocational school is co-ordinated by the instructors from industry and business and the teachers of the corresponding school.

Administration and Control of the System

It is typical for the German system of dual training, that advisory services and supervision of the programs; as well as the important examinations and administrative functions, are not a responsibility of the Federal and Land governments but are implemented by self-administered organizations of business and industry. These organizations are the various chambers mentioned previously. These chambers are organizations subject to federal and land laws that carefully spell out and define the responsibilities of the chambers with respect to education. The statutory regulations for the practical implementation of vocational training are decided by the vocational training committees of each chamber. These committees include six representatives of the employers, six representatives of the

employees and unions and six representatives of the teachers from vocational schools. The teacher representatives, however, have no voting rights. They serve in an advisory function only. The chambers register and supervise each training contract that is signed. The chambers issue the completion certificates, such as the journeyman certificate and masters certificate.

The Federal Institute for Vocational Education (BIBB) exercises an indirect control over the entire system. The BIBB, in co-operation with industry, business and the land educational authorities, determines the curriculum and standards employed by the industry and business components. The schools, although responsible to the land authorities, must align their methods and curriculum with what is being done in industry.

The Industrial and Business Component

Industry and business provide the vast majority of learning stations for the youth. At the present time (1981) the number of stations available exceeds the number of young people seeking positions. Some regional discrepancies do exist in thinly populated areas. Federal regulations and incentives ensure the avilability of stations (Promotion of Training Stations Law 1976 -- Auschildungsplatzfoerderung Gesetz, 1976). The large corporation, such as Siemens, carefully manage their human resources and co-ordinate their

intake accordingly. Most of the large companies operate their own educational institutions in which they train their young recruits. The teachers in these institutions are master craftsmen that have received pedagogical training; in fact the atmosphere in these schools is similar to that of a normal school. Close contact is maintained with the home. Time is set aside for sport and recreation, various special incentive courses such as mountain climbing and first aid. International exchanges and monetary incentives are offered to students for above average achievement.

The students receive minimum pay determined by law, during their training. The maximum pay varies from company to company with some paying almost double the minimum required, with others paying the minimum. The minimum pay increases in yearly increments as the student progresses through his training. Siemens, for example, pays a first year student 486 DM per month; a second year student 539; a third year student 612; a student in his final year receives 665 DM per month. Once a student has passed his final chamber exams he/she receives approximately 1600 DM per month.

In the first year of training the student spends almost his entire time in the company school. In the second year some of the time may be spent at work stations in the complex; however, the student is not used for production work. Each student is assigned to a master whose

responsibility it is to introduce the student to his work place. The student is rotated through various stations related to his trade during this time. In the third year the student may receive some responsibilities at the various stations, the process of integration becomes a serious matter. At this point the decision as to whether or not the student will be placed on staff, if he/she so desires, is generally made. The industry schools work in close co-operation with the vocational schools. Problems such as attendance, punctuality, and work habits are reported to either place. In some Lands monetary fines may be imposed by the schools for non-attendance. In the case of extreme infractions the students may lose their position with the company and have their contract cancelled.

Industry supplies approximately 50% of the training stations, the remainder is supplied by service stations, maintenance and repair shops, hotels, restaurants, and other small businesses. The individual business cannot operate schools in the same manner as the large industries. The problem is solved by their respective chambers who operate schools supported by their membership: each employer sends the students in his care to these chamber schools. The funding for these schools is shared approximately equally by the chambers and the federal government. The students who attend chamber operated schools take part in the actual production at a much earlier time. There is some criticism

that the students are exploited by these firms. The chambers, however, maintain an inspection system and the unions also exercise considerable control and influence. There are abuses by the employers, as became apparent in discussions with school and chamber personnel, but a genuine effort is being made to keep these at a minimum. The abuses seem to occur chiefly in the small business sector. The small shop must work efficiently to remain viable and the training costs place a much heavier burden on them. This then increases the temptation to use the student in a profitable setting and to overlook training requirements. The small business may also be specialized in a small area of the trade and may not be able to supply all of the experiences required by the BIBB. The chamber school is designed to overcome some of these difficulties and does provide some of the necessary experiences. The vocational school also assists in this process.

Cost of Training to Industry and Business

The average current cost per training space per year is approximately $6,000. Approximately $2,400 are returned through productive performance during on the job training. The greatest factor in the cost of occupational training, amounting to about 50% of the total, is the training salary paid to the students. Approximately 20% to 30% of the training cost is attributable to salaries for instructors,

while the remainder is expended for training materials. To the question of why industry and business incur these costs voluntarily, the answers were always similar.

1) The long term benefit of having a skilled labor supply available far outweighs the cost.

2) The selection of the best trainees for permanent staff improves the productive capacity of the organization.

3) The availability of trainees familiar with the organization ensures orderly succession of manpower and eases human resource planning.

4) The young age of the trainees and their receptiveness makes them much easier to train than a mature individual who is set in his ways.

5) It is a tradition and a social responsibility of industry and business to do its part in the social fabric of the nation.

The last statement seems to be one of the more compelling reasons. It is a matter of prestige to be permitted to train students. To have a reputation as a good trainer reflects well on the business as a whole.

Industry and business recruits its students in the spring of each year. Some locations are more desirable than others; particularly those with good reputations, for example, FAG Kugelfischer in Schweinfurt, a large rollerbearing complex employing 12,000 persons, has a highly desirable program. They receive approximately two times as

many applications as they can accomodate. The company utilizes admittance examinations to select desirable candidates for their operation. The examinations are in three parts -- German proficiency, mathematical ability, and space relations. The admitted candidates are placed into stations that are comensurate with their aspirations if school results and admittance marks indicate that they have good potential in that area. The drop-out rate in the system is minimal. All companies that were contacted mentioned rates of 1 to 2% over the three year period. The BIBB confirmed these figures. (Berufsbildungsbericht, 1980).

Student Distribution

The number of students that remain with the company upon completion of their training is relatively low. After three years only 23.1% are still with the company that trained them; 23% leave immediately upon completion of their training, 16.8% remain for one year, 13.1% remain two years, and 24% remained up to three years. In the opinion of the company personnel, there is no reason for concern in these figures as long as the standard of training remains relatively uniform across the nation. Young people are expected to seek different career opportunities and experiences. As long as the replacement has equivalent training, the varied experience may be an asset to the

company. The number of students that change their occupation after completion of training is approximately 11 to 16%. These changes involve a minimum of two additional years of training for the individual. The changes are generally in the direction of more prestigious and better paying trades or professions. (Berufsbildungbericht, 1980).

After the ninth year of public education approximately 80% of the youth enter the vocational system. The remaining 20% enter or remain in schools that lead to university. Of these students approximately 47.4% transfer to the vocational system some time between the 10th and 13th year. Of the students that completed the 13th year of the university entrance schools and have graduated, another 22% entered the vocational system. These tranferred students, depending on their standing at time of transfer would receive credit towards their vocational endeavours and their training time would be reduced correspondingly. (Berufsbildungbericht, 1980). The reverse process also occurs; students in the vocational stream transfer to the academic fields. The path whereby a student completes his vocational training and then enters a technical university through a by-pass-system (Zweiter Bildungsweg), is quite popular for engineers. This type of individual is sought after in the West German economy.

The Vocational Schools

The vocational schools are generally large regional complexes that specialize on clusters of related occupations. For example, all metal trades are covered by one school; another would deal with restaurant and hotel trades. In areas of sparse population and industry the schools have student residences attached and student living and travel subsidies are provided.

The schools have a number of functions. The primary function is to provide a portion of the education for students that have signed a training contract with a firm. The second function is to provide a basic year of vocational education where necessary. A third function that is provided by some schools is to fill a gap in industry; this occurs in highly specialized areas where no training stations are avalable or regional disparity offers insurmountable obstacles. In these cases the entire training is carried out by the school. The student may then be required to participate in a subsidized practicum in another part of the country. These cases, however, are the exception. At the present all lands are participating in experiments in which comprehensive schools are being organized, similar to the North American models. These schools theoretically make it possible for a student to attain a standing in the vocational system or the academic system, or both simultaneously. This aspect may be of interest to Manitoba since it combines the dual vocational

system with comprehensive schools similar to those already in existence in Manitoba.

The Teachers in Vocational Scools

The teachers are trained by the Universities and have an academic background. The prospective teacher must graduate from grade 13 from an academic high school (Gymnasium). This is followed by four years of university training, and one year must be spent in practical training in the general group of trades in which he/she wishes to instruct. The prospective teacher must then write a state examination; the successful completion of the state exam will allow him/her to instruct in the Land schools. The first two years of teaching are considered intern or trial years with minimal pay. If these trial years are successful the candidate becomes a state employee (Beamter). This title is quite prestigious. A "Beamter" becomes a permanent employee of the state who holds a lifetime contract. The renumeration of the permanent teachers compares very favourably with Canadian salaries. The West German teachers may well be among the highest paid teachers in the world. The most desirable teacher, in view of the administrators of the vocational schools, is one who has completed his/her trade training in the system and who has then completed the academic requirements to qualify for the title of "Beamter". These individuals generally rise quickly in the hierarchy.

The schools are also staffed by a second class of instructors. These are individuals that have attained the masters title in their trade. These instructors are responsible for the training laboratories in the schools where they maintain the equipment, set up demonstrations, and demonstrate the concepts required by the teachers. These instructors are theoretically not permitted to teach; they can only assist the teacher. Their salaries are considerably below those of the teachers and they do not receive the "Beamter"status. The salaries for teachers with "Beamter" status, according to the 1981 contracts, (Besoldungstabellen, 1981) are as follows: the teacher salaries range from a minimum of 3074 DM per month initially, to a maximum of 5561 DM per month after 15 years of service. Added to the basic salary are considerable fringe and social benefits, such as medical and dental care. In addition to this, cost of living equalization payments are made to equalize regional disparities. These range from a minimum of 634 DM to a maximum of 1279 DM per month. A marriage allowance is added if the individual marries during the year or is married. This amounts to 1494 DM per month. There are other allowances, benefits and incentives built into the salary structure. The salary scale is in effect in the entire Federal Republic. The salary scale of the instructor ranges from a minimum of 2383 DM to 3784 DM per month, the additional benefits are similar to those of the

teacher.This differentiation in position and salary seems to be a cause of friction between teachers and instructors. This friction does not benefit the harmonious operation of the school according to some administrators; others see no problems.

Summation of Responses to the Interview Schedule

The organization of the responses is parallel to the needs assessment categories employed in the Manitoba survey.

a) Special Learner Groups

Since the early fifties West Germany has imported millions of foreign workers to reduce an acute manpower shortage. During the late seventies, West Germany was affected by an economic recession, as was the rest of the western world. The importation of guest workers was severely restricted and many returned to their home lands. Nevertheless, many remained - particularly those of Turkish origin. Estimates are that approximately two million Turks are currently in West Germany and have no intention of returning home. In fact illegal and legal immigration is continuing. Heads of families are bringing their families from Turkey to Germany. The cultural difference between the predominantly Moslem Turks and the West Germans is large; in addition, the Turkish families tend to be larger and possess strong family ties. This situation has created a large

youth segment that is not easily integrated into the German culture. The National Policy is to integrate the Turkish youth into the German society through the educational system. The educational establishment has responded by creating classes that are similar to Manitoba's English Second Language -- classes which form a part of the regular school system. The effectiveness of these classes is questioned by researchers. Educational authorities at this time have, in their opinion, no truly effective solution to the "Turkish Question". The goal, however, is strongly resisted by the Turkish minority. Many parallels may be drawn to Manitoba with respect to the problems posed by Manitoba's natives and ethnic minorities in the United States (Altschull, 1981).

Economic differences in the background of students seem to be less pronounced than in Canada. This may be due in part to the vocational education system which ensures that all youth receive training. (Vocational Training Act, 1967) The structure of the Act virtually ensures that each student receives sufficient monetary assistance plus a good opportunity to gainful employment. The Human Rights Legislation ensures equal access to training stations and consequent employment upon completion.

Some problems do exist with respect to male/female roles. The same legislation ensures access of females to all stations, but tradition and family pressures funnel

girls into training stations that have been traditionally reserved for females, such as hair dressing and sales staff in stores.

The handicapped attend special schools (Sonderschulen) -- integration attempts are minimal until the tenth school year. The handicapped are ensured a place in the training system by legislation. Industry is required to employ a certain quota of handicapped, depending on the number of employees. If the quota of handicapped employees is not filled, employers are assessed a considerable penalty. The proceeds from the penalties are used to help finance the care and education of the handicapped that require special institutions and education. It seems on occasion, according to educational authorities, to be a matter of policy for some industries to pay the penalty rather than to hire the handicapped. This action by employers reduces the number of workplaces available, but does ensure adequate funding for care and training. Once a handicapped person is employed, it is virtually impossible for the employer to release that person.

b) Planning and Evaluation of Vocational Education

The planning evaluation and research of the industrial component of vocational education is carried out by the Federal Institute for Vocational Education and Reseach (BIBB) on a national level. The institute has been

effective in standardizing the uniformity and quality of the training throughout the various agencies that work in co-operation with it. Publications on research and new developments are distributed to all concerned agencies and institutions on a regular basis. The institute also acts as a clearinghouse on a national level. No similar institution exists in Canada. In the United States a similar function is fulfilled by the National Center for Research in Vocational Education at Ohio State University. The curriculum and research for the vocational schools on a Land level is directed by the Land Institutes such as the State Institute for Curriculum Development, Teacher Education and Professional Development (Landesinstitut fuer Curriculumentwicklung Lehrerfortbildung and Weiterbildung) in North Rhein Westphalia. At times co-ordination problems seem to exist between the Nationl Institute and the Land Institutes; but there is a great deal of communication and co-operation. The benefit of this is passed on to teacher training institutions and the schools.

Because of the size of the system the time lag between the need for identificaton of a new program and the implementation is approximately five years. The numbers of autonomous agencies that have to be satisfied makes implementation sluggish and causes considerable frustration in industry and schools. Of the 456 programs some have not been officially revised since the nineteen thirties.

Industry, however, through its schools and training programs has maintained up to date programs that have little similarity with the official curriculum. This is done with the unofficial agreement of the authorities.

c) Student Services

Career counselling, as mentioned previously, is the monopoly of the Federal Manpower office. A national computer file is maintained by a large staff that is concerned solely with career guidance and placement. This trained staff visits all schools and counsels all students in their eighth and ninth school year. In many lands students are rotated through co-operating industries for periods of up to three weeks in fall in one area and another three weeks in the spring. The students are hosted by employees of the companies on a one to one basis. The program is followed up by considerable discussion in the schools upon the return of the students. Extraordinary care is taken to ensure that parents and students make informed and realistic choices for the tenth school year. The "Employment Shock" that seems to be experienced by North American youth upon entry into the work place does not seem to occur in the German system. This is largely due to the early entry into industry through the dual training system. When the student completes his/her training he/she has a working knowledge of the world of work and it's

expectations. The dual system also simplifies the employment search; since the greatest number of students are employed, if they so wish, by the company that trains them. The problem of the number and types of workers that is required by the economy is also solved by industry itself. Each company determines its own requirements for future manpower and offers training stations commensurate with its projections. According to various industry sources the demand has been met satisfactorily up to now. However, they anticipate serious shortages by 1985 due to a significant decline in the birth rate. It is anticipated that the companies will enter into serious competition to attract young people by 1985 (Zedler, 1980).

d) Curriculum and Program Development

The bulk of the vocational program is the responsibility of industry. Each develops a program suitable to its own needs, within the framework supplied by the BIBB. This framework is broad enough to allow for individual differences and initiative. The teaching methodologies are developed to suit the circumstances of each training station. The general techniques are controlled by the master craftsmen schools that are operated by the chambers. The techniques are suitable to each particular group of trades and have been developed for a particular purpose or skill that is derived from years of

development and experience.

Once a student has made a choice there is little flexibility in the system. If the student has signed a training contract he/she is expected to remain in the program until completion; little or no attempt is made to accommodate change. Upon completion of a training program, numerous alternatives are open to the student. These could be to remain in a trade, or to return to the school system to enter various academic upgrading facilities or technical institutes.

e) Staff Development Pre-Service and In-Service

The training of vocational teachers for the vocational school has been covered in a previous section. The in-service training from a Manitoba point of view, is inadequate. No set release time, provisions for sabbatical, or monetary incentives are available in most cases. Because of the permanent nature of the teaching position the teachers seem to show little incentive for retraining or change. If a position becomes obsolete the onus is on the state to find a suitable location for the teacher affected. Re-training, if the individual agrees, is at the expense of the state at full salary for the individual.

Those instructors active in the industry portion of the program are paid above the rate usual for mastercraftsmen. The prestige and working conditions make it desirable for a

mastercraftsman to attain the instructor position. Additional psychological and pedagogical training is supplied at the industry's expense. Instructor training policies are not uniform and vary from company to company. All, however, have the minimum competencies required by law. The industrial instructors' skills and knowledge remain current because of their close association with the work stations in their companies. Some firms require their instructors to rotate through their complex periodically to maintain their skills at a high and current level.

f) Curriculum Content

The basic vocational year that is currently being implemented in the vocational schools has a curriculum that is based on generic skills common to a group of trades. The groups and areas identified are similar to the work carried out in Canada by the Training Research and Development Station (Smith, 1977). There is considerable opposition to this basic year by industry since it reduces their component of the training by a full year (Kuratorium der Deutschen Wirtshaft, 1979). The trade unions, however, are in favor. They feel that the individual will receive a broader education and be more versatile in his/her endeavours. The school authorities are also in favor since this step tends to increase their influence. What the eventual result will be remains to be seen. This development should be viewed

with interest by the Canadian educators; the results could give directions to some of the problems being considered in Canada. The standards of competence expected of the students will remain in the hands of the chambers. The standard set by the examination committees of the chambers is high. Conversations with several graduates and with employers indicated that the training received by the students, in most cases, is above the level at which the graduates will be expected to work. The graduates expressed frustration at being expected to work at what they considered menial tasks and at not being able to apply their skills. The persons responsible for the system expressed the philosophy that it is best to overtrain and to produce an over-competent individual who is equipped to take on all situations. If the individual feels that he/she is working below his/her capacity, he/she will strive to improve his/her position. Whether this is in fact accurate is not born out by any research. Undoubtedly, this is a luxury that only a rich nation can afford. Undoutedly, a youth unemployment rate of 7%, which is high for West Germany, has a bearing on the training time.

g) Intra-Inter Agency Communication

The communication between industry, schools and business is very close due to the nature of the system. Each segment is dependent on the other for its successful

operation. The chambers supply the forum for the discussions; the examination and certification system requires the co-oparation of all members. The effect seems to be very beneficial for the student. Due to the co-ordination he is rarely the victim of inter-agency politics or jealousies.

