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ABSTRACT

A study investigated the feasibility of cooperation and sharing of secondary vocational education facilities and programs of the Duluth, Hermantown, and Proctor School Districts, Minnesota. Focus was on formal creation of a cooperative center. A walk-through inspection was conducted of secondary vocational education classrooms and facilities in the three school districts. New directions in vocational education were also considered, because due to rapidly expanding technology and the need to maintain facilities and equipment current with technology the three districts would perhaps benefit from cooperation in vocational education. An estimate of student demand for programs that might be offered through a cooperative center was prepared by use of a student survey at the Hermantown and Proctor School Districts, enrollment projections, and demand calculations based on experience of the Duluth School District. Optional methods for calculating a local district share of the cost of operating a cooperative center were also devised. Other issues regarding creating and operating a cooperative center were considered, including staff options, ownership of facilities, efficient use of teacher and student time, and restriction to secondary vocational education or inclusion of other courses.

(YLB)

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Final Report

Project No. 02-R-81

Hermantown, Duluth, Proctor Vocational
Education Feasibility Study

Research and Development Project
in Career Education
Vocational

Conducted Using Funds Provided by the
Division of Vocational-Technical Education
Minnesota Department of Education
Under Subpart 3, Program Improvement and
Supportive Services, P.L. 94-482

The project reported herein was performed pursuant to a contract from the Division of Vocational-Technical Education, Minnesota Department of Education. Contractors undertaking such projects under Division sponsorship are encouraged to express freely their professional judgment in the conduct of the project. Points of view or opinions stated, therefore, do not necessarily represent official Division position or policy.

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December 8, 1981

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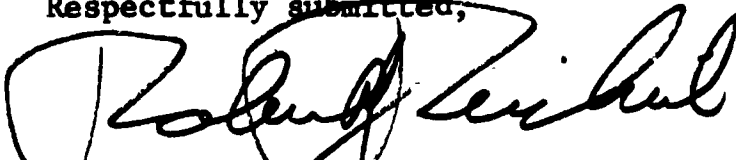
Dear Mr. Sandstrom:

I am pleased to submit this final report on the Hermantown, Duluth, and Superior Vocational Education Feasibility Study. This report is modified from the interim report by means of an addendum inserted preceding the introduction.

Preparation of this report has been a most interesting assignment. I wish to gratefully acknowledge the cooperation and assistance of the staff of the three school districts. Principals of the six high schools along with Mr. Don Olson and Mr. Tony Stauber of the Duluth District and Mr. Tom Strum of the State Department of Education were most helpful. The assistance of these and other staff members is appreciated along with student help in completing survey forms.

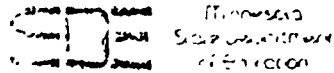
I appreciated the opportunity of meeting with members of the three district Boards at a joint meeting to present the Interim Report. This was an excellent meeting that produced a good exchange of information and ideas and hopefully was the first step in implementing a cooperative Secondary Vocational Education program.

Respectfully submitted,



Robert J. Reichert
PLANNING CONSULTANT

ABSTRACT



Submitted by Research Coordinating Unit For Vocational Education

DIVISION OF VOCATIONAL-TECHNICAL EDUCATION

Check One.

Approved Contract..... State Contract No.: 02-R-81
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Project Title: Hermantown, Duluth, Proctor Vocational Education Feasibility Study

Principal Investigator and Organization: Donald F. Sandstrom, Superintendent, Hermantown
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OBJECTIVES: To employ a consultant or consulting firm for the purpose of conducting an assessment/study of the secondary vocational education programmatic needs of the Hermantown, Proctor, and Duluth school districts. Emphasis will be placed on the feasibility of cooperation and sharing of facilities and programs within the three districts.

PROCEDURES: The basic procedures to be utilized in accomplishing this assessment will be through a survey of existing physical facilities and programs along with input from local personnel and outside agencies.