Communications with post secondary institutions is less well co-ordinated. The post-secondary institutions seem to have more autonomy than their Canadian counterparts. However, the percentage of students involved with these institutions is considerably smaller than in Manitoba since the large majority of the youth remains in the vocational system. The well established examination system that is prevalent in the entire education arena fosters a much more autocratic structure than is the custom in Canada and the United States. Most of the communication is from the top down, with little input from the lower levels. The administration of all school systems is centralized on a Land level with a correspondingly large administrative structure that seems to have difficulty in responding rapidly to local situations. Teacher salaries in the schools are paid by the Land; buildings and equipment are financed by the municipalities with state assistance. In the case of vocational schools, considerable amounts of equipment and supplies are donated by the industries that work in co-operation with a particular school. For example,

the automotive trade school in Munich was supplied with installations from the BMW corporation.

(h,i) Staff Utilization, Plant Management and Operations

The staff to student ratio in vocational schools is maintained at approximately 15 students to one teacher in laboratory situations. In classroom situations the ratio is approximately 25 to one. It must be remembered that the teachers in the vocational schools are assisted by instructors in laboratory situations; these instructors also serve as classroom aides when required. In the laboratory then, the ratio of students to adults is approximately eight to one.

The administrators attempt to have teachers work only in their speciality area but as in most school situations the numbers and types of students do not correspond to the anticipated. Teachers at times have to work outside their area of expertise. The staffing of the schools often poses serious difficulty for the administrator. Because of th "Beamter" status of the teachers, it is very difficult to move teachers about or to have them take additonal training. All disciplinary actions or incidents beyond the norm must be cleared with the Land authorities. The lead time for staffing requests and for equipment requests seems to be at least one year. Several administrators expressed their

frustration with the bureaucracy. Building alterations require complex operations in the form of feasibility studies, rationale, etc. and since the buildings are funded by the municipal authorities, two levels of bureaucracy have to be satisfied. The end result is a large lag between the initial request for repair and for alteration and the actual occurrance of the event. The buildings are, however, very well equipped; finances do not seem to pose a serious problem.

The industrial and chamber schools maintain a ratio of one instructor to 15 students. At the work stations in the plants a ratio of one to one is maintained. Company policy determines the annual intake; this allows the administrators to control the student teacher ratios precisely. The controlled intake eases the staffing problems and allows the administrator to plan the staffing with much more accuracy than in the vocational schools. The instructors are rarely required to work outside their area of expertise. Company policy also determines staff training and placement consequently the operation of these schools appears to be considerably more efficient.

j) Student and Behaviour Problems

Since the students receive an allowance from the company and additional help from the Land if necessary, financial problems seem to be at a minimum. The company

supplies all necessary personal and safety equipment, including work clothing, and subsidized meals. A hot lunch may cost a student 1.50 DM and a breakfast break in a subsidized canteen is mandatory. The student's day is seven and one half hours long; generally beginning at eight in the morning. The attitude of the students seems to be positive. The instructors rarely have discipline problems. The students are treated as employees and breaches in discipline or poor work habits can result in cancellation of the contract. The previously quoted drop out statistics indicate that the system is effective.

k) Safety

Comprehensive Safety regulations required by law are strictly adhered to by staff and students. Students receive extensive training in the safety aspects of their occupations. The safety records of the industrial schools and the vocational schools are impressive. The compensation laws in case of accidents and/or disability ensure the continued job and financial security of the victim for the remainder of his or her life.

Summary

The order of priority of the first five needs assessment categories, as perceived by the Manitoba populations, was as follows: 1) Intra-Inter-Agency

Communication 2)Student and Behavior Problems 3)Curriculum Content 4)Curriculum and Program Development 5)Student Services. The West German responses to the categories imply that the needs in these areas have been recognized and to a large extent satisfied.

The success of the West German system is largely based on a long historic tradition; established by industry and business, by taking a large reponsibility in the training and education of the youths.

In recent years that responsibility has been increased by Federal Legislation encouraging the industry and business sector of the economy to accept even more responsibility. This commitment is noticeably absent in Manitoba and Canada as mentioned in Chapter I. Another factor that is evident is the career education and placement services provided by the federal monopoly in counselling and placement of students into Industrial Training Stations.

Perhaps the largest single factor responsible for the systems success; aside from the historic tradition, is the co-operation and communication between the various agencies responsible for industrial vocational training and education. The intra-inter agency communication fostered by the various chambers, the federal BIBB and the Land school systems, provides the student with clear career tracks and a good opportunity for realizing a career. This aspect alleviates many of the student motivational problems

encountered in Canada and the United States. The communication also provides avenues for curriculum revision on a national level, which in turn provides a constant supply of trained manpower and a high level of productivity. This particular aspect of the system is almost totally lacking in Manitoba and Canada.

Conclusion

The West German dual vocational education system was recently subjected to a close scrutiny by an evaluation committee of the Organization for Economic Co-operation and Development (OECD). The study was entitled Study of the Youth Employment Practices in West Germany 1981. The report included comparative unemployment statistics, productivity statistics, costs, etc. The report leaves no doubt that the West German version is the most effective of the western systems in training a highly skilled productive workforce.

Considerable attention is being given to the German system in the United States. For example, an analysis of Germany's world-class manufacturers in the Harvard Business Review (Limprecht, 1982) ascribes much of the business success to the West German vocational education system. Limprecht is of the opinion that the U.S. may have been looking in the wrong direction.

> "Indeed, our preoccupation with Japan's more visible challenge, may have led us to look for inspiration in the wrong direction. ..... In particular, it may prove

> instructive to explore the sources of Germany's competitive success in international markets. Our culture language and population have deep German roots, and there is, in fact, much about German management practice that is not at all incompatible with what we normally consider to be "American" " (Limprecht, 1982, p. 137).

Another factor that Limprecht (1982) isolates, is the low level of youth unemployment (5.1% in 1981, compared to 18% in the U.S.). In his opinion youth unemployment in Germany will rarely be a national problem; for the simple reason that the world continues to use any surplus skilled labourers or tradesmen, technicians or engineers that Germany produces.

The success of German youth in locating and holding a position is due to the broad base of low-level competence (not competence of a low level but competence at low levels). The education system provides a pool of skilled technically proficient workers, who are so well versed in the theoretical fundamentals of their craft that they adapt easily to new process technologies (Limprecht, 1982).

CHAPTER V

ANALYSIS OF THE DATA

Introduction

This chapter will present the results of the assessment of the needs of industrial vocational education in Manitoba's secondary schools as perceived by industry and educators. The results will be presented in the following manner:

1) The respondents background and number of returns are described.

2) The 76 need statements are divided into three sections in accordance with their means. A mean value approaching 5 indicates a high degree of need; values ranging from 3 to 3.5 indicate a medium degree of perceived need, values less than 3 indicate a low priority in the view of the respondents.

3) Fifteen high priority statements and ten low priority statements are presented in a tabular form for each segment of the population. The statements from the survey instrument are repeated in the tables in an abbreviated form together with their mean value, rank and statement number. The tables will indicate the relative priority of the

statements and provide a comparison between the populations.

4) The five statements selected to be most urgently in need of attention by the respondents in the second round of reading the survey instrument are presented in Tables 9 and 10; in descending order of frequency of selection and by population.

5) The eleven general categories or groups of statements are presented in Tables 11 and 12; according to the values of their means in descending order and by population.

6) The free responses submitted by the respondents are summarized and exemplary responses are discussed.

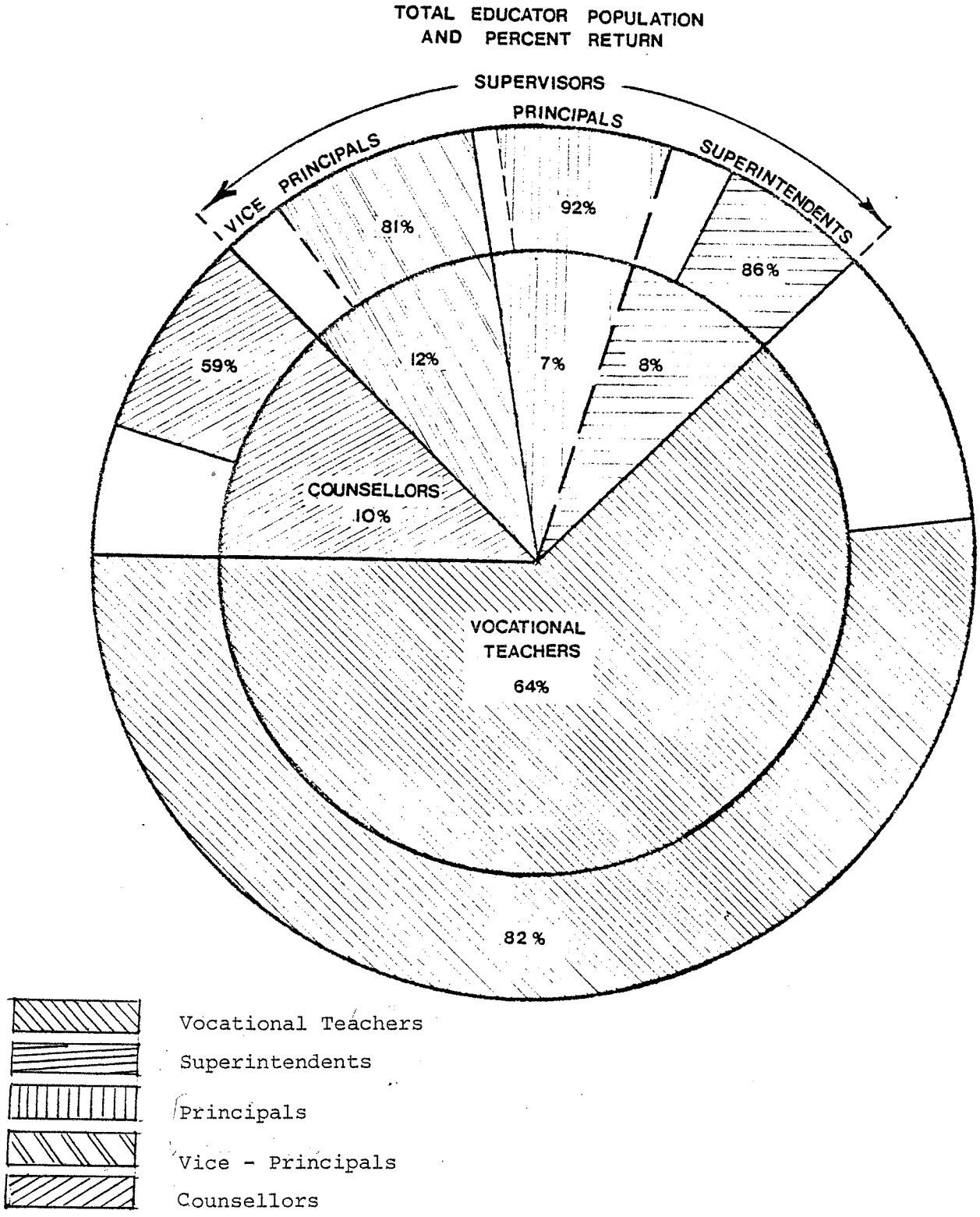
Population Description

The total possible educator population was 337, 271 completed questionnaires were returned. This constitutes an overall return rate of 80.5%.

The educator population consisted of 214 vocational teachers, 84 supervisors and 39 counsellors. The supervisor population was composed of 28 superintendents, 25 principals and 31 vice principals. The return rates were: 92% for principals, 86% for superintendents, 82% for teachers and 59% for counsellors. Figure 6 provides an overview of the returns and population distribution.

Of the educator population 66% had more than five years of experience in vocational schools and over 86% of the

FIGURE 6


TOTAL EDUCATOR POPULATION
AND PERCENT RETURN
SUPERVISORS
VICE PRINCIPALS
PRINCIPALS
SUPERINTENDENTS
81%
92%
86%
59%
12%
7%
8%
COUNSELLORS
10%
VOCATIONAL
TEACHERS
64%
82 %
Vocational Teachers
Superintendents
Principals
Vice - Principals
Counsellors

population was male.

The Winnipeg Chamber of Commerce has a mailing list of over 1500 individual members. However, some of the members belong to sub-organizations within the Chamber. Some of these returned consensus questionnaires representing the opinion of the sub-organizations. The Chamber mailed 1500 questionnaires of which 105 completed instruments were returned to the Chamber. This constitutes a return rate of 6.6%. However, the Chamber management estimates that the actual return rate is approximately 16% due to the consensus questionnaires.

The Chamber respondents represent a variety of industry and business sectors. The largest representation 25.7% belongs to manufacturing, followed by the wholesale and retail trades 13.3%, professional and related services 13.3%, finance and real estate 10.6% and business and repair services 8.1%. The remainder were scattered over a variety of other classifications (see Appendix A).

Ranking of Items

Table 5 compares the 15 high need areas as indicated by Education and by Industry. It is noted that 10 of the 15 items appear on both sides of the table; though not necessarily in the same order. The items selected also have a strong similarity in their direction. They indicate the need for communication among the various sectors that have a

Table 5

High Priority Needs Statements as Perceived by Educators and Industry in Rank Order.

RANK	MEAN	EDUCATION	RANK	MEAN	INDUSTRY AND COMMERCE
1	4.018	46)* Improve parental awareness of the goals and opportunities available in vocational education.	1	4.152	6) Ensure the relevance of vocational curriculum to current job opportunities and practices through effective methods for identifying selecting an updating content
2	4.018	67) Improve Junior High @ High school counsellors knowledge about available secondary and post secondary vocational programs.	2	3.943	3) Develop methods for assisting students in transition from school to work.
3	4.007	28) Improve procedures and funds for replacing obsolete equipment.	3	3.876	16) Increase collaboration with key segments of the employment community
4	3.935	3) Develop methods of assisting students in transition from school to work.	4	3.829	68) Improve vocational education programs for early school leavers and unemployed youth.
5	3.930	6) Ensure the relevance of vocational curriculum to current job opportunities and practices through effective methods of identifying, selecting and updating content.	5	3.829	45) Initiate procedures for reviewing and eliminating programs when their enrollment or job opportunities no longer meet pre determined standards
6	3.889	76) Improve business and industry's use of vocational programs as a source of employees.	6	3.819	76) identical
7	3.889	51) Improve coordination between vocational and academic curricula.	7	3.810	4) Improve opportunities for all vocational students to acquire the basic skills (e.g. reading communication, math required for course work and jobs.
8	3.878	7) Better communicate the benefits and content of vocational programs to parents, students, employers and general educators	8	3.800	58) Establish systematic initiation of new vocational programs in emerging occupations and fields with expanding employment opportunities.
9	3.867	42) Improve counselling prior to enrollment to assist students in clarifying their purpose for enrolling in vocational education and selecting the right program.	9	3.790	42) identical
10	3.823	4) Improve opportunities for all vocational students to acquire the basic skills etc.	10	3.752	67) Improve junior high and senior high school counsellors knowledge about available secondary and post secondary vocational programs
11	3.794	16) Increase collaboration with key segments of the employment community	11	3.714	43) Expand opportunities for all students to explore and practice job skills in both community and school setting

Table 5 (Continued)

High Priority Needs Statements as Perceived by Educators and Industry in Rank Order.

RANK	MEAN	EDUCATION	RANK	MEAN	INDUSTRY AND COMMERCE
12	3.790	25) * Improve opportunities for in-service vocational personnel to renew and expand their competencies.	12	3.714	12) Improve communications with middle and high school students through various avenues to convey the career opportunities in secondary and post secondary vocational programs.
13	3.786	58) Establish systematic initiation of new vocational programs in emerging occupations and fields with expanding employment opportunities.	13	3.676	46) Improve parental awareness of the goals and opportunities available in vocational education.
14	3.779	54) Improve communication with all general educators concerning the goals and content of vocational education.	14	3.657	71) Provide out of school experience to introduce students to various aspects of business and industry.
15	3.746	18) Improve commitment to vocational education by local chief administratiors and governing boards.	15	3.638	51) Improve coordination between vocational and academic curricula.

*) Statement number as it appears on the survey instrument.

concern in vocational education and will be dealing with the same client, the student.

Table 6 indicates a strong similarity in low priority needs as identified by educators and members of the business community. Five of the ten lowest ranked items are identical. Three of these items, numbers 48, 39, and 21 deal with the needs of minority groups. Number 11 is concerned with safety in the work place. The remainder of the low priority statements deal with management and evaluation.

It is necessary, at this stage, to point out that even though the statements in Table 6 are ranked the lowest; this does not mean that these areas are not important or that they are being neglected. On the contrary since a low need is indicated, mechanisms designed to deal with these needs may be in place and functioning properly. Safety, for example received a low rating. In the recent past, considerable resources have gone into upgrading safety facilities in the schools and in the workplace. In addition, a program to increase awareness of safe practices and procedures has been in place in the province in the past several years. These efforts may have been effective and have reduced the need in the perception of the respondents.

Table 7 points out certain differences and similarities in priorities as perceived by the three components of the educator population. Three statements appear in all three

Table 6

Low Priority Statements as Perceived by Educators and Industry in Descending Rank Order

RANK	MEAN	EDUCATION		RANK	MEAN	INDUSTRY AND COMMERCE	
67	2.970	41)	Improve methods for evaluating vocational personnel.	67	2.629	16)	Individualize teaching and learning to meet the needs of individual students.
68	2.945	47)	Improve storage space for supply and tools	68	2.619	20)	Improve standards, procedures and funds for upgrading and maintaining safety equipment and standards in shops.
69	2.930	11)	Improve pre-service training and in-service training in matters related to safety	69	2.610	11)	identical
70	2.929	63)	Provide formal needs assessment procedures .. to help establish local priorities.	70	2.571	49)	Initiate resource allocation formula which will allow for differences in cost of delivering vocational education in rural and urban areas.
71	2.897	48)	Improve and expand vocational education to meet the needs of individuals who are minority group members	71	2.562	39)	Improve and expand opportunities for female leadership in vocational education.
72	2.863	55)	Improve and expand vocational education to meet the needs of individuals who are limited in English speaking ability.	72	2.524	38)	Improve the student counsellor ratio at the pre-vocational and secondary levels.
73	2.756	39)	Improve and expand opportunities for female leadership in vocational education.	73	2.476	48)	Improve and expand vocational education to meet the needs of individuals who are minority group members.
74	2.734	32)	Develop practices and procedures for measuring the relative cost effectiveness of program alternatives.	74	2.457	13)	Improve and expand follow up studies of former students and their employers.
75	2.731	21)	Improve and expand vocational education to meet the needs of individuals who are elderly.	75	2.400	21)	identical
76	2.683	60)	Initiate and/or improve procedures for collecting and using personnel evaluation data.	76	1.657	47)	Improve storage space for supplies and tools.

*) Statement number as it appears on the survey instrument

Table 7

High Priority Needs as Perceived by Teachers, Supervisors and Counsellors in Rank Order.

	MEAN	TEACHERS	MEAN	SUPERVISORS	MEAN	COUNSELLORS
1	4.244	67) Improve junior high and high school counsellors knowledge re: vocational programs	4.042	6) Ensure the relevance of vocational curricula	4.435	38) Improve the student counsellor ratio.....
2	4.108	46) Improve parental awareness of the goals.....	3.889	28) Improve procedures and funds for replacing obsolete equipment.	4.078	6) Ensure the relevance of vocational curricula.....
3	4.080	28) Improve procedures and funds for replacing obsolete equipment.	3.897	3) Develop methods for assisting students in the transition from school to work	4.087	46) Improve parental awareness of the goals.....
4	4.028	4) Improve the opportunities for all students to acquire the basic skills....	3.833	58) Establish systematic initiation of new vocational programs..	4.043	23) Coordinate comprehensive guidance, counselling placement and follow-up services with business.....
5	4.017	76) Improve business industry's use of vocational program as a source of employees	3.794	16) Increase collaboration with key segments of industry and labor	4.000	40) Improve and expand vocational education to meet the needs in sparsely populated areas..
6	4.006	42) Improve counselling prior to enrollment.	3.778	46) Improve parental awareness of the goals.....	4.000	42) Improve counselling prior to enrollment
7	4.000	51) Improve coordination between vocational and academic curriculum.....	3.732	35) Maintain current career and vocational information.	3.956	36) Develop curricula which prepare students for clusters of up-to-date occupations.

Table 7 *Continued*

High Priority Needs as Perceived by Teachers, Supervisors and Counsellors in Rank Order.

	MEAN	TEACHERS	MEAN	SUPERVISORS	MEAN	COUNSELLORS
8	3.983	3) Develop methods for assisting students in the transition from school to work.	3.681	56) Establish firm commitments concerning amounts of time lines for vocational funding.....	3.957	35) Maintain current career and vocational information...
9	3.960	7) Better communicate the benefits and contend of vocational education to parents.....	3.681	7) identical	3.957	51) Improve coordination betweenacademic and vocational curricula.....
10	3.915	54) Improve communication with all general educators..	3.681	22) Provide coordination among vocational offerings in secondary and post-secondary programs	3.913	71) Provide out of school experience to introduce students to business.....
11	3.880	53) Provide effective pre-service counsellor education program for vocational guidance.....	3.653	23) Coordinate comprehensive guidance counselling placement and	3.870	19) Counselling for students with negative attitude towards work.....
12	3.878	25) Improve opportunities for in-service vocational personnel to renew and expand their competencies	3.625	76) Improve business and industry's use of vocational programs as a source of employees.	3.870	3) Develop methods for assisting students in theirtransition from school to work
13	3.869	6) Ensure the relevance of vocational curricula.....	3.597	51) Improve coordination between vocational and academic curricula	3.870	10) Assiststudents with special problems.....
14	3.843	59) Improve instructional media.....	3.583	67) Improve junior high and high schools counsellors knowledge re: vocational education.....	3.870	7) Better communicate the contentand benefits of vocational education to parents.....
15	3.767	58) Establish systematic initiation of new vocational programs.	3.569	24) Increase the flexibility of vocational education programs to accommodate transfers	3.87	25) Improve opportunities for in-service vocational personnel to renewandexpand their competencies

*) Statement number as it appears on the survey instrument

lists; number 51 identifies a serious need to co-ordinate vocational and academic curricula in order to make them mutually supporting in complementary skill areas, number 7 points out the need to publicize the possibilities and benefits attainable through vocational education programs to the public at large. Also, a possible implication of number 7 is a need to to erradicate certain misconceptions that the community may hold with respect to vocational education. Statement number 6 stresses the need to keep the curriculum of the vocational programs current. Supervisors and teachers agreed on a further six statements. Number 67 points out the need for the counsellors in junior and senior high schools to improve their understanding of the vocational program and the world of work at large. Numbers 76 and 46 . are similar to number 7 in that an improved communication with the community at large is deemed very desireable. Number 28 seems to indicate problems with the funding procedures currently being employed to replace equipment. Number 58 is similar in intent to number six; it also emphasizes the need to keep the curriculum up-to-date in view of the rapid changes that are occuring in the technology employed by our society. Teachers and counsellors further agree on three statements. Numbers 42 and 3 stress the necessity to assist the students in selecting a vocational program suited to their needs and further assisting the students in making the transition from

school to work. Number 25 is linked to numbers 58 and 6, to keep the curriculum up-to-date the teachers must keep their skills on a similar plane.

The fifteen priority needs may be gathered into three groups as follows:

1) to keep the programs relevant and up-to-date,

2) to improve the communication with the community the school is designed to serve and through this information assist the students in finding their place in the world of work,

3) improve the funding procedures currently employed to finance vocational education.

The differences between the priority lists seem to stem from the job descriptions of the three populations. The teachers give a high priority to basic skills required in school and at work (number 4). They also give a higher priority to communication within the educational community. It is primarily the teachers job to co-ordinate and implement changes, improvements and the program in general (number 54). The teachers also require clear goal statements with respect to the direction and emphasis of their efforts. The teachers in addition, express the need for assistance in their day to day work by seeking improved teaching aids (number 59). The counsellors emphasize improved working conditions by reducing counsellors to student ratios (number 38) and improved access to

information systems (number 35). The supervisors express the need for better funding arrangements more strongly than the other two groups (numbers 28, 56).

The supervisors, teachers and counsellors agree on two items in the low priority Table no. 8: the improvement of vocational education for the elderly and the evaluation of the vocational teaching personnel. (numbers 21 and 60) Teachers and supervisors agree on an additional four items; two of which are concerned with minority groups (numbers 48 and 55), improvement of teacher participation in curriculum development and community activities (number 15), together with improvement of opportunities for female leadership (number 39). The counsellors and supervisors concur on an additional three items; management of retrenchment problems (number 69), evaluation of vocational personnel (number 41) and improvement of storage space (number 47).

The differences in low priority items as perceived by the three sub-populations again seem to be contingent on the job description of the groups. Counsellors rate safety low; (numbers 20 and 11), together with pre-service and in-service education for vocational teachers, (number 5). Supervisors rate storage space low. This item seems to have practical value for teachers in the shops and laboratories. (number 47).

In general the low priority items as perceived by all three sub-populations are concerned with the following area:

Table 8

Low Priority Needs Statement as Perceived by Teachers, Supervisors and Counsellors in Descending Rank Order.

RANK	MEAN	TEACHERS	MEAN	SUPERVISORS	MEAN	COUNSELLORS
67	2.972	15) Increase the participation of vocational teachers in supporting activities (i.e. curriculum development.....	2.957	14) Individualize teaching and learning	3.000	52) Increase the involvement of the representatives of the manpower community in developing and updating vocational education.....
68	2.960	12) Develop a system for reliable identification of occupationally disadvantaged	2.958	15) Increase the participation of teachers in supporting activities (i.e. curriculum development.....	3.000	5) Ensure that pre-service preparation of vocational education personnel meets present and emerging competency needs.
69	2.943	24) Increase the flexibility of vocational education programs to accommodate transfers.....	2.931	69) Develop strategies for retrenchment due to decreasing enrollment	3.000	69) Develop strategies for retrenchment due to decreasing enrollments.....
70	2.892	48) Improve and expand vocational education to meet the needs of minority groups.....	2.861	41) Improve the methods for evaluating vocational personnel	2.957	20) Improve standards procedures and funds for upgrading and maintaining safety.....
71	2.858	55) Improve and expand vocational education to meet the needs of individuals who are limited in English speaking ability	2.833	48) Improve and expand vocational education to meet the needs of minority groups.....	2.913	41) Improve the method for evaluating vocational education personnel

Table 8 *(Continued)*

RANK	MEAN	TEACHER	MEAN	SUPERVISORS	MEAN	COUNSELLORS
72	2.852	63) Provide for formal needs assessment procedures for determining the requirements of various groups..	2.819	55) Improve and expand vocational education to meet the needs of individuals who are limited in English.....	2.870	72) Evaluate and determine the relative effectiveness of the various systems of delivering vocational education...
73	2.830	21) Improve and expand vocational education to meet the needs of individuals who are elderly	2.792	39) Improve and expand opportunities for female leadership in vocational education.....	2.696	60) Initiate and/or improve procedures for collecting and using personnel evaluation data
74	2.676	60) Initiate and/or improve procedures for collecting and using personnel evaluation data	2.695	60) Initiate and/or improve procedures for collecting and using personnel evaluation.....	2.565	11) Improve preservice and inservice training of teachers in matters related to safety.....
75	2.625	39) Improve and expand opportunities for female leadership in vocational education.....	2.653	47) Improve storage space for supplies and equipment	2.475	47) Improve storage space for supplies and equipment
76	2.262	72) Evaluate and determine the relative effectiveness of the various systems of delivering vocational education.....	2.611	21) Improve and expand vocational education to meet the needs of the elderly.....	2.261	21) Improve and expand vocational education to meet the needs of the elderly.....

* Statement number as it appears on the survey instrument

socially defined special need groups (number 21, 48, and 55), evaluation of vocational educators and education (numbers 60, 72 and 41) and management concerns (numbers 39, 69, and 47). (For a rank ordering of all items see Appendix H).

Items Selected as Most Urgent in Need

After rating the priority of all items the respondents were asked to re-read the instrument and select the five items that they perceived to be the most urgent in need of attention. Table 9 presents the five items, in descending order of priority, that were selected most frequently by educators and commerce.

The information given by educators in Table 9, moves item number 7 from eighth position in Table 5 to first position in the most urgent category. However, both item number 7 and item number 46 (first in Table 5) have similar meanings, in that they stress the need for communicating the benefits of vocational education to the community. Item 28 regarding funding for replacement of obsolete equipment moved from number three position to no. two in Table 9. This seems to stress a high level of need in that area. Item number 4 appears in third position in both tables. The transition from the school environment to the world of work appears to cause considerable difficulty for vocational students. The need for upgrading vocational teacher

Table 9

Items Selected as Most Urgent in Need by Educators and Industry in Order of Frequency of Selection.

RANK	FREQUENCY OF SELECTION	EDUCATORS	FREQUENCY OF SELECTION	INDUSTRY AND COMMERCE
1	56 (7)	Better communicate the benefits and content of vocational education to parents, students employers, and general educators.	23 (6)	Ensure the relevance of vocational curricula to current job practices through effective methods for identifying selecting and updating content.
2	48 (28)	Improve procedures and funds for replacement of obsolete equipment.	22 (3)	Develop methods for assisting student in transition from school to work (e.g. job seeking skills, coping with work entry and adjustment work habits, attitudes.
3	40 (3)	Develop methods for assisting students in transition from school to work.....	21 (16)	Increase collaboration with key segments of the employment community (e.g. business, industry, organized labor, government).
4	36 (25)	Improve opportunities for inservice vocational personnel to renew and expand their competencies.	19 (19)	Counselling for students with negative attitudes towards work, the education system, themselves and others).
5 *	35 (4)	Improve opportunities for all vocational students to acquire the basic skills (e.g. reading communication, math required for coursework and jobs)	16 (4)	identical
5 *	35 (46)	Improve parental awareness of goals and opportunities available in secondary and post secondary vocational programs as compared to university		

* Tied rank Statement number as it appears in the survey instrument.

competencies number 25 moved from twelfth position to fourth position in Table 9. It appears that the educator population, upon considering all statements in the questionaire, consider this item to be of high priority. The fifth item in the most urgent needs table for educators number 4 addresses the basic skills required by the students at work and at school. Item number 46 regarding, communication of the benefits of vocational education to the community is tied in rank to number 4. The educators have placed considerable emphasis into the area that stress the need for improved public relations between the community at large and the vocational education system.

The second portion of Table 9 depicts the needs statements considered most crucial by Manitoba industry. The order of the first three items is identical to that identified in Table 5, items 6,3 and 16, dealing with the relevance of curricula, transition from school to work, and increased collaboration, respectively are of prime necessity as perceived by industry. Item number 19 did not appear in the top 15 in Table 5, but does appear in Table 9, it seems that upon considering all statements, industry perceives that the product of vocational education displays an attitude toward work that is not in keeping with industrie's expectation. Ranked fifth in Table 9 are problems associated with the basic skills. Here industry and educators agree in their perceptions, both feel that there

is a serious need to improve the basic skills of the vocational students.

Item number 3 regarding the transition from school to work deserves separate mention. It appeared ranked in the top five items in both Tables 5 and 9, by both the educators and industry.

Table 10 depicts the five statements selected as having the highest priority by the educator sub-populations, the teachers, supervisors and counselors. Table 10 agrees fairly well with Table 7 (rank order of 15 needs statements as perceived by teachers, supervisors and counselors) . However, there are some notable exeptions. The supervisors inserted number 40 dealing with vocational education in rural Manitoba as having high priority in Table 10. The counselors moved numbers 24 and 2 to position 2 and 3 respectively. Number 24 stresses the need for more flexible programs to allow for changes and more convenient entry and exit from the programs; number 2 stresses the need for evaluating vocational programs in terms of goal achievement and student outcomes.

Categories and General Problem Areas

The third level of analysis involved the rank ordering of eleven general categories to identify more general problem areas. Table 11 lists the categories in descending order of priority for educators and Manitoba Industry and

Table 10

Items Selected as Most Urgent in Needs as Perceived by Vocational Teachers, Supervisors and Counsellors in Rank Order.

RANK	FREQUENCY OF SELECTION	TEACHERS	FREQUENCY OF SELECTION	SUPERVISORS	FREQUENCY OF SELECTION	COUNSELLORS
1	36	(28) Improve procedures for replacement of obsolete equipment	19	(7) Better communicate the benefits and content of vocational education to parents, students	7	(38) Improve the student-counsellor ratio at the pre-vocational and secondary level.
2	34	(7) Better communicate the benefits and content of vocational education to parents.....	14	(6) Ensure the relevance of vocational curricula.....	4*	(24) Increase the flexibility of vocational programs to accommodate transfers, entry and exit at various levels
3	30	(25) Improve opportunities for in-service vocational personnel to renew and expand their competencies.	14	(22) Provide coordination among vocational offerings in secondary and post secondary programs.	4*	(19) Counselling for students with negative attitudes toward school and work.
4	28	(3) Develop methods for assisting students in the transition from school to work.	10	(28) Improve procedures and funds for replacement of obsolete equipment.	4*	(2) Evaluate vocational education more effectively (i.e. goal achievement, student outcomes)
5	*26	(51) Improve co-ordination between vocational and academic curricula.....	9	(40) Improve and expand vocational education to meet the needs of individuals in sparsely populated rural areas.	4*	(3) Develop methods for assisting students in the transition from school to work.
6	*26	(67) Improve junior and high school counsellors' knowledge about available secondary and post secondary vocational programs.				

* Tied ranks. Statement number as it appears in the survey instrument.

Table 11

Priority Ratings of the Categories by Educators and Manitoba Industry in Rank Order.

RANK	MEAN	EDUCATOR	MEAN	MANITOBA INDUSTRY
1	3.718	Intra-Inter-Agency Communication	3.714	Curriculum Content
2	3.539	Student and Behavior Problems	3.495	Intra-Inter-Agency Communication
3	3.513	Curriculum Content	3.457	Student and Behavior Problems
4	3.486	Curriculum and Program Development	3.306	Curriculum and Program Development
5	3.462	Student Services	3.204	Student Services
6	3.440	Staff Development	3.140	Staff Development
7	3.266	Management	3.031	Planning and Evaluation
8	3.218	Safety	2.929	Special Learner Groups
9	3.201	Staff Utilization	2.809	Management
10	3.201	Special Learner Groups	2.738	Staff Utilization
11	3.117	Planning and Evaluation	2.648	Safety

Figure 4 depicts the ratings and means graphically.

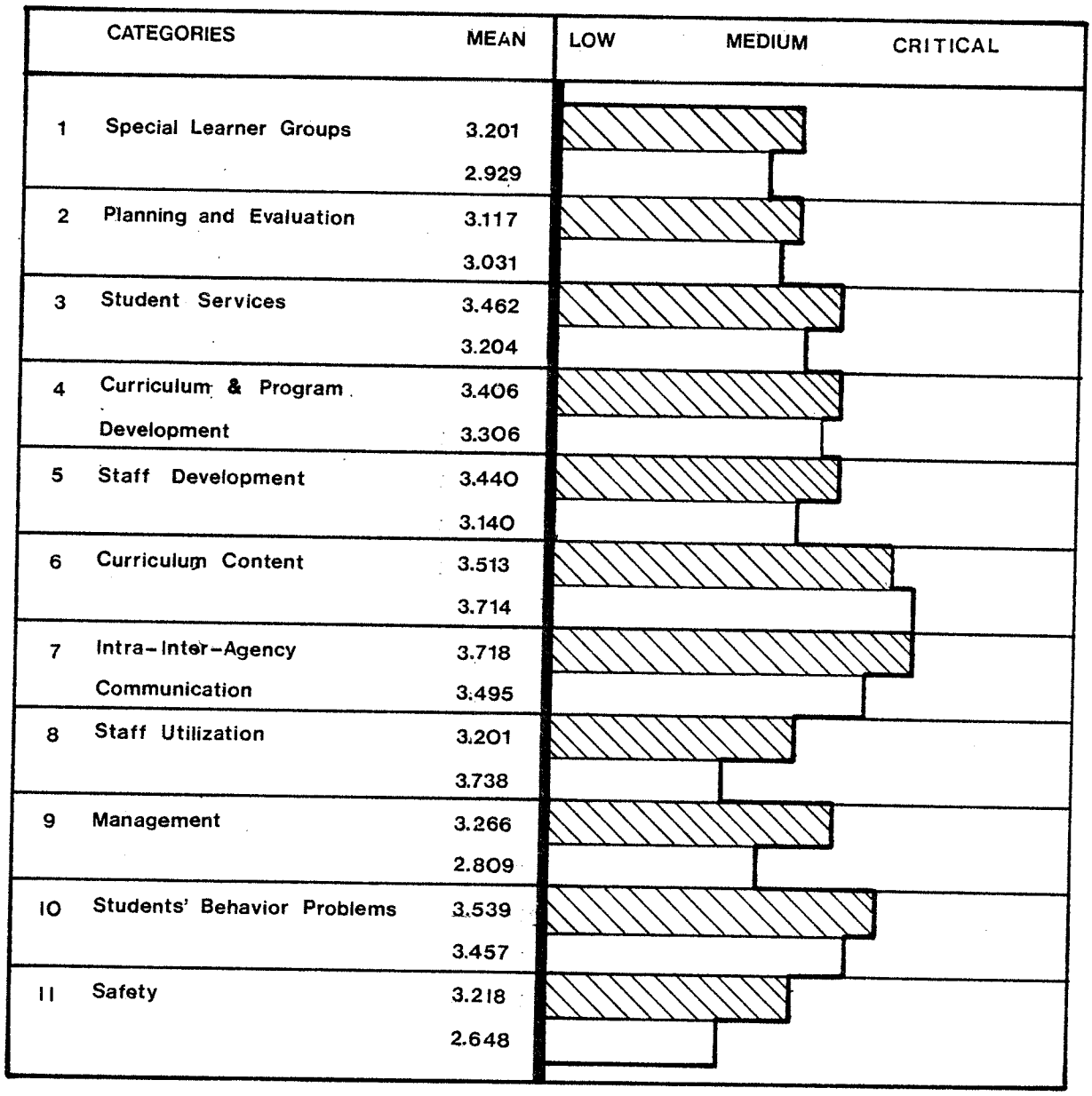
As indicated by Table 11 and Figure 4, there is again considerable agreement between vocational educators and Manitoba industry. Categories four, five and six have identical ranks. Intra-Inter-Agency Communications is number one for the educators and number two for industry. Curriculum content is in first position for industry and number three position for the educators. Student and Behaviour Problems are rated as second in priority by the educators and are third for industry. In general the first six ranks for both populations are the same, the first three being in a slightly different order. The general problem areas as perceived by educators and industry alike are: Intra-Inter-Agency communication, this includes guidance and counselling with respect to program selection, co-ordination of programs, communication with government agencies, consultation with industry and communication with parents and the community at large. Curriculum content may be considered in second position. It includes the need to adjust the curriculum and to keep it up-to-date with the requirements of Manitoba Industry and changes in technology. Student and behaviour problems could be the third major area. This area includes negative attitudes in school and work, financial need on the part of the student, problems with program selection and program changes.