EXPECTED CONTRIBUTION OR POTENTIAL IMPACT ON VOCATIONAL EDUCATION: It is expected that the results of such an assessment will reflect a greater need for more cooperation and sharing so as to avoid a duplication of programs and physical facilities. It is also expected that it will be necessary to revise and expand secondary vocational programs to meet the needs of the students.

PRODUCT(S) TO BE DELIVERED: It is expected that the consultant or consulting firm will deliver a comprehensive written report regarding the feasibility of cooperation and sharing among the Hermantown, Proctor, and Duluth school districts. It is also expected that the consultant or consulting firm will make a presentation/s to the three respective school districts regarding the results of the study.

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HERMANTOWN, PROCTOR, DULUTH
VOCATIONAL EDUCATION
FEASIBILITY STUDY

ADDENDUM

December, 1981

Since preparation of the Feasibility Study Interim Report, several changes occurred in the operation of the Duluth Secondary Vocational Center. These changes included an expansion of courses offered, an additional teacher, an increase in the capacity of the Center and an increase in total number and percentage of high school students attending classes at the Center.

Additional classes include Lawn and Turf, Nursing Assistant and Technical Metals. Production printing at the Central Administration building was deleted from the Center facilities leaving the print shop at Central High School for Secondary Vocational Center classes. One full time teacher was added to the Center staff.

The net effect of the above changes is a capacity reduction of 60 students by deleting the Central Administration building print shop and a capacity increase of 120 students due to the staff increase. This is a net capacity addition of 60 students. Adding this increase to the approximate total capacity of 650 students noted at page 9 in the Interim Report produces a conservative capacity estimate of 710 students.

At page 38 of the Interim Report, enrollment at the Duluth Center for the 1981-82 school year was estimated at 490 students or 12.7 percent of total high school enrollment. Duluth Center enrollment was projected to increase to 14.0 percent of total high school enrollment by the 1984-85 school year. However, actual enrollment at the Center at November 19, 1981 was 581 students or 14.5 percent of Duluth high school enrollment.

An obvious increase in student demand for Vocational Center classes has occurred. At the same time, program expansion and an additional teacher have added to student capacity. The net effect is that sufficient capacity continues to remain available for establishing a cooperative program with Hermantown and Proctor.

All of the recommendations of the Interim Report remain valid. In particular, cooperation is not only possible but highly recommended as a practical way of expanding vocational program offerings to Proctor and Hermantown students.

INTRODUCTION

The purpose of this study is to investigate the feasibility of cooperation and sharing of secondary vocational education facilities and programs of the Duluth, Hermantown, and Proctor School Districts. A joint effort among neighboring school districts is most commonly undertaken in Minnesota through a Cooperative Center which is operated by a governing board and assigned a new school district identification number.

Cooperation also may be achieved through a less complex arrangement simply by one district agreeing to accept students from another district on a tuition basis. Additional possibilities of a cooperative center such as sharing administrative and instructional staff could be accomplished by agreement among the school districts.

Much of this report refers to formal creation of a cooperative center. However, the basic purpose, goals and techniques of a center may be undertaken in a considerably less complex manner by agreement among two or more districts. Thus, many of the comments in this report about a center also apply to agreements among the districts.

The principal purpose of a Cooperative Center is for two or more school districts to provide expanded educational options by sharing secondary vocational education programs. At the option of the Center Board other educational programs may be provided for K-12 and adult education. For example, foreign language education may be provided through the cooperative center to the participating independent school districts where an individual district would be unable to provide a foreign language course because of too few students.

Basic goals for a cooperative center are the following:

1. Provide secondary students with vocational programs that provide for:
 - a. In depth exploration of occupations to assist in the career planning process and,
 - b. Development of occupational competencies designed to be recognized for advanced placement in post secondary programs and,
 - c. Development of occupational competencies necessary to enter an occupation.
2. Shared hours and students to make a larger variety of

secondary vocational programs available than would have been possible separately.