Table 11 also indicates that the means assigned to the

Figure 4

Comparisons of Ratings of Categories Between Vocational Educators and Industrial Personnel

	CATEGORIES	MEAN
1	Special Learner Groups	3.201
		2.929
2	Planning and Evaluation	3.117
		3.031
3	Student Services	3.462
		3.204
4	Curriculum & Program Development	3.406
		3.306
5	Staff Development	3.440
		3.140
6	Curriculum Content	3.513
		3.714
7	Intra-Inter-Agency Communication	3.718
		3.495
8	Staff Utilization	3.201
		3.738
9	Management	3.266
		2.809
10	Students' Behavior Problems	3.539
		3.457
11	Safety	3.218
		2.648



Vocational Educator

Manitoba Industry

categories by the educators are, with the exception of the Curriculum Content category, higher than those assigned by Manitoba Industry. This may be due to the close proximity of the educators to the problems associated with vocational education. The recipients of the graduates may not be that familiar with the operations of the school, thus registering a lower degree of need.

Table 12 and Figure 5 are similar to Table 11 and Figure 4, but show the category ratings for the educator sub-populations, the teachers, supervisors and counsellors.

The order of the priorities of the categories as perceived by the educator sub-populations presents a slightly different picture than that of the combined populations. The teachers see Intra-Inter-Agency Communications as a greater problem than the supervisors and counsellors. The supervisors agree with Manitoba Industry in giving Curriculum Content the number one ranking. The counsellors see Student and Behaviour Problems at the head of the list, as was mentioned previously. The duties of a counsellor in dealing with student problems influenced the choice. The counsellors also placed Curriculum Content ahead of Intra-Inter-Agency Communication. Of interest is the placement of Staff Utilization in second position by the counsellors. This seems to indicate that the counsellors are perceiving serious problems in performing their duties. Item number 38 referring to student counsellor ratios and

Table 12

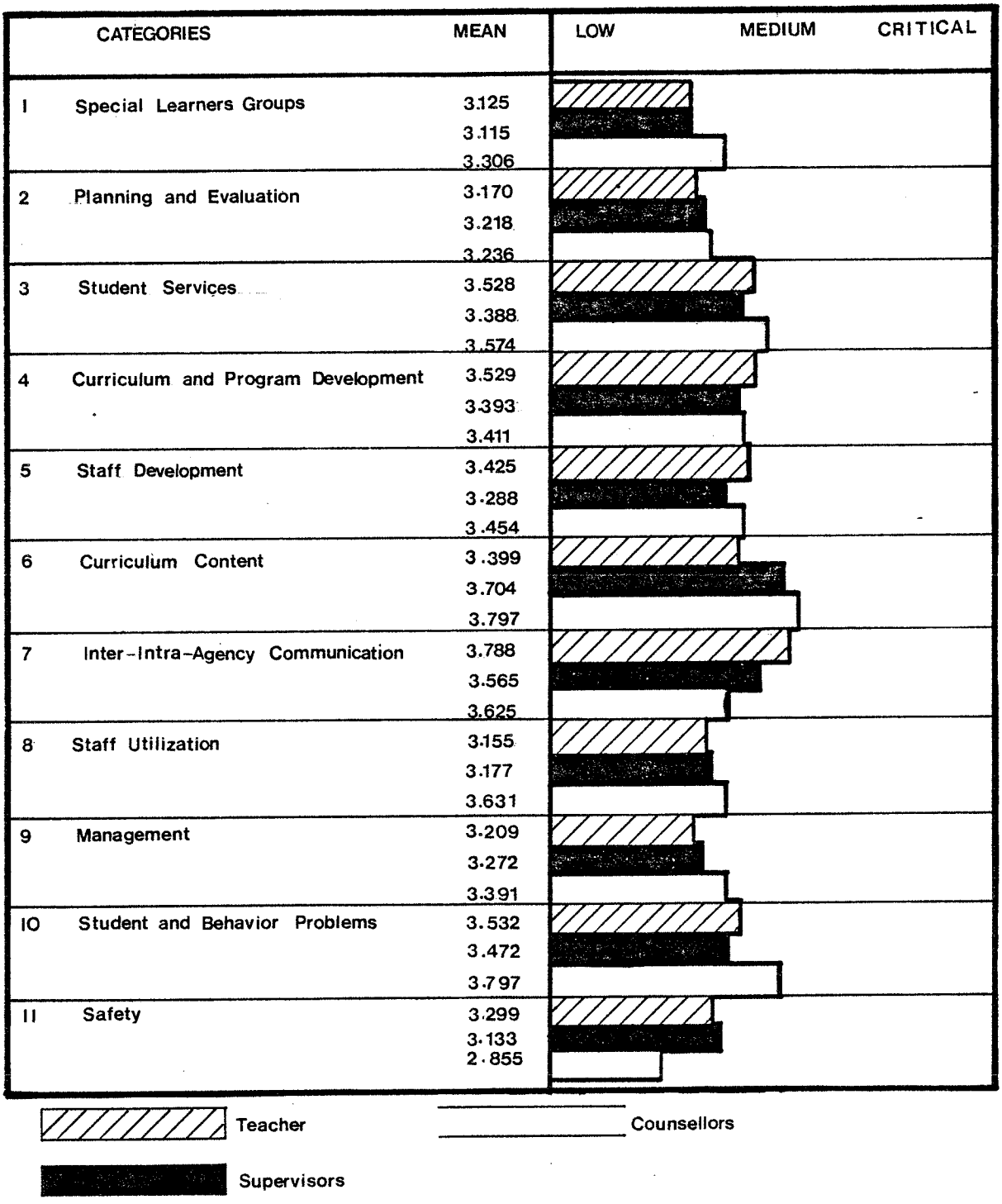
Priority Ratings of the Categories by Teachers, Supervisors and Counsellors in Rank Order.

RANK	MEAN	TEACHERS	MEAN	SUPERVISORS	MEAN	COUNSELLORS
1	3.788	Intra-Inter-Agency Communication	3.704	Curriculum Content	3.797	Student and Behavior Problems*
2	3.532	Student and Behavior Problems	3.565	Intra-Inter-Agency Communication	3.797	Curriculum Content*
3	3.529	Curriculum and Programs Development	3.472	Student and Behavior Problems	3.631	Staff Utilization
4	3.528	Student Services	3.393	Curriculum and Program Development	3.625	Intra-Inter-Agency Communication
5	3.425	Staff Development	3.388	Student Services	3.574	Student Services
6	3.399	Curriculum Content	3.288	Staff Development	3.454	Staff Development
7	3.299	Safety	3.272	Management	3.411	Curriculum and Program Development
8	3.209	Management	3.218	Planning and Evaluation	3.391	Management
9	3.170	Planning and Evaluation	3.177	Staff Utilization	3.306	Special Learner Groups
10	3.155	Staff Utilization	3.133	Safety	3.236	Planning and Evaluation
11	3.125	Special Learner Groups	3.115	Special Learner Groups	2.855	Safety

* Tied Rank

Figure 5

COMPARISONS OF RATINGS OF CATEGORIES BETWEEN VOCATIONAL TEACHERS, SUPERVISORS AND COUNSELLORS



numerous other items dealing with guidance and counselling (Nos. 3, 67, 19, 42, 53, 23) are rated as high priority needs by all respondents.

Of least concern are the categories pertaining to Special Learner Groups and Safety. These areas and the specific items included in the categories, were consistently rated as having relative low need. (For a grouping of the needs statements by category, see Appendix I).

Free Responses

In addition to rating the 76 items and selecting the five most critical items respondents were asked to list areas of concern not included in the questionnaire.

Manitoba Industry

Twenty individuals from the Manitoba industry segment of the population responded with additional comments. Many of the responses commented on or amplified statements incorporated in the questionnaire. Some responses criticized the format and/or content of the questionnaire. Others criticized the educational system in general. A number of responses suggested several areas that were lightly treated by the questionnaire or were omitted all together. These areas are:

1) A study of European systems of vocational education and the incorporation of practices that would be successful

in Manitoba.

2) A clear statement of the short and long term objectives of vocational education in Manitoba, with subsequent evaluation and allocation of resources.

3) The need to evaluate and re-think the journeyman status and the connection between the vocational secondary schools and the apprenticeship system.

4) The need to fill vacant positions in Manitoba Industry with immigrants due to the declining birth rate and the unavailability of skilled labor; (Provisions should be made for vocational training of immigrants).

5) The need for courses in high school that adequately explain the role private enterprise plays in the state; its costs and benefits.

6) Improve the quality of the skills of the graduates of the secondary vocational system. (The free responses from Manitoba Industry are listed in Appendix J). The responses are in their original form with only superficial editing for readability.

Manitoba Educators

Thirty-two individuals from the educator population added comments. Eighteen of these were teachers; ten supervisors and four guidance counsellors.

A considerable number of the responses amplified statements that were in the questionnaire. A number of

responses criticized the wording of the needs statements as being too involved and redundant. Several thought the questionnaire too long. The following additional areas were suggested as needs:

1) Establishment of clear goals for vocational education in Manitoba.

2) Study the European and Japanese systems of vocational education and adjust our system accordingly.

3) Train students to be able to adjust to the rapidly changing requirements in industry due to technological change and shifting economies.

4) To extend vocational programs to all areas of Manitoba .

5) Assessment of student needs.

The free responses by Manitoba Vocational Educators are listed in Appendix J. The responses are in their original form with only limited editing for readability.

Summary

The priority needs as perceived by all respondents are remarkably similar. The differences that do occur seem to be related to the specific job descriptions of each sub-populations and their immediate environment. The teachers for example, perceived a serious need for improvement of instructional materials, which the counsellors and supervisors do not perceive. The items that

received the highest ranking across all populations were as follows (not necessarily in this order of priority):

.....Better communicate the benefits and content of vocational education to parents, students, employers and general educators.

.....Ensure the relevance of vocational curricula to current job practices through effective methods for identifying, selecting and updating content.

.....Improve procedures and funds for replacement of obsolete equipment.

.....Develop methods for assisting students in transition from school to work (e.g. job seeking skills, coping with work entry and adjustment, work habits, attitudes).

.....Counselling for students with negative attitudes toward work, the education system, themselves and/or others.

.....Increase collaboration with key segments of the employment community (e.g. business industry, organized labor, government).

The categories perceived to be of the highest priority were:

.....Curriculum Content

.....Intra-Inter Agency Communication

.....Student and Behavior Problems

Another area that received considerable attention by all respondents, indicating that a crucial need may exist

there, is the matter of guidance, counselling as it relates to career education and career choice, from junior high school to permanent employment. Several of the free responses also enforced the existence of this problem.

Of low priority were matters pertaining to socially defined special need groups, such as the disadvantaged, the aged, racial minorities and those who have limited English speaking ability. Other areas perceived to have a low priority were matters related to safety, evaluation of vocational personnel and matters concerned with internal school management, such as storage space.

The medium priority items were a mixture of items related to those having either low or high priority. No discernable pattern was visible.

Unique Priorities

The sub populations selected some items that were specific to their particular environment.

1) Teacher priorities:

.....Improve opportunities for in-service vocational personnel to renew and expand their competencies.

.....Improve instructional media such as films for use in shops,laboratories and classrooms.

.....Improve coordination between vocational and academic curricula so that academic courses emphasize vocational application and academic skills are improved

within vocational courses.

.....Improve the opportunity for all vocational students to acquire the basic skills (e.g. reading communication and math) required for course work and jobs.

2) Supervisor priorities:

.....Establish firm commitments concerning amounts of and time lines for vocational funding so that local divisions may plan and initiate programs on shedule.

3) Counselor priorities:

.....Improve the student-counsellor ratio at the pre-vocational level and secondary level.

.....Maintain current career and vocational information in areas such as: job requirements, working conditions, and employment opportunities for various occupational areas.

Conclusion

Table 13 lists and compares some of the high priority needs identified by the United States needs surveys (as listed in Chapter II) to the high priority needs identified in Manitoba. It is noted that the needs as perceived by the U.S. populations are similar in intent to those perceived by the Manitoba populations.

Table 14 lists some of the Manitoba high priority needs. In addition the table lists possible responses to these needs that are in operation in the United States and in West Germany.

Table 13

Comparison of Manitoba and U.S. Highly Ranked Needs Statements

High Priority Needs in Manitoba	High Priority Needs by the U.S. Studies
Better communicate the benefits and content of vocational education to parents, students, employers and general educators.	Improve relations with parents and communication with parents and the community at large.
Ensure the relevance of vocational curricula to current job practices through effective methods for identifying, selecting and updating content. Develop methods for assisting students in transition from school to work. (e.g. job seeking skills, coping with work entry and adjustment, work habits and attitudes.) Increase collaboration with key segments of the employment community (e.g. business, industry, organized labour and government.)	Linkage with business and industry with respect to: student placement, curriculum and program, and work experience.
Improve procedures and funds for replacement of obsolete equipment.	Improve financing procedures for vocational education.
Improve guidance and counselling as it relateds to career education and career choice.	Improve guidance with respect to job placement and program selection.
	* Improve basic skills with respect to communication, reading, writing and related mathematics.
	* Improve evaluation of programs and student performance.

* These items do not appear on the Manitoba side of the Table, but are high in priority as listed in Table 5.

Table 14

List of Manitoba Highly Ranked Needs Statements and Possible Responses Employed in West Germany and the United States

High Priority Need in Manitoba	West German Response	U.S. Response
Increase collaboration with key segments of the employment community (e.g. business, industry, organized labour and government.)	1) Chamber organizations with educator, industry and labour representation. 2) Cooperation between industry training institutions and land vocational schools. 3) Federal legislation and funding for industry and schools contingent on collaboration. 4) Industrial donations of equipment and supplies to public schools.	1) Schools organized around requirements of some industries. 2) Donation of expertise equipment and supplies by industry to schools. 3) Labour union participation in advisory councils. 4) Industrial participation on advisory councils. 5) Cooperative education programs.
Improve procedures and funds for replacement of old equipment.	1) Industry does most of the practical training on site. Students are trained on, on site equipment. This decreases the need for facilities in schools. 2) Industry donates equipment to schools that are linked to it.	Procedures vary widely in the various states. Improvement of funding is high on the U.S. priority needs list.
Improve guidance and counselling as it relates to career education and career choice.	1) 7th and 8th school year visits to business and industry by students and consequent follow up in schools. 2) Very close liason between schools and parents before choices are made. 3) National Manpower data banks provide up-to-date career information.	1) Procedures vary widely still a high priority. 2) Implementation of career education at the junior and senior high levels. 3) Development of career education models by the National Center and other agencies.

Table 14 *Continued*

List of Manitoba Highly Ranked Needs Statements and Possible Responses Employed in West Germany and the United States

High Priority Need in Manitoba	West German Response	U.S. Response
Better communicate the benefits and content of vocational education to parents, students, employers and general educators.	1) Long historic tradition of industrial training in cooperation with the school system. 2) Tradition of career paths established in the system. 3) Tradition of social acceptance of high quality trade careers.	1) Media campaigns to publicize the benefits of vocational education. 2) Federal legislation requiring schools to place vocational students in industry and business to qualify for federal grants seems to initiate publication activity by the schools.
Ensure the relevance of vocational curricula to current job practices through effective methods for identifying, selecting and updating content.	1) Federal legislation requiring employers labour and schools to cooperate through chamber like organizations. 2) B.I.B.B. coordinates the curriculum content throughout the nation.	The National Center for Research in Vocational Education fulfills a similar role as the B.I.B.B. in Germany, however; its recommendations are not enforced by legislation.
Develop methods for assisting students in transition from school to work.	1) Dual system requires students to participate in schools and industry simultaneously. 2) 10th and 11th school year introduction into work place on a national level. 3) National data banks on careers and opportunities maintained by federal Manpower. 4) Vocational and career guidance and education beginning at the junior high level.	1) Development of vocational career education models by the National Center and other agencies. 2) Implementation of career education at the junior and senior high school levels. 3) Experimental education and co-op education introduces students to industry and business.

In the case of West Germany some of the solutions listed are based on a historic tradition, but others, such as: a national research center, legislation encouraging industry and business to take a greater role in education and training,co-operative education and career education, are within the realms of possibility for Manitoba and Canada.

CHAPTER VI

CONCLUSIONS AND RECOMMENDATIONS

Introduction

The primary purpose of this study was to accumulate data which will help provide direction for future research, planning and resource allocation; and to provide strategies and guidelines for this process in the continuing development of industrial vocational education in the province of Manitoba.

Specifically the research questions addressed by this study were:

I. What are the needs of Vocational Industrial Education in Manitoba's secondary schools as perceived by vocational industrial teachers, counsellors, supervisors and representative industries?

II. What is the relative priority of these needs?

III. To what extent do the priorized needs as perceived by vocational industrial teachers, counsellors and supervisors differ on the priorized ratings?

IV. To what extent do the priorized needs of vocational industrial educators and industrial personnel differ on the priorized ratings?

V. To what extent do the overall priorized ratings, as perceived in Manitoba, differ from similar studies in the United States?

VI. What solutions or systems have been employed in the United States and West Germany to satisfy needs that are similar to those that have been identified in Manitoba?

The Responses

The responses outlined in this section are summarized in relation to the six major questions established.

I. What are the needs of Vocational Industrial Education in Manitoba's secondary schools as perceived by vocational industrial teachers, counsellors, supervisors and representative industries?

1) Teachers placed the highest priorities on the following areas:

a) Improve procedures and funds for replacement of obsolete equipment.

b) Improve the public image and the public relations for vocational education.

c) Improve the in-service training opportunities for vocational personnel to keep up to date with current technologies.

d) Improve the communication with industry and business to facilitate transition of students from school to the world of work.

e) Improve the data sources for counsellors in junior and senior high schools to facilitate student placement in school and upon graduation.

2) Supervisors placed the highest priorities in the following areas:

a) Improve the public image and public relations of vocational education.

b) Keep the vocational curriculum relevant to current practices in industry and business.

c) Provide co-ordination between course offerings in secondary and post-secondary vocational institutions.

d) Improve procedures and funds for replacement of obsolete equipment.

e) Improve and expand vocational education in sparsely populated rural areas.

3) Counsellors placed the highest priorities in the following areas:

a) Improve the student counsellor ratio at the pre-vocational and secondary level; to improve placement and counselling for students with negative attitudes.

b) Increase the flexibility of the programs to accommodate transfers, entry and exit at various levels.

c) Improve the communication with industry and business to facilitate the transition of students from school to work.

d) Evaluate vocational programs more effectively.

4) Manitoba Industry placed the highest priorities in the following areas:

a) Keep the vocational curriculum relevant to current practices in industry and business.

b) Improve the communication with industry and business to facilitate the transition of students from school to work.

c) Improve counselling for students with negative attitudes towards work and school.

d) Improve the basic skills of students such as reading communication and mathematics that is required for coursework and work.

In ranking the general categories there was strong agreement among all populations. Teachers, supervisors, counsellors and industry all ranked Intra-Inter-Agency Communication, and Student and Behaviour Problems in the top three ranks. Curriculum Content was also placed into the top three ranks, by three of the populations. The teacher population placed a similar category; curriculum and program development, third.

II. What is the relative priority of these needs?

The overall priority of the needs as seen by all populations is as follows.

a) Improve the public image of vocational education.

b) Ensure the relevancy of the curriculum of

vocational education to current practices in industry.

c) Improve the funding and the funding methods for vocational education.

d) Ease the transition of students from school to work.

e) Improve co-operation between schools and business and industry.

d) Improve the counselling and career education of students currently in junior and senior high schools.

Of low priority were needs relating to special populations, such as the elderly, the disadvantaged, Native groups, female roles, the handicapped and groups that are limited in their English speaking abilities. Safety also ranked low in the perception of all populations.

III. To what extent do the priorized needs as perceived by vocational industrial teachers, counsellors and supervisors differ on the priorized ratings?

The teachers place the highest priority on the funding of equipment replacement. Both supervisors and teachers place public relations and the public image of vocational education high on the list of needs. The counsellors, on the other hand rate an improvement in working conditions such as, student counsellor ratios and program flexibility above all other needs. Counsellors also see the evaluation of vocational education as a high priority. Other priorities that were unique to the sub populations were: Teachers--1)

Improvement of in service training, 2) Improvement of co-ordination between vocational and academic curriculum, 3) Improvement of counsellor knowledge of vocational curriculum and programs; Supervisors--1) Improve communication and co-ordination with post secondary institutions, 2) Improve the availability of vocational education in rural areas.

IV. To what extent do the priorized needs of vocational industrial educators and industrial personnel differ on the priorized ratings?

When the teachers, supervisors and counsellors are viewed as a group and their combined responses are compared to the needs perceived by the industrial personnel, a strong similarity is apparent. The educators, however, are very concerned with the funding, the public image of vocational education and the perceived lack of understanding of the goals and benefits of industrial vocational education by the public at large. Industrial personnel, on the other hand, place more emphasis on the need to keep the curriculum relevant. Both sectors place a high priority on improved guidance and counselling to assist students in entering the work force; improve the collaboration between industry and the schools and improvement of the basic skill; such as communication and mathematics.

The ranking of the general categories confirmed the direction indicated by the highly ranked needs statements. Communication between the various agencies concerned with

education, training and placement of the young work force, is considered to be of prime importance. These agencies would likely be the provincial Department of Education, the local school boards and schools, the provincial manpower agencies, the federal manpower agencies, the community colleges, the apprenticeship organizations, and various chambers of commerce. Apparently the respondents feel that the amount of co-operation and communication between these agencies is insufficient.

Curriculum content may be placed in second position. The rapidly changing technology is outpacing the ability of the schools and teachers to maintain a relevant curriculum. Employing obsolete teaching aids, methods and curriculum content, in the view of the educators and industry; is placing industrial vocational education in a position of redundacy.

The third highly ranked area of concern is the attitude of students and problems associated with their behaviour. Both educators and industry deplore the demise of the work ethic among the young people of today in the free response section of the questionnaire. Characteristics such as honesty, reliability, and initiative are seen to be lacking.

V. To what extent do the overall priorized ratings, as perceived in Manitoba, differ from similar studies in the United States?

As listed in Chapter II, in the summary of findings for the United States, the areas of greatest need were:

a) Linkage with business and industry with respect to: student placement, curriculum and program development, and work experience.

b) Basic skills with respect to communication, reading, writing and related mathematics.

c) Evaluation of programs and student performance.

d) Guidance with respect to job placement and program selection.

f) Relations and communication with the parents and the community at large.

The United States studies indicate that the respondents of the national and state needs assessments perceived similar needs as the Manitoba respondents. Why this similarity? Several reasons are possible. Industrial vocational education in Manitoba is based on the models evolved in the United States. The text books and training manuals originate in the United States and many of the instructors at the community colleges, university and high schools have been trained in the United States. The values of Manitoba society tend to be similar to those south of the border.

VI. What solutions or systems have been employed in the United States and West Germany to satisfy needs that are similar to those that have been identified in Manitoba?

The National Center for Research in Vocational Education and several states responded to the expressed needs in several ways that may be effective in the Manitoba environment.

As mentioned in Chapter II, Minnesota embarked on a major media campaign to familiarize the public with the goals and benefits of vocational education. The campaign was supported by labor unions, business and industry and government agencies. A post-campaign survey indicated that 83% of the population polled, supported expenditure on vocational education (Le Buerkien, 1980). Career education packages were developed and implemented throughout the United States. Of particular interest is the Career Planning and Support Systems package, developed, piloted and evaluated by the National Center for Research in Vocationl Education. Co-operation with industry and labour seems to be one of the prime necessities for a successful vocational education program; as shown by the West German example. Many such co-operative efforts have been initiated in the United States. These projects include joint curriculum construction, co-operative education, experiental education, numerous pulications by the National Center describe and catalogue the projects (Kopp, 1977, Coleman, 1979, Warmbrod, 1981).

Many of the projects in the United States have been thoroughly researched and tested. A search of the projects

and a study of their feasibility in the Manitoba environment could result in valuable information and ideas that could be implemented on the province.

As described in Chapter IV, the dual system employed in West Germany, could provide many valuable lessons in human resources management. Many aspects of the dual system could be modified and incorporated in the Manitoba vocational education system. The prime feature of the dual system is the co-operation between industry, business, labour and community. The pooling of resources lifts the heavy tax burden from the individual. The social legislation protects the young from exploitation; the co-operation of industry and labour ensures an orderly succession of trained manpower. Perhaps the most significant feature is the enthusiasm of the young that is generated by having them participate early in life, in what they seem to see as a meaningful activity that gives a definite direction to their efforts.

The Manitoba Department of Education is currently embarking on an co-op vocational industrial education experiment that has similar characteristics. The experiment will only involve students in grade 12 and will only involve areas not currently served by vocational facilities. The results of the experiment should give some indication of the feasibility of the system. It is becoming quite apparent that the current system of vocational education is not equal

to the task of supplying the required skilled manpower. The Honourable Lloyd Axworthy indicated that demand for skilled workers will continue to increase. Secondary and post-secondary vocational education will have to undergo radical changes in the near future. (Axworthy, 1982)

Conclusions

On the basis of the information gathered, it can be concluded that:

1. The public image of industrial vocational education should be improved.

2. A system that allows the continuous up-dating of the vocational curriculum should be established.

3. The methods of funding of vocational education should be changed to make it more responsive to areas of identified needs.

4. A co-operative system between education, industry, labour and government should be developed to improve the transition of students from school to work.

5. Counselling and career education systems need improvement and development, to change negative attitudes toward school, work and society in general.

6. Collaboration between key segments of the employment community (e.g. business, industry, organized labour and government) should be improved to allow for better forecasting and planning of human and other resources.

7. In-service training for the educators is required to allow for updating and expansion of teacher competencies.

8. The coordination between vocational and academic curriculum should be improved to ensure that all students acquire the basic skills of reading, communication and mathematics.

9. An accessible central information bank should be developed to maintain current career and vocational information.

10. The needs of socially defined minorities have a low priority in the views of the respondents.

11. Safety and related training has a low priority in the opinion of most respondents.

12. The needs expressed in various U.S. assessments are similar to the needs perceived in Manitoba. Effective responses to some of these needs have been developed and are described and catalogued at The National Center for Research in Vocational Education, The Ohio State University.

13. The Dual system of vocational education as practiced in West Germany contains many components that may be of practical value in improving the productivity of the Manitoba vocational education system.

Recommendations

1. A needs assessment is only the beginning. This subjective assessment can only point out general areas of

need and suggest a direction for the future. It should be followed by objective assessments in the prime areas of concern. The objective needs assessments will provide the specific information that is necessary for remedial action.

2. As mentioned in Chapter V, a series of meetings have been held with the sponsors of, and the participants in the "Survey of Vocational Industrial Education Needs". Some corrective action has been initiated by the Department of Education in response; particularly in the area of funding replacement equipment in the schools. (see Appendix O) Further meetings are required between the Winnipeg Chamber of Commerce and The Manitoba Department of Education to explore areas of common interest and to establish plans of action in areas of mutual concern.

3. Another general needs assessment or a replication of the needs assessment undertaken in this study in the future, would provide an indicator of the effectiveness of remedial action taken by concerned organizations in the interval. A comparison to the data base established by this needs assessment, should indicate shifts in priorities caused by changes in the Manitoba industrial vocational education environment.

4. The adoption of Bill C-135, The National Training Act, in June, 1982; coupled with the current economic climate in Canada, will have far-reaching effects on vocational education in secondary schools. The implications

of Bill C-135 for secondary vocational education should be closely studied to anticipate some of its effects.

5. Surveys determining the willingness of business and industry to participate in the re-training and up-grading of teachers; such as has recently been completed at the Univerity of Manitoba, (Cap, 1982), should be continued and up-dated constantly to provide in-service training opportunities for practicing teachers.

6. Student placement in schools and in industry should be supported by the establishment of up-to-date data centers, that are accessible by counsellor and student alike. Career guidance programs currently in use in the United States should be studied and suitable programs should be piloted and eventually established in Manitoba.

7. The reasons for the low priority assigned to the needs of minority populations should be investigated.

8. The expense and the problems incurred by Manitoba's vocational schools in trying to maintain their training methods current and to predict the requirements of industry, is another indicator of the difficulties experienced by a school system attempting to carry out the task alone. Industry is the main beneficiary of a well-trained work force. It seems only logical that it must take some of the leadership, responsibility and expense in assuring itself of an adequate succession of skilled workers.

The current trend in the German system (whereby the

schools carry out the basic training in the tenth year and industry accepts the responsibility in the eleventh year) may be a viable model. The basic skills are not as susceptible to technological change, nor as expensive to maintain and implement. The German experience indicates that the vocational education should not be left to post-secondary schools. Their experience has shown that the most productive years with respect to trainability occur in the tenth to thirteenth years of school. The transition from school to workplace is also the easiest during those years.

The time for change may be right at this time -- industry and business are showing considerable interest in vocational schools. In addition, the federal government is making funds available to industry and business for training purposes. (Bill C 135, "The National Training Act").

To protect the youth and ensure a broad education, society must retain control of the system. A sixteen year old is too young to be entirely entrusted to industry and business. A dual system could serve both purposes.

Considering the strong similarity in the perceptions of the needs of industrial vocational education of both the educators and Manitoba industry, a co-ordinated common approach should be feasible. The two sectors cannot ignore each other and expect an orderly succession of a competent work force.

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APPENDIX A

POPULATION DESCRIPTION

AND

PERCENT RETURNS

APPENDIX A

POPULATION DESCRIPTION AND PERCENT RETURNS

1 EDUCATORS

Type	N	Response	% Response
1 Vocational Teachers	214	176	82%
2 Supervisors			
(a) Superintendents	28	24	86
(b) Principals	25	23	92
(c) Vice Principals	31*	25	81
TOTAL	84	72	86
3 Counsellors	39*	23	59
TOTAL EDUCATORS	337	271	80.49

*Due to part time counsellor assignments the number possible is an estimate.

*Due to part time assignment the number possible is an estimate.

EDUCATIONAL LEVEL OF EDUCATORS

Type	N	% Response
Grade XII or equivalent	76	28
Bachelor Degree	99	37
Masters Degree	33	12
PhD or equivalent	3	1
Unknown	60	22
TOTAL	271	100

YEARS OF EXPERIENCE IN VOCATIONAL EDUCATION

NUMBER	EXPERIENCE IN YEARS	%	NUMBER	EXPERIENCE IN YEARS	%
92	1 - 5	34	18	16 - 20	7
87	6 -10	32	13	21+	5
52	11- 15	19	9	unknown	3
		TOTAL	271		100

EDUCATOR

GENDER	MALE	FEMALE	UNKNOWN	TOTAL
No.	235	29	7	271
%	86.7	10.8	2.5	100

VOCATIONAL FIELD OF TEACHERS

AREA	NO.	AREA	NO.
Agriculture	4	Welding	12
Air Conditioning/Refrigeration	0	Commercial Art	9
Auto Body Repair	4	Drafting	8
Carpentry Building Construction	17	Graphic Arts	6
Piping Trades	3	Photography	6
Food Services	10	Institutional Services	1
Cosmetology	7	Jewellery Arts	0
Dental Assisting	0	Theatre/Broadcasting	3
Electrical/Electronics	18	Plastics	0
Family/Community Services	6	Power Mechanics	33
Machine Shop	3	Resource/Environmental Management	2
Sheet Metal	4	Other	13
		Unknown	7

EDUCATOR RETURNS BY SCHOOL DIVISIONS

NO.	DIVISION	N	Response	% Response
1	Winnipeg	61	56	92
2	St. James-Assiniboia	31	22	69
4	St. Boniface	30	29	97
9	River East	31	24	77
10	Seven Oaks	6	0	0
11	Lord Selkirk	26	25	96
12	Transcona-Springfield	8	7	88
15	Hanover	23	21	91
16	Boundary	6	5	83
17	Red River	5	4	80
18	Rhineland	7	2	29
19	Morris-Macdonald	5	1	20
23	Lakeshore	9	7	78
24	Portage la Prairie	6	6	100
31	Beautiful Plains	7	7	100
33	Dauphin Ochre *	21	1	5
35	Swan Valley	15	14	93
39	Rolling River	4	3	75
40	Brandon	23	21	91
2355	Mystery Lake	8	8	100
	Unknown		7	
		337	271	80.4%

* Questionnaires were completed by the division but did not arrive in Winnipeg for processing

EDUCATOR POPULATION DISTRIBUTION

DESCRIPTION	N	% OF POPULATION
Teachers	176	64.9%
Administrators	72	26.6%
Counsellors	23	8.5%
	271	100

II MANITOBA INDUSTRY

Number of Questionnaires mailed by Winnipeg Chamber of Commerce	1500
Number returned to Winnipeg Chamber of Commerce	105
Per cent return	6.6% *

* Member organizations returned a consensus Questionnaire representing the opinion of the organization. Chamber of Commerce Management estimates the number of returns at 16%.

* DISTRIBUTION OF INDUSTRY REPRESENTED

Description	N	%
Agriculture	2	1.7
Business and Repair Services	9	8.1
Construction	6	5.3
Entertainment & Recreation	2	1.7
Finance Insurance & Real Estate	12	10.6
Manufacturing	29	25.7
Mining	0	0
Personal Services	2	1.7
Professional & Related Services	15	13.3
Public Administration	8	7.2
Transportation, Communication	4	3.5
Wholesale and Retail Trades	15	13.3
Others	9	7.9
Total	113	100

* Note frequency count is not precise due to the return of consensus forms by member organizations of the Winnipeg Chamber of Commerce.

APPENDIX B

PANEL OF EXPERTS

APPENDIX B

PANEL OF EXPERTS

RESEARCH ADVISORS

Dr. K. R. Slentz	Professor, Faculty of Education University of Manitoba
T. F. Hercus	Professor, Faculty of Administrative Studies University of Manitoba
Dr. O. Cap	Coordinator of Industrial Education, Faculty of Education University of Manitoba

FIELD ADVISORS

Dr. R. Cross	Assistant Superintendent of Curriculum and Evaluation, River East School Division No. 9
Mr. V. Mollot	Vocational Industrial Consultant, Manitoba Department of Education
Mr. L. Pewarchuk	Department Head, Industrial Design Kildonan-East Regional Secondary School
Mr. A. Cooper	Teacher of Power Mechanics, Kildonan-East Regional Secondary School
Mr. G. Barnes	Assistant General Manager, Winnipeg Chamber of Commerce

APPENDIX C

SURVEY OF VOCATIONAL INDUSTRIAL EDUCATION NEEDS

IN

MANITOBA SECONDARY SCHOOLS

SURVEY INSTRUMENT

Survey of Vocational Industrial Education Needs

In

Manitoba Secondary Schools

PART I. PRIORITY NEEDS:

INSTRUCTIONS: Inside this booklet are 76 statements of vocational education needs. These statements were developed from several thousand problems and goals nominated by vocational educators and from several hundred published recommendations of advisory groups, government sources, professional associations, and research and evaluation efforts.

Please, first read through the list of needs. Then, rate the priority of each need for the vocational education program(s) with which you are concerned. Indicate your rating by circling the appropriate number beside each need. Be sure to rate all needs in the list.

EXAMPLE

	Priority of Need				
	Low		Medium		Higher
Develop methods by which new ideas can be incorporated more rapidly in vocational education.	1	2	3	(4)	5

Even though you may feel almost all items are important, it is necessary to distinguish between higher and lower priority needs. Use the ratings from 1 to 5 to rate the relative priority of need for each statement. A rating of 1 indicates a low priority of need and a rating of 5 indicates a critical need.

A need is an important difference between "what is" and "what ought to be". When rating the priority of a need, consider both the extent of the difference and the importance of reducing the difference.