3. Serve as a catalyst to elementary career awareness programs and junior high career exploration programs.

The basic goal of secondary vocational education is the first goal above: an in depth exploration of occupations to assist in career planning.

To accomplish the purpose of this study and to meet the goals for cooperation among districts or creation of a cooperative center, this study consists of a presentation and analysis of existing facilities and courses offered by the three school districts. An estimate of student demand for programs that might be offered through a cooperative center has been prepared through use of a student survey at the Hermantown and Proctor School Districts, enrollment projections and demand calculations based on experience of the Duluth School District. The feasibility analysis includes a comparison of space availability to demand, a presentation of financing options, estimates of costs to the individual districts, and comments on other options such as staffing and expanded curriculum through the center.

Principal findings and recommendations of this study are:

1. Duluth has an excellent secondary vocational educational program. Hermantown has the weakest secondary vocational education program and can benefit the most by cooperation and sharing with Duluth.
2. The present Duluth vocational center, located principally at Cathedral High School, provides an excellent resource for sharing of programs and facilities. Adequate capacity is available to accommodate estimated student demand from Hermantown and Proctor to attend vocational programs at the center, except for four courses that currently operate at capacity.
3. The initial method for cooperation should be for Duluth to accept students from Hermantown and Proctor with tuition paid for student class time. If experience indicates need, a cooperative center could be created at a later date.

4. Certain problems and deficiencies at the existing vocational center need to be corrected and an annual upgrading of facilities should occur. Duluth school administrators recommend consolidation and expansion of the vocational center through new construction at DAV or through expansion of facilities and equipment improvement at Cathedral. While there are certain advantages in housing the major vocational programs in one facility, the most economical approach is expansion of secondary vocational education facilities at Cathedral High School.
5. Both the Hermantown and Proctor school districts should share Duluth vocational education administrative staff and staff expense. The purpose of sharing administrative staff is to help develop more complete certified vocational education programs at each high school. Increasing the number of certified programs eligible for partial State reimbursement would result in an increase in State aid payments to the districts.
6. Based on Duluth experience projected operating costs to the 1981-82 school year for a cooperative center are \$665 per student from the local

district general fund. An additional local cost estimated at \$65 per student is necessary for capital expenses that may be obtained from an excess levy. This cost is for two hours of student time per day at the center. All remaining student time would be spent at home district classes and programs and be reflected in costs and reimbursements accordingly.

7. In addition to operating expense, Hermantown and Proctor must transport students between the high school and the vocational center. The annual local cost for each district is estimated to be \$4,400. By sharing buses among the districts and through class scheduling to reduce transportation needs, this cost might be reduced.

EXISTING FACILITIES AND PROGRAMS

As a part of this study, a walk-through inspection was conducted of secondary vocation education classrooms and facilities in the three school districts. This consisted of an inspection of the Business Education, Home Economics, and Industrial Arts classrooms at each of the four Duluth high schools and at the Hermantown and Proctor high schools. In addition, classrooms and facilities at the Duluth Secondary Vocational Center were inspected. These facilities are located principally at Cathedral High School. Other facilities include the Service Station at 2801 West 3rd Street, the printing shop at the School Board building, three classrooms at Duluth Central High School and classrooms at the Duluth Area Vocational Technical Institute that are used jointly by secondary and post-secondary students. (See Appendix I - Secondary Vocation Education Classrooms for a complete listing of the number of classrooms at each school).

A copy of the course description or registration book was obtained from each high school. A listing of vocational education courses was prepared for each school and for the Duluth Secondary Vocational Center. (See Appendix L - Secondary Vocational Education Courses). The categories of courses used and course names are those used by the individual high schools.

General conclusions concerning facilities and programs are based on the inspection of facilities, examination of course offerings and interviews with high school principals, and Duluth vocational education administrators. The Duluth School District has a well developed system between programs and facilities at the high schools and the Secondary Vocational Center. In general, the system has good facilities and equipment and continually strives to acquire new equipment to keep up to date with advancing technology. The administrators in the Duluth system are able to balance course offerings with student demand so that most courses operate near capacity of the classroom. This, of course, will vary somewhat from class to class and from year to year, but in general students are able to take courses desired. At the same time the system does not have excessively small classes.