DIVISION #		
DISTRICT #		

	PRIORITY OF NEED					DO NOT Write in this Space		
	LOWER		MEDIUM		HIGHER			
1. Identify and improve the special skills needed by vocational personnel to work with special groups (e.g., disadvantaged, inner city residents).	1	2	3	4	5	1 O		
2. Evaluate vocational education more effectively (e.g. goal achievement, student outcomes).	1	2	3	4	5	2 E		
3. Develop methods for assisting students in transition from school to work (e.g., job seeking skills, coping with work entry and adjustment, work habits, attitudes).	1	2	3	4	5	3 M		
4. Improve opportunities for all vocational students to acquire the basic skills (e.g., reading communication, math) required for coursework and jobs.	1	2	3	4	5	4 X		
5. Ensure that pre-service preparation of vocational personnel meets present and emerging competency needs.	1	2	3	4	5	5 I		
6. Ensure the relevance of vocational curricula to current job opportunities and practices through effective methods for identifying, selecting, and updating content.	1	2	3	4	5	6 A		
7. Better communicate the benefits and content of vocational education to parents, students, employers, and general educators.	1	2	3	4	5	7 C		
8. Develop organizational and staffing patterns which optimize the effectiveness of personnel and resources.	1	2	3	4	5	8 L		
9. Incorporate new ideas more rapidly in vocational education.	1	2	3	4	5	9 Z		
10. Assist students with special problems (e.g., negative attitudes, absenteeism, dropout potential, financial need).	1	2	3	4	5	10 P		

	PRIORITY OF NEED					DO NOT Write in this Space		
	LOWER		MEDIUM		HIGHER			
11. Improve pre-service and in-service training of teachers in matters related to shop and lab safety.	1	2	3	4	5	11 R		
12. Develop a system for reliable identification of occupationally disadvantaged persons and for prescription of effective educational programs for them.	1	2	3	4	5	12 O		
13. Improve and expand follow-up studies of former students and their employers.	1	2	3	4	5	13 M		
14. Individualize teaching and learning (e.g., teaching techniques, management practices and curriculum) to meet the needs of the individual students.	1	2	3	4	5	14 X		
15. Increase the participation of vocational teachers in supporting activities (e.g., curriculum development, community relations, job placement, follow-up, professional development).	1	2	3	4	5	14 I		
16. Increase collaboration with key segments of the employment community (e.g., business, industry, organized labor, government).	1	2	3	4	5	16 C		
17. Provide personnel to vocational programs from specialized areas (e.g., job placement, special education, remedial basic skills, teaching aids, psychology, social work, nursing, staff development).	1	2	3	4	5	17 L		
18. Improve commitment to vocational education by local chief administrators and governing boards.	1	2	3	4	5	18 Z		
19. Counseling for students with negative attitudes toward work, the education system, themselves and/or others.	1	2	3	4	5	19 P		
20. Improve standards, procedures and funds for upgrading and maintaining safety equipment and practices in shops and laboratories.	1	2	3	4	5	20 R		
21. Improve and expand vocational education to meet the needs of individuals who are elderly	1	2	3	4	5	21 O		

	PRIORITY OF NEED					DO NOT Write in this Space		
	LOWER		MEDIUM		HIGHER			
22. Provide co-ordination among vocational offerings in secondary and post-secondary programs.	1	2	3	4	5	22 C		
23. Co-ordinate comprehensive guidance, counseling, placement and follow-up services with business, industry, service agencies, and manpower information systems.	1	2	3	4	5	23 M		
24. Increase the flexibility of vocational programs to accomodate transfers, entry and exit at various levels of the programs.	1	2	3	4	5	24 X		
25. Improve opportunities for in-service vocational personnel to renew and expand their competencies .	1	2	3	4	5	25 I		
26. Increase co-operation with related educational areas (e.g., industrial arts, career education, pre-vocational education, academic subjects).	1	2	3	4	5	26 C		
27. Improve the effectiveness with which agents (e.g., curriculum consultants, supervisors, teachers) bring about the adoption of valid innovations.	1	2	3	4	5	27 L		
28. Improve procedures and funds for replacement of obsolete equipment.	1	2	3	4	5	28 Z		
29. Flexible procedures for switching programs or transferring to other courses when students discover that they have made the wrong decision.	1	2	3	4	5	29 P		
30. Ensure the inclusion of relevant safety considerations in curriculum content.	1	2	3	4	5	30 R		
31. Improve and expand vocational education to meet the needs of individuals who are natives.	1	2	3	4	5	31 O		
32. Develop practical procedures for measuring the relative cost-effectiveness of program alternatives.	1	2	3	4	5	32 E		
33. Provide opportunity and grants for enrolment of part time vocational students in vocational programs.	1	2	3	4	5	33 M		

	PRIORITY OF NEED					DO NOT Write in this Space		
	LOWER		MEDIUM		HIGHER			
34. Provide strategies for incorporating changes in technology in vocational programs.	1	2	3	4	5	34 X		
35. Maintain current career and vocational information in areas such as job requirements, working conditions, and employment opportunities for various occupational areas.	1	2	3	4	5	35 I		
36. Develop curricula which prepare students for clusters of up to date occupations.	1	2	3	4	5	36 A		
37. Increase co-operation among various levels and departments of vocational education.	1	2	3	4	5	37 C		
38. Improve student-counsellor ratio at the pre-vocational and secondary levels.	1	2	3	4	5	38 L		
39. Improve and expand opportunities for female leadership in vocational education.	1	2	3	4	5	39 Z		
40. Improve and expand vocational education to meet the needs of individuals who are in sparsely populated rural areas.	1	2	3	4	5	40 O		
41. Improve the methods for evaluating vocational personnel.	1	2	3	4	5	41 E		
42. Improve counseling prior to enrolment to assist students in clarifying their purpose for enrolling in vocational education and selecting the right program.	1	2	3	4	5	42 M		
43. Expand opportunities for all students to explore and practice job skills in both community and school settings.	1	2	3	4	5	43 K		
44. Encourage involvement of teachers in in-service education and industry based exploratory and on-the job experiences.	1	2	3	4	5	44 I		
45. Initiate procedures for reviewing and eliminating programs when their enrolment or job opportunities no longer meet pre-determined standards.	1	2	3	4	5	45 A		

DO NOT Write in this Space

		PRIORITY OF NEED							
		LOWER		MEDIUM		HIGHER			
46.	Improve parental awareness of the goals and opportunities available in secondary and post-secondary vocational programs as compared to university.	1	2	3	4	5	46 C		
47.	Improve storage space for supplies and tools.	1	2	3	4	5	47 Z		
48.	Improve and expand vocational education to meet the needs of individuals who are minority group members.	1	2	3	4	5	48 O		
49.	Initiate resource allocation formulae which will allow for differences in the cost of delivering vocational education in urban and rural areas.	1	2	3	4	5	49 E		
50.	Provide an extensive orientation program for entering vocational students to introduce them to the purpose, requirements, daily routine, working conditions, salary ranges, and employment opportunities in various vocational fields.	1	2	3	4	5	50 M		
51.	Improve co-ordination between vocational and academic curricula so that academic courses emphasize vocational application and academic skills are improved within vocational courses.	1	2	3	4	5	51 X		
52.	Increase involvement of the representatives from the manpower community in developing and updating vocational programs.	1	2	3	4	5	52 X		
53.	Provide effective pre-service counsellor education programs for preparing counsellors in vocational guidance.	1	2	3	4	5	53 I		
54.	Improve communication with all general educators (principals, vice-principals, supervisors, superintendents, counsellors and other staff) concerning the goals and content of vocational education.	1	2	3	4	5	54 C		
55.	Improve and expand vocational education to meet the needs of individuals who are limited in English-speaking ability.	1	2	3	4	5	55 O		

	PRIORITY OF NEED					DO NOT Write in this Space		
	LOWER		MEDIUM		HIGHER			
56. Establish firm commitments concerning amounts of and time lines for vocational funding so local divisions may plan and initiate programs on schedule.	1	2	3	4	5	56 E		
57. Encourage enrolment of "college bound students" in vocational programs.	1	2	3	4	5	57 M		
58. Establish systematic initiation of new vocational programs in emerging occupations and fields with expanding employment opportunities.	1	2	3	4	5	58 X		
59. Improve instructional media, such as films, for use in shops, laboratories, and classrooms.	1	2	3	4	5	59 X		
60. Initiate and/or improve procedures for collecting and using personnel evaluation data.	1	2	3	4	5	60 I		
61. Improve communication with middle and high school students through various avenues to convey the career opportunities in secondary and post-secondary vocational programs.	1	2	3	4	5	61 C		
62. Improve and expand vocational education to meet the needs of individuals who are handicapped.	1	2	3	4	5	62 O		
63. Provide formal needs assessment procedures for determining the requirements of the various groups served by vocational education to help establish local priorities and expenditures.	1	2	3	4	5	63 E		
64. Establish a full-time job placement co-ordinator at Vocational Education Centers.	1	2	3	4	5	64 M		
65. Initiate legislation to protect both employers and students from liability for on the job errors or mishaps.	1	2	3	4	5	65 X		
66. Provide strategies for using new ideas in vocational education.	1	2	3	4	5	66 X		

	PRIORITY OF NEED					DO NOT Write in this Space		
	LOWER		MEDIUM		HIGHER			
67. Improve junior high and high school counsellors knowledge about available secondary and post-secondary vocational programs.	1	2	3	4	5	67 C		
68. Improve vocational education programs for early school leavers and unemployed youth.	1	2	3	4	5	68 O		
69. Develop strategies for retrenchment due to decreasing enrolments and limited resource availability.	1	2	3	4	5	69 E		
70. Initiate maintenance of an up-to-date, easily accesible job bank of employment opportunities for vocational students.	1	2	3	4	5	70 M		
71. Provide out of school experience (such as field trips) to introduce students to various aspects of business and industry.	1	2	3	4	5	71 X		
72. Evaluate and determine the relative effectiveness of the various systems of delivering vocational education in Manitoba (e.g., Vocational Schools, Regional High Schools, Comprehensive Schools).	1	2	3	4	5	72 Z		
73. Improve co-ordination with employment agencies (private and public).	1	2	3	4	5	73 C		
74. Encourage enrolment of males and females in vocational programs which have been traditionally dominated by one sex.	1	2	3	4	5	74 O		
75. Improve training of curriculum co-ordinators and supervisors to effectively initiate and supervise valid innovations and changes.	1	2	3	4	5	75 X		
76. Improve business and industry's use of vocational programs as a source of employees.	1	2	3	4	5	76 C		

ONCE YOU HAVE COMPLETED THE RATINGS:

PLEASE, GO BACK and circle 5 ITEM NUMBERS of the STATEMENTS which in your opinion, most urgently need attention.

EXAMPLE: (79) Improve the training of _____

ADD BELOW ANY NEEDS NOT STATED IN THE PREVIOUS LIST WHICH YOU FEEL SHOULD HAVE VERY HIGH PRIORITY.

_____

_____

_____

_____

_____

_____

_____

_____

_____

_____

_____

_____

_____

_____

GO ON TO THE NEXT PAGE

PART II BACKGROUND

Instructions: Place an X in the appropriate box for each item below.

Title of my position is:

- ☐ 1. Consultant
- ☐ 2. Guidance Counsellor
- ☐ 3. Department Head
- ☐ 4. Principal
- ☐ 5. Superintendent
- ☐ 6. Teacher
- ☐ 7. Vice-Principal
- ☐ 8. Other, Please Specify _____

Education:

- ☐ 1. Grade XII or equivalent
- ☐ 2. Bachelor Degree
- ☐ 3. Masters Degree
- ☐ 4. Ph. D or equivalent
- ☐ 5. Journeymen's Certificate or equivalent

A. I have been associated with vocational education for:

- ☐ 1. 1 - 5 years
- ☐ 2. 6 - 10 years
- ☐ 3. 11 - 15 years
- ☐ 4. 16 - 20 years
- ☐ 5. 21 years and over

B. I have been in my present position for:

- ☐ 1. 1 - 5 years
- ☐ 2. 6 - 10 years
- ☐ 3. 11 - 15 years
- ☐ 4. 16 - 20 years
- ☐ 5. 21 years and over

If teaching indicate Vocational Field:

- ☐ 1. Agriculture
- ☐ 2. Air Conditioning/Refridgeration
- ☐ 3. Auto Body Repair
- ☐ 4. Carpentry/Building Construction
- ☐ 5. Piping Trades
- ☐ 6. Food Services
- ☐ 7. Cosmetology
- ☐ 8. Dental Assisting
- ☐ 9. Electric/Electronics
- ☐ 10. Family/Community Services
- ☐ 11. Machine Shop
- ☐ 12. Sheet Metal
- ☐ 13. Welding
- ☐ 14. Commercial Art
- ☐ 15. Drafting
- ☐ 16. Graphic Arts
- ☐ 17. Photography
- ☐ 18. Institutional Services
- ☐ 19. Jewellery Arts
- ☐ 20. Theatre/Broadcasting
- ☐ 21. Plastics
- ☐ 22. Power Mechanics
- ☐ 23. Resource/Environmental Management
- ☐ 24. Other, Please Specify _____

Gender:

- ☐ Female
- ☐ Male

THANK YOU FOR YOUR HELP !!!

PART II BACKGROUND

Instructions: Place an X in the appropriate box for each item below.

Industrial Classification:

- ☐1. Agriculture
- ☐2. Business and Repair Services
- ☐3. Construction
- ☐4. Entertainment and Recreational Services
- ☐5. Finance, Insurance, and Real Estate
- ☐6. Manufacturing
- ☐7. Mining
- ☐8. Personal Services
- ☐9. Professional and Related Services
- ☐10. Public Administration
- ☐11. Transportation, Communication and other Public Utilities
- ☐12. Wholesale and Retail Trades
- ☐13. Other, Please Specify _____

Occupation: (Please print Occupational Title)

Title _____

I have been in this role for _____ years.

APPENDIX E

GERMAN INTERVIEW SCHEDULE

APPENDIX E

Fragebogen

Was sind die Beduerfnisse der Deutschen Berufsausbildung in Bezug auf folgende Kategorien?

a) Aussergewoehnliche Schueler, (bzw. benachteiligt) in folgender Hinsicht:

1) Nicht Deusch sprechende
2) Kulturelle Unterschiede
3) Oekonomische Unterschiede
4) Geschlechtliche Unterschiede

b) Planung und Bewertung in Hinsicht auf:

1) Program Entwurf und Zuele
2) Bewertung existierender Programme
3) Abbau veralteter Programme
4) Einbau neuer Programme

c) Schueler Beratung mit Bezug auf:

1) Karriere Planung und Beratung
2) Uebergang von der Schule zum Arbeitsplatz
3) Arbeitseinsatz

d) Lehrplan und Programmentwicklung mit Bezug auf:

1) Lehrmethoden
2) Flexibilitaet
3) Koordination von Lehre und Beruf
4) Beduerfnisse der Industrie

e) Lehrerausbildung und Weiterbildung

f) Lehrplaninhalt in Bezug auf:

1) Arbeitsnachfrage der Industrie
2) Zusammenzug gleicher Fertigkeiten in verschiedenen Arbeitsfaechern
3) Erhaltung des Mindesstandard in verschiedenen Faechern

g) Verbindung zwischen Verantwortlichen mit Bezug auf:

1) Schule und Industrie
2) Weiterfuehrenden Schulen
3) Schule und Arbeitsaemter
4) Schule und Oberschulamt

h) Auswertung von Schulbetriebspersonal mit Bezug auf:

1) Lehrer Anstellung
2) Lehrerbildung
3) Lehrer - Schueler (Zahlen) verhaeltnis
4) Lehrer - - Aushilfspersonal Verhaeltnis

i) Schulverwaltung mit Bezug auf:

1) Baubeduerfnisse
2) Geraetersetzung und-reparatur
3) Verbindung mit der Hauptverwaltung

j) Probleme mit Schuelern und ihrem Verhalten:

1) Finanzielle Probleme
2) Negatives Verhalten
3) Programmwechsel

k) Unfallschutz mit Bezug auf:

1) Gebaeude und Installationen
2) Unfallschutzausbildung

Haben Sie diese Probleme geloest?

Wie haben Sie die Probleme geloest?

Koennen Sie mir Literatur und Forschungsarbeiten empfehlen die sich mit diesen Fragen beschaeftigen?

APPENDIX F

CORRESPONDENCE WITH DR. NORTON , NATIONAL CENTER FOR RESEARCH IN VOCATIONAL EDUCATION, THE OHIO STATE UNIVERSITY. INTRODUCTION TO WEST GERMAN RESOURCES

OSU

The Ohio State University

THE NATIONAL CENTER
FOR RESEARCH IN VOCATIONAL EDUCATION

1960 Kenny Road
Columbus, Ohio 43210

Phone: 614—486-3655
Cable: CTVOCEDOSU/Columbus, Ohio

October 23, 1980

Mr. G. Pankiewicz
Faculty of Education, Room 419
University of Manitoba
Winnipeg, CANADA R3T 2N2

Dear Mr. Pankiewicz:

I suggest you contact the persons identified on the enclosed letters, etc., regarding West German vocational education.

Please say hello to Orest for me. I hope all is going well for him.

Sincerely,

Robert E. Norton
Senior Research and Development
Specialist

REN/dll

Enclosures

APPENDIX G

WEST GERMAN ITINERARY

APPENDIX G

West German Vocational Industrial Education

German Visitation, April 21 to June 8/81

April 27 to May 1, Bonn

1) Bundesverband der Lehrer an Beruflichen Schulen
(Federal Union of Teachers in Vocational Schools)
Host Business Director - Dr. W. Witt
(B.L.B.S. 5300 Bonn, An Der Esche 2)

2) Vocational Education Institute of Bonn
Host - Dr. W. Witt, Director
(B.L.B.S. 5300 Bonn, An Der Esche 2)

3) Tagung der Bonner Handels & Industrial Kammer (Bildungs Ausschuss)
(Division of the Bonn Chamber of Industry and Commerce for Vocational Education)
Host - Dr. W. Witt
(B.L.B.S. 5300 Bonn, An Der Esche 2)

4) Bundesinstitut fuer Berufsbildung und Forschung (Bonn Division)
(Federal Institute for Vocational Education and Research)
Host - Dr. Krekeler (Fehrbelliner Platz 3 - 1000 Berlin 31)
(or, Friesdorfer Strasse 151 - 153 - 5300 Bonn 2)

5) Kuratorium der Deutschen Wirtschaft fuer Berufsbildung
(Board of Governors of the German Economy for Vocational Education)
Host Business Director - Dr. Ing Pfeuffer
(Buschstrasse 83 - 5300 Bonn 1)

6) Bundes Arbeitsamt
(Federal Manpower Office)
Host - Mr. Grabitz, Director of Vocational Education Career Guidance
Bonn, Duesdorf, Villamambler Str #101

May 4 to May 15, Munich

7) Staatsinstitut fuer Schulpaedagogik
State Institute for Curriculum and Research (Vocational Division)
Host - Dr. Helmerer, Director
(I.S.P. Arabellastrasse 1 8000 Munich 81)

8) Vocational Education Center (Metals and Automotive)
Host - Mr. Horzinger, Director
(See I.S.P.)

9) Vocational Education Center (Food Services and Marketing)
Host - Mr. Schrecker, Director
(See I.S.P.)