The full range of courses offered at the high schools allows Duluth to meet the basic vocational education goal of providing in depth exploration of occupations to assist in the career planning process. For more specialized secondary vocational training, students from the four High Schools are able to attend classes at the Secondary Vocational Center. The approximate total capacity at the Center is 650 students. The Center currently is operating with an enrollment of nearly 500 students leaving a capacity for an additional 150 students. (See Table 1 - Classroom Capacity-Enrollment Comparison, Duluth Secondary Vocational School). Four

TABLE 1

Classroom Capacity - Enrollment Comparison

Duluth Secondary Vocational School

Approximate Total Capacity:	650
Approximate Total Enrollment:	500

The following classes generally are at capacity:

- Auto Body
- Auto Mechanics
- Carpentry
- Service Station

The following classes generally are below capacity:

- Auto Tune Up
- Clothing and Fashion Careers
- Forestry, Horticulture, Agri-Business Coop
- Health Care Occupations
- Industrial Printing
- Interior Design and Jr. Executive Housekeeping
- Intro To Food, Occupational Foods, Intro To Baking
- Machine Shop
- Motor Mechanics
- Occupational Child Care and Exploring Childhood
- Small Engine Repair
- Wood and Plastic Manufacturing

of the classes at the Secondary Vocational Center are popular and generally are offered at capacity. However, all of the other courses have excess capacity. This excess capacity presents a basic resource and opportunity for the Hermantown and Proctor School Districts to cooperate with the Duluth system in providing greater educational opportunities for their students.

While the vocational center provides an excellent resource for cooperation, there are certain problems and deficiencies that need to be corrected. The first problem is that facilities become inadequate every year. An annual program for upgrading facilities and equipment is essential. The need for annual upgrading occurs from several causes including rapid changes in technology that result in a need for new equipment and a need for training in new and changing job skills. Normal wear and tear on existing equipment also causes a need for periodic upgrading.

Since most of the vocational center facilities are located in a rented facility, there are some problems of flexibility in making changes to physical facilities. Improvements or changes to the facility generally must be made by the owner, Cathedral High School, rather than by the Duluth School District. Costs for such improvements are reimbursed through the rental agreement. The result is a cumbersome administrative process for minor improvements and a need for formal modification of the rental agreement for major improvements.

Additional space is needed in several program areas. Health care and housekeeping areas are used partially for post secondary training with a resulting space problem for secondary students. The foods area needs to be expanded to include fry cook and waiters/waitresses programs. The clothing and fashion lab is considered to be too small. More space is needed in the auto tune-up lab. Larger doors are needed for the motor mechanic area for ease of moving cars. Additional storage space is needed for the woods and plastics lab. The auto body course has a capacity of 20 students with a demand of 50-70 students. The reason for the capacity shortage is that one lab at DAVTI is used for one two-hour period a day. An entirely new auto body lab for secondary students is needed. Addition of a model store and a model office at the center would be an asset to the program.

The principal problem in the Duluth School District concerns Morgan Park High School. As is apparent from Appendix 2, programs are more limited than at the other high schools. For example, courses in Distributive Education and Electronics are not offered at Morgan Park. Also, while basic vocational education facilities are provided, the Machine Shop and Sewing classrooms are rather small. Because of the distance of Morgan Park from the Vocational Center facilities travel time is approximately 40 minutes. Thus, a student from Morgan Park taking a two credit course at DAVTI or

Cathedral needs four hours of the day for travel time and class work. Further, because of the size of enrollment at Morgan Park, if too many students were to travel to the Vocational Center the student base is reduced and thus course offerings at the High School are reduced. Presently, 21 students from the school are traveling to DAVTI and Cathedral.

In spite of any problems or deficiencies noted above, all facilities used for vocational education programs that are partially funded by the state have been approved by the State Department of Education and thus meet the state's minimum standards.

The Proctor High School vocational education programs are generally designed to meet basic goals for secondary vocational education or to provide in-depth exploration of occupations, to develop competencies for advanced placement in post-secondary programs and to develop competencies necessary to enter an occupation. The only state certified vocational education programs at Proctor are in Home Economics and Distributive Education. Other Industrial Arts and Business Education courses are offered but not as certified vocational education programs eligible for partial state funding. Facilities and programs appear adequate to meet the goals of the school district. Programs are somewhat comparable to courses at the Duluth High Schools, except that fewer courses are available

due to a smaller enrollment. An advantage that Duluth students have over the Proctor students is the ability to attend courses at the Vocational Center for more specialized training. As with the Duluth schools, Proctor administrators are reasonably well able to balance demand with course offerings so that most courses operate near or slightly below capacity.

The only State certified vocational education courses at Hermantown High School are in Home Economics. The Home Economics classrooms were recently rebuilt and are in good condition. Hermantown offers basic vocational education courses in Business Education and Industrial Arts. However, the facilities, particularly Industrial Arts, are woefully inadequate. The school does not have a machine shop and has little equipment available for students in the woodworking and small engine shops. Clearly, Hermantown High School is the most deficient in terms of facilities and programs. Hermantown High School students could achieve the greatest benefit through creation of a Cooperative Center to provide a greater opportunity for improved vocational education facilities and programs.

NEW DIRECTIONS IN VOCATIONAL EDUCATION

One of the major problems in administering a well balanced secondary vocational education program is keeping current with rapid advances in technology. Technological advances are creating new career opportunities and in some cases are vastly changing existing careers. Vocational skills required such as in auto mechanics with new electronics and office jobs with new word processing equipment are considerably different today than just a few years ago. The challenge to school boards and administrators is to keep programs, facilities, and equipment as current as possible with changing technology to provide a continuing wide-range of educational opportunities for the students.

New directions for vocational education need to be considered in several areas. Wise use and conservation of energy is a high national priority. In many cases, training concerning energy conservation can be included in existing programs such as insulation requirements for homes. In other instances, such as technology related to gasohol plants or active solar energy systems, modifications to existing programs or creation of new programs might be required.

New data processing and word processing equipment is vastly

and rapidly changing office procedures and marketing and sales techniques. For example, micro-computers and computer cash registers are becoming available to many small offices and businesses. Training and familiarity is required with the new machines and computers that are now on the market and being used on the job.

Auto mechanics, electronics, accounting and audio visual equipment are other areas that are being affected by changing technology. In most cases, new programs are not required. Mostly curriculum and equipment changes can be made that will keep vocational education programs current with changing technology.

Because of rapidly expanding technology and the need to maintain facilities and equipment current with technology, there may be a benefit to the three school districts from cooperation in vocational education. Cooperation may result in economy in providing, expanding, and upgrading courses and facilities spread among the entire student base to meet technological advances. Thus, basic equipment might be acquired by the vocational center rather than by each of the three school districts.

The Duluth School District is considering a substantial expansion of the Duluth Area Vocational Technical Institute (DAVTI). DAVTI is now principally a post-secondary educational institute. As noted in the previous section of this report, five classrooms at DAVTI are used part-time for secondary vocational

center programs. Post-secondary education programs share these classrooms for a two hour time period in the middle of the day with secondary vocational students. However, the majority of secondary vocational center classrooms are at Cathedral High School with three classrooms at Duluth Central High School and other facilities at the Printing Shop and Service Station. Current DAVTI expansion proposals call for consolidating the secondary vocational center at the Institute and constructing new facilities to house the center. These secondary facilities would be one part of a larger construction project with the principal expansion occurring for post-secondary facilities. The secondary education portion of the expansion will result in approximately 40,000 square feet of space. Current vocational center space use includes approximately 25,000 square feet at Cathedral along with use of other space at DAVTI and Central High School.