10) Siemens A.G. Zentvalbereich
Personal Hauptabteilung Gewerbliche Bildung
Headquarters for Vocational Education
Host - H. Penzerat (Dipl. Ing) Director
(Wittelsbacherplatz 2, D-8000 Munich 2)

11) Siemens A.G. Ausbildungs Centrum
Education Center
Host - K. Morgenfeld, Ing. (grad)
(see above)

May 18 to May 21, Schweinfurt

12) FAG Kugelfisher Georg Schaefer & Co.
Ausbildungs Centrum
(Education Center)
Host - J. Schneider, Dipl Ing. Director
(Postfach 1260 D-8720 Schweinfurt 2)

13) S.K.F. A.G.
Aushildungs Centrum
(Educational Center)
K.D. Gotz Ing.
Host -

May 25 to May 27, Neuss Dusseldorf

14) Landesinstitute fuer Curriculumentwichlung
Lehrer fortbildung and Weiterbilding
(State institute for Curriculum development
Teacher education and Professional Development)
Dr. Schulte Fischedick, General Director of Vocational Branch
Hosts - Dr. Hambusch, Leading Government school Director for
Teacher Education and Professional Development

Dr. Wichterich, Director of Guidance and School Psychology

Ms Elshalz, Director of Education for Non-German students.
(Goerlitzen Strasse 3 4040 Neuss)

15) Dusseldorf Kollegschule
Experimental Comprehensive School
Host - Dr. Melke, State Ministry of Culture and Education
(See Landesinstitut)

May 28 to May 30, Hamburg

16) University of Hamburg
Prof. Dr. H. Lange, Head of Department of Vocational Education
Sedenstrasse 19 2000 Hamburg 13

17) Hamburg Handwerks Kummen
Hamburg Chamber of Tradesmen
Vocational School for Sanitation Trades
Host - Mr. Winter, Director
(See University of Hamburg)

June 1 to June 4, Berlin

18) Bundesinstitut fuer Berufsbildung und Forschung (Headquarters)
Federal Institute for Vocational Education and Research
Hosts: Dr. Walter, Director of Publication
Dr. Pampus, Director of Research
Ms. Klange, Director of Model Experiments in Comprehensive Schools, Vocational Section
(See B.I.B.B. Bonn)

19) Berlin Kollegschule (Marketing)
Model Comprehensive School
Host - Ms. Klange (B.I.B.B. contact)

20) Verein Deutscher Ingeniere
(Union of German Engineers)
125 Anniversary Congress
Host - H.C. Bostroem (Dipl. Ing.)
(Postfach 1139 D-4000 Duesseldorf 1)

APPENDIX H

RANK ORDER

AND

MEANS OF ALL ITEMS BY POPULATION

APPENDIX H

RANK ORDER AND MEANS OF ALL ITEMS BY POPULATION

	EDUCATORS		INDUSTRY		TEACHERS		SUPERVISORS		COUNSELLORS	
RANK	MEAN	ITEM NO.	MEAN	ITEM NO.	MEAN	ITEM NO.	MEAN	ITEM NO.	MEAN	ITEM NO.
1	4.018	46 *	4.152	6	4.244	67	4.042	6	4.435	38
2	4.018	67	3.943	3	4.108	46	3.889	28	4.087	6 *
3	4.007	28	3.876	16	4.080	28	3.847	3	4.087	46
4	3.935	3	3.829	68 *	4.028	4	3.833	58	4.043	23
5	3.930	6	3.829	45	4.017	76	3.794	16	4.000	40 *
6	3.889	76 *	3.819	76	4.006	42	3.778	46	4.000	42
7	3.889	51	3.810	4	4.000	51	3.722	35	3.957	36 *
8	3.878	7	3.800	58	3.983	3	3.681	56 *	3.957	35
9	3.867	42	3.790	42	3.960	7	3.681	7	3.957	51
10	3.823	4	3.752	67	3.915	54	3.681	22	3.913	71
11	3.794	16	3.714	43 *	3.880	53	3.653	23	3.870	19 *
12	3.790	25	3.714	61	3.878	25	3.625	76	3.870	3
13	3.786	58	3.676	46	3.869	6	3.597	51	3.870	7
14	3.779	54	3.657	71	3.841	59	3.583	67	3.870	10
15	3.746	18	3.638	51	3.767	58	3.569	24 *	3.870	25
16	3.742	22	3.610	29	3.756	22	3.569	34	3.870	28
17	3.697	53	3.571	50 *	3.744	16	3.569	29	3.870	68
18	3.657	59	3.571	2	3.705	10	3.556	25	3.826	22 *
19	3.653	23	3.486	7	3.653	57	3.556	5	3.783	58
20	3.643	35	3.438	19 *	3.625	65	3.542	4 *	3.783	24
21	3.631	10	3.438	44	3.608	50 *	3.548	36	3.783	43
22	3.601	19	3.429	54	3.608	20	3.542	61	3.783	44
23	3.565	50	3.419	52	3.608	19 *	3.528	45	3.739	50 *
			3.333	5						
24	3.561	34	3.333	34	3.608	18	3.514	49	3.739	76

] Equal rank

APPENDIX H (cont.)

	EDUCATORS		INDUSTRY		TEACHERS		SUPERVISORS		COUNSELLORS	
RANK	MEAN	ITEM NO.	MEAN	ITEM NO.	MEAN	ITEM NO.	MEAN	ITEM NO.	MEAN	ITEM NO.
25	3.528	70	3.333	73*	3.602	23	3.500	33	3.696	61*
26	3.524	9	3.333	23	3.580	73*	3.486	42	3.696	54
27	3.520	73*	3.224	10	3.580	70	3.472	19*	3.696	9
28	3.520	61	3.305	53*	3.574	35	3.472	54	3.652	53*
29	3.302	71	3.305	62	3.568	34	3.472	2	3.652	39
30	3.515	30	3.305	70	3.331	9	3.440	40	3.652	2
31	3.491	65	3.295	9	3.511	71*	3.431	73	3.652	16
32	3.483	57	3.257	22	3.511	68	3.417	68	3.652	17
33	3.480	5	3.238	31	3.540	43	3.403	50*	3.652	62
34	3.472	58	3.210	41	3.528	26	3.403	9	3.652	67
			3.196	32						
35	3.465	26	3.190	72*	3.511	5	3.389	70*	3.609	56*
36	3.450	44*	3.190	66	3.489	61	3.389	59	3.609	49
37	3.450	20	3.162	36	3.483	44	3.375	10*	3.565	70*
38	3.417	2	3.152	37	3.449	66	3.375	24	3.565	72
39	3.402	66	3.133	28	3.398	52	3.375	26	3.522	31
40	3.391	40	3.091	75	3.364	32*	3.361	43*	3.478	34
41	3.384	29	3.048	24	3.364	2	3.361	72	3.435	33
42	3.365	49	3.048	25	3.324	37	3.333	52	3.348	73*
43	3.362	56	3.029	64	3.318	30	3.292	74*	3.348	45
44	3.347	52	3.019	18	3.301	64	3.292	75	3.309	8
45	3.332	15	3.010	59	3.290	40	3.264	44*	3.277	74
46	3.328	36	3.000	55	3.284	29	3.264	18	3.261	26*
47	3.325	38	2.990	69	3.277	74	3.264	53	3.261	12
48	3.280	37*	2.952	26	3.273	38*	3.250	35*	3.261	13
49	3.280	45	2.905	56	3.273	49	3.250	37	3.217	65*
50	3.277	74	2.876	32	3.227	62	3.250	65	3.217	15
51	3.273	30	2.857	27	3.199	56	3.250	71	3.217	14
52	3.255	62	2.838	8	3.170	45*	3.233	30	3.217	75
53	3.207	75	2.819	1	3.170	75	3.222	27*	3.174	66

Equal rank

APPENDIX H (cont.)

	EDUCATORS		INDUSTRY		TEACHERS		SUPERVISORS		COUNSELLORS	
RANK	MEAN	ITEM NO.	MEAN	ITEM NO.	MEAN	ITEM NO.	MEAN	ITEM NO.	MEAN	ITEM NO
54	3.207	53*	2.819	12	3.159	36	3.222	20	3.133	27
55	3.207	54	2.810	15	3.148	31	3.222	8	3.130	48*
56	3.196	55*	2.771	63	3.136	8	3.194	62	3.130	4
57	3.196	33	2.752	57	3.125	47	3.167	17	3.130	18
58	3.173	17*	2.733	17	3.114	17*	3.153	12	3.130	57
59	3.173	8	2.724	74	3.114	69	3.139	1	3.130	64
60	3.133	27	2.714	30*	3.097	27	3.181	52	3.087	59
61	3.129	24	2.714	33	3.080	1	3.097	38	3.093	37
62	3.092	1	2.695	40*	3.040	33	3.083	13	3.043	1
63	3.055	69	2.695	60	3.023	41	3.056	63	3.043	29
64	3.037	12	2.638	65	3.000	14	3.014	32	3.043	30
65	3.033	13	2.629	14	2.783	13	3.000	11	3.043	55
66	3.067	14	2.619	20	2.972	11*	2.958	64*	3.000	63
67	2.970	41	2.610	11	2.972	15	2.958	14	3.000	52
68	2.945	47	2.571	49	2.960	12	2.958	15	3.000	5
69	2.930	11	2.562	39	2.943	24	2.931	69	3.000	3
70	2.919	68	2.524	38	2.892	48	2.861	41	2.957	20
71	2.897	48	2.476	48	2.858	55	2.833	48	2.913	41
72	2.863	70	2.457	13	2.852	63	2.819	55	2.870	32
73	2.756	71	2.400	21	2.830	21	2.792	39	2.696	60
74	2.734	32	1.657	47	2.676	66	2.694	60	2.565	11
75	2.732	21			2.625	39	2.653	47	2.478	47
76	2.683	60			2.242	72	2.611	21	2.261	21

* equal rank

APPENDIX I

VOCATIONAL EDUCATION NEED STATEMENTS

GROUPED BY CATEGORY

APPENDIX I

VOCATIONAL EDUCATION NEEDS STATMENTS GROUPED BY CATEGORY

Item No.

I SPECIAL LEARNER GROUPS

(1) Identify and improve the special skills needed by vocational personnel to work with special groups (e.g., disadvantaged, inner city residents).

(12) Develop a system for reliable identification of occupationally disadvantaged persons and for prescription of effective educational programs for them.

(21) Improve and expand vocational education to meet the needs of individuals who are elderly.

(31) Improve and expand vocational education to meet the needs of individuals who are natives.

(40) Improve and expand vocational education to meet the needs of individuals who are in sparsely populated rural areas.

(48) Improve and expand vocational education to meet the needs of individuals who are minority members.

(55) Improve and expand vocational education to meet the needs of individuals who are limited in English-speaking ability.

(62) Improve and expand vocational education to meet the needs of individuals who are handicapped.

(68) Improve vocational education programs for early school leavers and unemployed youth.

(74) Encourage enrolment of males and females in vocational programs which have been traditionally dominated by one sex.

II PLANNING AND EVALUATION

(2) Evaluate vocational education more effectively (e.g. goal achievement, student outcomes).

(32) Develop practical procedures for measuring the relative cost-effectiveness of program alternatives.

(41) Improve the methods for evaluating vocational personnel.

II PLANNING AND EVALUATION - continued

(49) Initiate resource allocation formulae which will allow for differences in the cost of delivering vocational education in urban and rural areas.

(56) Establish firm commitments concerning amounts of and time lines for vocational funding so local divisions may plan and initiate programs on schedule.

(63) Provide formal needs assessment procedures for determining the requirements of the various groups served by vocational education to help establish local priorities and expenditures.

(69) Develop strategies for retrenchment due to decreasing enrollments and limited resource availability.

III STUDENT SERVICES

(3) Develop methods for assisting students in transition from school to work (e.g., job seeking skills, coping with work entry and adjustment, work habits, attitudes).

(13) Improve and expand follow-up studies of former students and their employers.

(23) Co-ordinate comprehensive guidance, counselling, placement and follow-up services with business, industry, service agencies, and manpower information systems.

(33) Provide opportunity and grants for enrollment of part time vocational students in vocational programs.

(42) Improve counselling prior to enrollment to assist students in clarifying their purpose for enrolling in vocational education and selecting the right programs.

(50) Provide an extensive orientation program for entering vocational students to introduce them to the purpose, requirements, daily Routine working conditions, salary ranges, and employment opportunities in various vocational fields.

(57) Encourage enrollment of "college bound students" in vocational programs.

(64) Establish a full-time job placement co-ordinator at Vocational Education Centres.

(70) Initiate maintenance of an up-to-date, easily accesible job bank of employment opportunities for vocational students.

IV CURRICULUM AND PROGRAM DEVELOPMENT

(4) Improve opportunities for all vocational students to acquire the basic skills (e.g., reading communication, math) required for coursework and jobs.

(14) Individualize teaching and learning (e.g., teaching techniques, management practices and curriculum) to meet the needs of the individual students.

(24) Increase the flexibility of vocational programs to accommodate transfers, entry and exit at various levels of the programs.

(34) Provide strategies for incorporating changes in technology in vocational programs.

(43) Expand opportunities for all students to explore and practice job skills in both community and school settings.

(51) Improve coordination between vocational and academic curricula so that academic courses emphasize vocational application and academic skills are improved within vocational courses.

(52) Increase involvement of the representatives from the manpower community in developing and updating vocational programs.

(58) Establish systematic initiation of new vocational programs in emerging occupations and fields with expanding employment opportunities.

(59) Improve instructional media, such as films, for use in shops, laboratories, and classrooms.

(65) Initiate legislation to protect both employers and students from liability for on the job errors or mishaps.

(66) Provide strategies for using new ideas in vocational education.

(71) Provide out of school experience (such as field trips) to introduce students to various aspects of business and industry.

(75) Improve training of curriculum coordinators and supervisors to effectively initiate and supervise valid innovations and changes.

V STAFF DEVELOPMENT

(5) Ensure that pre-service preparation of vocational personnel meets present and emerging competency needs.

(15) Increase the participation of vocational teachers in supporting activities (e.g., curriculum development, community relations, job placement, follow-up, professional development).

(25) Improve opportunities for in-service vocational personnel to renew and expand their competencies.

(35) Maintain current career and vocational information in areas such as job requirements, working conditions, and employment opportunities for various occupational areas.

(44) Encourage involvement of teachers in in-service education and industry based exploratory and on-the job experiences.

(53) Provide effective pre-service counsellor education programs for preparing counsellors in vocational guidance.

(60) Initiate and/or improve procedures for collecting and using personnel evaluation data.

VI CURRICULUM CONTENT

(6) Ensure the relevance of vocational curricula to current job opportunities and practices through effective methods for identifying, selecting, and updating content.

(36) Develop curricula which prepare students for clusters of up-to-date occupations.

(45) Initiate procedures for reviewing and eliminating programs when their enrollment or job opportunities no longer meet predetermined standards.

VII INTRA-INTER-AGENCY COMMUNICATIONS

(7) Better communicate the benefits and content of vocational education to parents, students, employers, and general educators.

(22) Provide co-ordination among vocational offerings in secondary and post-secondary programs.

(26) Increase co-operation with related educational areas (e.g., industrial arts, career education, pre-vocational education, academic subjects).

VII INTRA-INTER-AGENCY COMMUNICATION - continued

(37) Increase co-operation among various levels and departments of vocational education.

(46) Improve parental awareness of the goals and opportunities available in secondary and post-secondary vocational programs as compared to university.

(54) Improve communication with all general educators (principals, vice-principals, supervisors, superintendents, counsellors and other staff) concerning the goals and content of vocational education.

(61) Improve communications with middle and high school students through various avenues to convey the career opportunities in secondary and post-secondary vocational programs.

(67) Improve junior high and high school counsellors knowledge about available secondary and post-secondary vocational programs.

(73) Improve co-ordination with employment agencies (private and public).

(76) Improve business and industry's use of vocational programs as a source of employees.

(16) Increase collaboration with key segments of the employment community (e.g., business, industry, organized labor, government).

VIII STAFF UTILIZATION

(8) Develop organizational and staffing patterns which optimize the effectiveness of personnel and resources.

(17) Provide personnel to vocational programs from specialized areas (e.g. job placement, special education, remedial basic skills, teaching aids, psychology, social work, nursing, staff development).

(27) Improve the effectiveness with which agents (e.g., curriculum consultants, supervisors, teachers) bring about the adoption of valid innovations.

(38) Improve student-counsellor ratio at the pre-vocational and secondary levels.

IX MANAGEMENT

(9) Incorporate new ideas more rapidly in vocational education.

(18) Improve commitment to vocational education by local chief administrators and governing boards.

(28) Improve procedures and funds for replacement of obsolete equipment.

(39) Improve and expand opportunities for female leadership in vocational education.

(47) Improve storage space for supplies and tools.

(72) Evaluate and determine the relative effectivenss of the various systems of delivering vocational education in Manitoba (e.g., Vocational Schools, Regional High Schools, Comprehensive Schools).

X STUDENT AND BEHAVIOR PROBLEMS

(10) Assist students with special problems (e.g., negative attitudes, absenteeism, dropout potential, financial need).

(19) Counselling for students with negative attitudes toward work, the education system, themselves and/or others.

(29) Flexible procedures for switching programs or transferring to other courses when students discover that they have made the wrong decision.

XI SAFETY

(11) Improve pre-service and in-service training of teachers in matters related to shop and lab safety.

(20) Improve standards, procedures and funds for upgrading and maintaining safety equipment and practices in shops and laboratories.

(30) Ensure the inclusion of relevant safety considerations in curriculum content.

APPENDIX J

FREE RESPONSES

BY

INDUSTRIAL PERSONNEL

TEACHERS, SUPERVISORS

AND

GUIDANCE COUNSELLORS

EDUCATION COMMENTS

TEACHERS' COMMENTS

1. Allowance of time for proper set up and organizing of a program when starting a new course.

2. (a) I think that we must stress the link between academic achievement and the knowledge gained in this field and the knowledge required in any academic subject.

   (b) The first priority, however, is for the Department of Education and all administrators to establish what they want from Vocational Education. Do they want to keep students in school or do they want the graduates of vocational programs to meet industry standards.

3. (a) Preparation time for vocational teachers.

   (b) Curriculum writers or time to develop curriculum.

4. (a) Vocational educators should be forced to go back to industry for six months to one year out of every five years so as to up-date themselves with new developments.

   (b) University degree course for vocational people should be more trades orientated as most trades teachers would refuse to teach most academic courses. The U.S. has better programs in this matter.

5. (a) A central bank of resource materials for vocational teachers.

   (b) Coordinate resource materials for all regional and comprehensive schools.

6. There should be a very compulsory apprenticeship program to improve the quality of workmanship.

7. After we teach the basics and the skills we should be teaching how to cope with the future.

8. Attempt to dispel the myth that is so prevelant that vocational courses are less demanding and less rewarding than academic programs.

9. To eliminate the prevailing attitude that vocational education is an education for the chaffe of the academic process. Our interest must tie in with a developing "Industrial Strategy". That should model European and Japanese use of vocational and technological institutions.

10. Students should be more thoroughly screened before being placed in a vocational area. In a lot of cases the students are not serious about the vocational area they are in and as a result a great deal of time and money is wasted.

TEACHERS' COMMENTS - continued

17. (a) The need of more studies about the value of our lives and the family appreciation.

    (b) Find ways to help rural areas grow and attract industries to move in.

18. Parents in divisions lacking vocational facilities should be provided with the information concerning the opportunities available in the divisions that have these facilities. Every student should have access to a vocational education.

SUPERVISORS' COMMENTS

1. To state all needs in a format which is readily translateable into English.

2. (a) There has to be continuous and on-going meeting between the school and the business community so that programs in the schools are current and up-to-date as industry wants them. (In Manitoba's case this is not the usual practice.)