Funding for consolidation and expansion of the secondary vocational education program at DAVTI is somewhat questionable. The expansion program is divided into three phases at a total estimated cost of \$19.3 million. Phase I, which would involve complete construction of the secondary education facility is estimated to cost \$8.2 million dollars. Of this, \$3.6 million is for the secondary education facility and \$4.6 million is for post-secondary facilities.

The State of Minnesota funds 85 percent of the cost of construction of post-secondary education facilities but does not fund construction for secondary vocational education facilities. Thus, it becomes necessary for the local school district to pay the entire cost of new secondary vocational education facilities normally through local bonding. At the time of writing this report the Duluth School Board has not decided on whether to proceed with local bonding for construction of this facility.

The time schedule for planning a facility, obtaining approvals, including bonding approval, preparing plans, and constructing the facility is lengthy. If all goes well and moves along a normal time schedule, a new consolidated vocational center, if built, would not open before the 1985 or 1986 school year. Thus, it is clear that plans for cooperation among the three school districts using the Duluth district facilities should be based on continuation of existing Duluth Vocational Center facilities, principally at Cathedral High School, for at least the short term period of approximately 5 years. During this time, decisions may be made concerning the possibility of consolidation and expansion of secondary vocational facilities at DAVTI.

A further consideration is the recommendation of the Duluth Vocation Education Department that space at the Vocation Center should be expanded within five years to meet facility and

equipment needs generated by advancing technology. The recommendation is for an additional 5,000 square feet in classrooms and 4,000-6,000 square feet in laboratories to accommodate curriculum and equipment improvements in Health, Auto including an auto body shop, Food Service, Model Office and Model Store. Relocation of vocational center programs at Central to the Vocational Center would require an additional 3,000 square feet of space.

Assuming the Duluth School Board decided to proceed with construction at DAVTI, the cost to the district for a \$3.6 million bond issue would be slightly in excess of \$450,000 per year through the year 2000.¹ Cost estimates for expansion and equipment improvements at Cathedral have not been prepared. However, additional space needs of approximately 10,000 to 14,000 square feet at Cathedral are substantially less than new space of 40,000 square feet planned for DAVTI. Assuming that much of this additional space could be obtained through remodeling the existing building rather than new construction, it is clear that the most economical means of obtaining additional space is by expanding the Cathedral Vocational Center facilities.

Depending on the method of financing used for an expansion at Cathedral there could be a large impact on the budget over a short

¹ A bond payment schedule prepared by bond counsel that illustrates detail of annual cost is submitted separately from this report.

time period. Also, improving space at Cathedral rather than at DAVTI would require a long term commitment to maintaining the Vocational Center at Cathedral since Cathedral High School would want a long term lease in return for making substantial capital improvements.

STUDENT DEMAND - SECONDARY VOCATIONAL EDUCATION

As a first step in estimating student demand for secondary vocational education programs a basic conclusion was reached that the Duluth School District has a balanced and well developed system between programs at the high schools and at the secondary vocational center. In general, the Duluth district has good facilities, equipment and programs. The basic qualification to this statement is the need recognized by the Duluth school administrators to continually upgrade and expand facilities, equipment and programs to be current with advancing technology.

There are only four classes offered in the Duluth School secondary vocational program where demand generally exceeds capacity. These are auto body, auto mechanics, carpentry, and the service station. Most of the other courses generally operate somewhat below capacity. A conclusion from study of the Duluth system is that current enrollment in secondary vocational education programs in the Duluth schools is a reasonable and accurate representation of demand from Duluth for secondary vocational education. This conclusion is based on the long-term operation of a well developed program.