    (b) Vocational programs should be geared to specific direction in jobs. We spend our energies training students for general rather than specific skills.

    (c) Vocational programs should be more flexible with respect to entry and exit, opportunity to graduate in three years with an academic and vocational certificate.

3. Coordination of manpower needs (forecast) and skill training in industry or schools.

4. Develop some strategy by which present vocational educators could see the benefits of multi-subject teaching. This would improve the inclusion of career awareness into the academic area as well as allow the vocational teacher insight into the problems and concerns experienced by all teachers.

5. It would be useful to have a mechanism to allow teachers of vocational subjects to take a semester or longer after so many years of teaching (five years) to upgrade in industrial teaching area. This is only feasible with job security and with no loss in pay. School division boards are dragging their feet in this area.

6. Need for the Department of Labour to state clearly what the course in question will offter the student in terms of immediate employment and or status in regards to further education in the same field.

7. Have a qualified well informed vocational counsellor visit areas remote from employment areas.

SUPERVISOR'S COMMENTS - continued

8. More school counsellors. There should be counsellor grants by formula as there are for resource/special education teachers etc.

9. This survey assumes that there are sufficient vocational opportunities in Manitoba and that these should be improved. The first priority is to extend programs to all high schools. As students it is necessary to leave the local high school to seek some exposure to vocational programs. As well, the 50% vocational rule is a handicap to many high school students who want some exploratory experiences prior to making a commitment.

10. Provide opportunities to students in regular programs to follow one or more vocational options.

GUIDANCE COUNSELLORS

1. (a) The need to assess schools such as ours differently where monies and staffing are concerned because (a) we may have a low student/teacher ratio in a Grade 12 vocational industrial class should not mean that this class should be cancelled or that an academic class has to be that much larger in size.

   (b) "Comprehensive" schools such as ours tend to attract, traditonally, the problem students from surrounding divisions, classes should and ought to be smaller in size.

2. Apprenticeship programs- I find it surprising that you do not ask about the Manitoba Apprenticeship system. The system here in Manitoba is dead thanks to the efforts of industry and unions. I think many of the items are unclear and confusing. I will read the results of the survey with that in mind. The need to write clear items is a high priority.

3. (a) A need for an extensive follow-up program for students who have graduated from vocational schools.

   (b) Need for training students to adjust and adapt to changing situations on the job.

4. It is difficult to create realistic work situations in certain areas, but greater emphasis on perfection and high-skill achievement is necessary. Maybe provincial "Inspections" in specific areas would be helpful.

CHAMBER OF COMMERCE COMMENTS

1. (a) There should be a clear operationally applicable statement of what the various agencies involved in vocational education are collectively trying to achieve a) over the short run - 5 years
b) over the long run - 30 years

   (b) Resources available for vocational education should be managed visibly to achieve those objectives.

   (c) This would be more than likely to bring about the coordinated action and introduction of innovation than trying to get agreement of 76 different issues.

2. Need to introduce and foster the European attitude that graduates of vocational and trade schools are a vital component of business and industry. The British system of higher National Certificate Diplomas together with "sandwich courses" would go far to correcting our problems.

3. Check with professional organizations like Manitoba Tool and Machining Association for training requirements.

4. Start earlier in school life (i.e. Junior High) to integrate knowledge of alternatives to university; using positive reinforcement regarding value and worth of vocational training and a better understanding of the business world in general.

5. A public relations program to improve the image of vocational institutes and raise them to the status that they have already achieved in other provinces. For example: The Chamber of Commerce is working in conjunction with the University of Manitoba. Why no mention of Red River Community College when talking vocational training? The survey seems slanted toward instituting the idea of having counsellors at the high school level and more surveys and studies etc. A good P.R. program would do a better job of steering students to vocational training.

6. (a) All students on graduating should be able to do general math, including: percentages decimals ratios proportions, read, write legibly, use grammar properly and be able to compose a letter. There should be proper coordination and co-relations between the leaving requirement of one level of education to another, from the secondary schools to junior high to senior high to University to vocational etc. The curriculum should be keyed to what is Need in the business world and it should be the business/professional sector that is consulted as to what is needed and less to having students or "Philosophy majors" saying what they feel should be taught.

   (b) The teacher/counsellors should not advise the students that they can get such and such a salary upon graduation when these figures are far from what the market place is offering.

CHAMBER OF COMMERCE COMMENTS - continued

7. TEACH STUDENTS THAT "THERE AIN'T NO FREE LUNCHES".....

8. Teach how important dedication to a particular career is.

9. (a) Deal with the archaic requirements in Manitoba to achieve journeyman status. Currently a welder at Tec-Voc or R.B. Russell receives no credit whatsoever for his training. Red River Community College does not do journeyman courses, although some coursework for journeymen does take place there.

   (b) Stop the incredible overlap and competition for job placement/job experience via a Provincial Manpower co-ordination function. Currently each J.E.T. program recruits its own placement in competition.

10. (a) Establish and encourage formal industrial apprenticeship programs in the skilled trades, as is done more extensively in Europe than in Canada.

    (b) The birth rate in Manitoba and in Canada has fallen well below the replacement rate. This suggests landed immigrants in rather large numbers will be needed to fill out the labor force. Serious attention should therefore be given the vocational training of newly landed immigrants for jobs available in Manitoba. (This is more likely to be a major need in the medium to long term, rather than immediately, but it should be a factor in strategic planning).

11. (a) All aspects appear to be listed in a "redundant" way.

    (b) What industry needs in terms of vocational pre-employment training is leadership, not CIVIL SERVICE PASSIVITY" !!! It needs professional commitment. It needs trainers not teachers. Models, not lecturers, applied technology, not academic jargon.

12. Attitude and work ethic require most attention - most prospective employees have but one thing on their minds, short hours of work, big pay. This group approximates 90% of all applicants and 100% of non-employable applicants. It is rare indeed to have an applicant who is willing to and able to deliver a fair days work for a fair days pay.

13. The essence of the important items is circled, in my opinion is to re-establish in people's minds that vocational training is not a second rate education.

14. Need at the secondary education level for courses is the need for private enterprise within a state, its costs and benefits.

CHAMBER OF COMMERCE COMMENTS - continued

15. (a) 76 items leave one in a state of confusion, but a factual evaluation and continual update of types of employment that exist in the community must be top priority. To prepare young people for jobs that aren't is a waste of time.

(b) Establish as much visitation of various work places early in the youth's vocational guidance as possible. On the job is seldom as ideal as the classroom.

(c) Make cooperative experience between employer and classroom a minimal risk or liability to the employer. One lawsuit from an indignant parent can put a small company out of business.

16. (a) I found this somewhat difficult to understand, so hope it makes sense.

(b) It may be better to let students apprentice for a while in order to find out whether or not they have the aptitude for interest in various vocations. It certainly makes it easier for them to learn when they have an understanding of the future work place and its needs. They should be encouraged to "learn" rather than to depend on "teaching".

(c) Encourage them to take more initiative, to lead or experience rather than sit-back and wait to be led or instructed.

17. (a) Sorry but can't understand most of your questions! Make it simple and direct maybe then I could help you.

(b) My answer to vocational training improvement is to force higher qualifications in the trades in general, forcing the secondary system to meet these higher needs for entrance.

18. (a) The attitude of most young people towards work is one of the major problems in the world today.

(b) The feeling that someone owes them a living must be discouraged.

19. (a) In a nutshell, the business community has existed a lot longer than the educational system. Upon graduating from high school or university, all the students come to the business community for employment. But yet there is very little input into the education system from the business community because the educators consider themselves the experts and have turned a deaf ear to the business community.

(b) Why do approximately 75% of the high school graduates not know what they want to do? Why do approximately 50% of first year students at university quit? Why are approximately 75% of the working people dissatisfied with their job? BECAUSE 80% of society does not understand some of the simple basic principles of SUCCESS. People who have

CHAMBER OF COMMERCE COMMENTS - continued

succeeded in business have proved that they understand what these are. If these principles were taught to the high school students, Grade 9-12 on a weekly basis we would not be in the economic mess that proved those theories themselves, continue to ponder the question "what's it all about, What's the use, I give up."

(c) I feel very strong that if the students had weekly input from the business community things can improve.

20. (a) I am very surprised that practically all of the questions have to do with staff and instituting new strategies or methods for improving vocational training. While all such improvements are desirable, many of them are self-evident such as questions 75, 66, 41, etc.

(b) It surprises me that only about six or seven questions are addressed specifically to the student and what he needs or requires to equip himself for worthwhile positions in the economy.

(c) From the writer's personal experience with students, it comes down to the old basics, that they cannot write legibly, they cannot spell, they cannot do simple arithmetic and their grammer is atrocious. While these are basic academic skills they are a necessary prerequisite to a mechanic as well as a office clerk.

(d) To this extent I think the whole questionnaire is badly slanted and is going to come up with a lot of suggestions that will only add to the bureaucracy overhead and not improve the education of students.

TEACHERS' COMMENTS - continued

11 (a) Students should receive credit on graduation for vocational area.

(b) Closer relations with administration and vocational teacher.

(c) Students should have priority to change shops and explore, when they have problems in academic programs.

12. There is a sad lack of knowledge on the part of counsellors (in the school) as to what Vocational Industrial education really is. Thus students end up in major areas because their friends are there etc.

13. (a) Students needs assessment is essential prior to curriculum development in-service of teachers in vocational areas of development of "clusters" concept for student needed.

(b) Co-ordinators for vocational education in a division need expertise in P.R. and community support for field experience placement.

(c) Cooperating community agencies offering field experience need specific tasks deliniation for student experiences agreed to by high school student, and agency.

(d) All vocational teachers MUST be required (for certification) to complete their education competencies within a time frame of not more than 3-4 years.

(e) All vocational teachers should teach in their area of expertise.

14. (a) Special time and fund allotments should be considered for the development of new curriculum materials such as: study-aids, hand outs, evaluation, slides, VTR films, updating of vocational soft ware in general.

(b) Money should be allocated to the instructor himself, who may be in need of this resource, when creating new or up-dating existing programs.

(c) Foreign texts should be purchased in order to compare standards in other parts of the world. Libraries should be more shop orientated and updated.

15. Vocational education should not be used as a dumping ground for students. The students enrolling in vocational programs require the same amount of intelligence as students enrolled in academic programs.

16. Provision for vocational teachers to go back to industry with full pay and benefits to upgrade every so many years.

APPENDIX K

CORRESPONDENCE WITH WINNIPEG CHAMBER OF COMMERCE

The Winnipeg Chamber of Commerce

November 28, 1982

Mr. Gerry Pankowitz
Kildonan East School Division
845 Concordia Street
Winnipeg, Manitoba
R2K 2M6

Dear Gerry,

This letter will confirm that The Winnipeg Chamber of Commerce regards 16% as a good return on the vocational survey.

It is common in most of our surveys to expect approximately a 10% return, so that we commend Gerry on his survey.

We would like to thank Gerry and his support workers for their hard work in this project. We are looking forward to working with the results.

Sincerely,

Dawn Dempsey

DAWN DEMPSEY
Program and Membership
Services Manager

DD/lhc

APPENDIX L

CORRESPONDENCE

WITH

SUPERINTENDENTS

The Vocational section of the Department of Curriculum, Mathematics and Natural Sciences, Faculty of Education, the University of Manitoba with support from the Department of Education is undertaking an assessment of vocational industrial education needs.

The purpose of this undertaking is to identify the priorities of vocational industrial education in secondary schools as perceived by education and by the business community. The accumulated data will significantly aid in the planning and goal setting process of Manitoba's high schools offering vocational programs. This process is particularly crucial at this time, in view of the continuing economic paradox of unemployment occurring simultaneously with a shortage of skilled labour.

The target population of the study will be; superintendents, principals and vice-principals concerned with vocational industrial education and all vocational industrial teachers and counselors. A representative sample of industry and business will be asked to respond to a similar instrument. Individual responses will remain anonymous. The completed study will be made available to all concerned organizations.

The purpose of this letter is to seek your permission to initiate the proceedings and to administer the instrument to the identified personnel in you division. A copy of the instrument is attached to this letter. Should you have any concerns or questions please do not hesitate to contact me at 474-9084. I will be getting in touch with you at a later date regarding your permission and specific arrangements for your area.

Thank you for your consideration of this request.

Yours truly,

G. Pankiewicz,
Survey Coordinator

GP/dmp
Attachment

The University of Manitoba
Faculty of Education

Department of Curriculum
Mathematics and Natural Sciences

Winnipeg, Manitoba, Canada R3T 2N2

April 1981.

Dear Fellow Educator:

The Vocational section of the Department of Curriculum, Mathematics and Natural Sciences, Faculty of Education, the University of Manitoba and the Winnipeg Chamber of Commerce with support from the Department of Education is undertaking an assessment of vocational industrial education needs.

The purpose of this study is to identify the priorities of vocational industrial education in secondary schools as perceived by education and by the business community. Your response will significantly aid the planning and goal setting process for Manitoba's vocational high schools. The process is particularly crucial at this time, in view of the continuing economic paradox of unemployment occuring simultaneously with a skilled labor shortage.

The survey is composed of two parts. The first contains 76 statements that are divided into the following broad categories.

1. Special learner groups
2. Planning and evaluation
3. Student services
4. Curriculum and program services
5. Staff development
6. Curriculum content
7. Intra-inter agency communication
8. Staff utilization
9. Management
10. Student and behavior problems
11. Safety

The items for the categories are distributed randomly in order to prevent unintentional bias toward any one category.

Part two of the survey requests background information, which will facilitate the analysis of the data with respect to the requirements of specific trade groups, respondent groups and geographic regions.

Vocational Industrial teachers, guidance counsellors vice-principals, principals and superintendents associated with vocational industrial education will be asked to respond to the education portion of the survey.

Thank you for your interest and assistance in this project.

Yours truly,

G. Pankiewicz,
Survey Coordinator

APPENDIX M

PRELIMINARY REPORT

QUESTIONNAIRE

E UNIVERSITY OF MANITOBA
om 423

FACULTY OF EDUCATION
Department of Curriculum:
Mathematics and Natural Sciences

Winnipeg, Manitoba
Canada R3T 2N2

Dear Fellow Educator:

Enclosed is a preliminary report summarizing the results of the "Survey of Vocational Industrial Education Needs in Manitoba's Secondary Schools" conducted in April 1981.

The intent of the preliminary report is to provide initial feedback to the participants of the survey. Please make the report available to the participants in your division or school. I hope the information contained, will prove interesting and be of use to all concerned.

Any comments or suggestions would be appreciated.

Once again thank you for your patience, assistance and interest.

Yours truly,

G. Pankiewicz,
Survey Coordinator

GP/dmp
Encl.

PREFACE

This preliminary report is intended to provide initial feedback and overall impressions to the sponsors and participants of this study. It is not designed for publication at this stage. A final report will be available in the near future. Any use of the material in whole or in part is prohibited without the written consent of the author, The Manitoba Department of Education and The Winnipeg Chamber of Commerce.

The author would appreciate any comments or suggestions regarding this report with respect to the following:

1. Modifications for the final report
2. Relevance of the included interpretations
3. Additional areas for analysis of data
4. Value of information presented
5. General comments and/or impressions

Please forward any comments to:

G. Pankiewicz,
Department of Curriculum, Mathematics and Natural Sciences,
Faculty of Education, Room 423,
University of Manitoba,
Winnipeg, Manitoba,
R3T 2N2.

APPENDIX N

CRONBACH ALPHA

RELIABILITY COEFFICIENTS

Appendix N

Cronbach Alpha Reliability Coefficients

EDUCATORS		
Category	Cronbach Alpha Coefficients	Number of Items
Special Learner Groups	.80	10
Planning and Evaluation	.70	7
Student Services	.64	9
Curriculum and Program Development	.80	13
Staff Development	.70	7
Curriculum Content	.49	3
Intra-Inter-Agency Communication	.81	11
Staff Utilization	.54	4
Management	.54	6
Student and Behavior Problems	.55	3
Safety	.76	3
Overall	.71	76

INDUSTRY		
Category	Cronbach Alpha Coefficients	Number of Items
Special Learner Groups	.89	10
Planning and Evaluation	.78	7
Student Services	.78	9
Curriculum and Program Development	.80	13
Staff Development	.71	7
Curriculum Content	.61	3
Intra-Inter-Agency Communications	.81	11
Staff Utilization	.59	4
Management	.64	6
Student and Behavior Problems	.74	3
Safety	.78	3
Overall	.76	76

APPENDIX O

CORRESPONDENCE

WITH

MANITOBA DEPARTMENT OF EDUCATION

MANITOBA

DEPARTMENT OF EDUCATION

Program Development and Support Services
Robert Fletcher Building
Room 311 — 1181 Portage Avenue
Winnipeg, Manitoba
R3G 0T3

February 3, 1981.

Mr. G. Pankiewicz,
Department of Curriculum,
Faculty of Education,
University of Manitoba,
Fort Garry Campus,
WINNIPEG, Manitoba.
R3T 2N2

Dear Mr. Pankiewicz:

Thank you for your letter of January 2nd requesting departmental support for your projected "Survey of Industrial Vocational Education Needs in Secondary Schools".

For reasons which will probably be obvious to you, it has not been the policy of the Department of Education to assist doctoral candidates with their thesis work. However, the outline of your Survey, plus the comments we have received from Mr. Zaboroski, do suggest certain benefits which the department might derive from such a study. Therefore I have requested Mr. Zaboroski to consult with you immediately and to present to me within two weeks, for a policy decision, a brief but specific summary of the specific benefits which we might derive from your Survey which will be of assistance in our on-going review of vocational education in the province.

You can expect a call from Frank on this, and I would request your cooperation with him in the hope that a mutually beneficial result may eventuate.

Yours sincerely,

er.

GMD/bp.

MANITOBA

DEPARTMENT OF EDUCATION
Curriculum Development and
Implementation Branch
Telephone: 786-0317
Robert Fletcher Building
411 — 1181 Portage Avenue
Winnipeg, Manitoba
R3G 0T3

January 21st, 1983.

Mr. G. Pankiewicz,
56 Gemini Avenue,
Winnipeg, Manitoba,
R2G 0T6.

Dear Mr. Pankiewicz:

I wish to express my sincere appreciation for your interest and efforts in conducting your recent vocational industrial education needs assessment.

Your survey of vocational educators, administrators and representatives of business and industry has certainly resulted in a wealth of information related to the needs in this area as perceived by the participants. The scope of the survey and the indepth analysis of this data, as published in your recent report, has proven to be an extremely comprehensive and welcome addition to the bank of data available in this area.

Although each of the needs identified warrants further investigation and appropriate subsequent action, of particular concern to me, is the need to improve communication with and between all agencies involved in the training and eventual employment of the student. As a result, measures have been taken which I anticipate will help to achieve this objective.

As in the past, your continued assistance in developing strategies to meet the identified needs is greatly appreciated.

Best regards,

nsultant