A normal activity, in a study such as this, is to conduct a survey of all high school students as an aid in determining demand

for secondary vocational education programs. Because of the well developed Duluth program and the conclusions reached above, a decision was made to survey only the Hermantown and Proctor students. The student survey form (See Appendix 3) was designed to obtain information on the occupation interest of students and to obtain opinions on existing vocational education courses. In addition, students were asked if they were willing to exert an extra effort to obtain vocational education training through travel to other facilities and spending extra time during the day if necessary because of class scheduling. Students also were asked about interest in on-the-job training and plans following graduation. Occupation interest categories for response to the occupation interest question were included with the survey as a separate sheet (See Appendix 4).

The survey results were tabulated for each of the Hermantown and Proctor High Schools by grade. A summary total of the three grades for each High School is presented in this report. Tabulation worksheets showing the detailed tabulation by grade will be presented to each school administration separately from this report. However, in general the responses by grade are consistent and the totals reported generally reflect responses of the individual grades except where noted otherwise.

For the occupation interest question students were asked to

indicate three preferences in order of priority among fifteen major occupation categories and subcategories within each major occupation interest area. Responses were tabulated by first, second, and third preference and by subcategory occupation interest by grade level. Because of the large amount of data this represents a summary response by major categories for each high school is presented. (See Tables 2 and 3, Vocational Education Survey). The summary tabulation shows the total of first preference response and the total of all preferences indicated by the students. The total of all preferences shows a broader range of interest than only the first preference. In some instances, students indicated only one or two preferences or did not know their occupation preferences. A failure to respond to this question has not been included in the tabulation or the percentage of total preferences.

Hermantown High School students indicate a strong occupational interest among agri-business and natural resources, business and office, communications and media, construction, fine arts and humanities, health, personal services, and transportation occupations. Relatively weak interest is shown for consumer homemaking, environment, hospitality and recreation, manufacturing, marine science, marketing and distribution, and public services occupations. In general, the responses are consistent among grades 10, 11, and 12 except that interest in fine arts and humanities appears to

TABLE 2

VOCATIONAL EDUCATION SURVEY
HERMANTOWN HIGH SCHOOL

<u>Occupation</u>	<u>Occupation Interest</u>			
	<u>First Preference</u>	<u>Preference</u>	<u>Preference No's. 1-3</u>	<u>Preference</u>
	<u>Indicated</u>	<u>Of Total</u>	<u>Indicated</u>	<u>Of Total</u>
Agribusiness & Natural Resources	45	12.7	95	9.8
Business & Office	77	21.7	154	15.8
Communications & Media	32	9.0	85	8.7
Construction	43	12.1	125	12.9
Consumer-Homemaking	6	1.7	33	3.4
Environment	2	0.6	12	1.2
Fine Arts & Humanities	29	8.2	105	10.8
Health	36	10.1	64	6.6
Hospitality & Recreation	4	1.1	33	3.4
Manufacturing	4	1.1	26	2.7
Marine Science	4	1.1	24	2.5
Marketing & Distribution	6	1.7	24	2.5
Personal Services	25	7.0	70	7.2
Public Services	6	1.7	21	2.2
Transportation	31	8.7	89	9.2
Do Not Know	<u>5</u>	<u>1.4</u>	<u>12</u>	<u>1.2</u>
Total	355	100.0	972	100.0

TABLE 3

VOCATIONAL EDUCATION SURVEY
PROCTOR HIGH SCHOOL

<u>Occupation</u>	<u>Occupation Interest</u>			
	<u>First Preference</u> <u>Preference</u> <u>Indicated</u>	<u>Percent</u> <u>Of Total</u>	<u>Preference</u> <u>Preference</u> <u>Indicated</u>	<u>No's. 1-3</u> <u>Percent</u> <u>Of Total</u>
Agribusiness & Natural Resources	59	14.5	141	12.9
Business & Office	71	17.4	161	14.7
Communications & Media	30	7.4	84	7.7
Construction	58	14.2	155	14.2
Consumer-Homemaking	18	4.4	51	4.7
Environment	12	2.9	18	1.6
Fine Arts & Humanities	29	7.0	85	7.8
Health	30	7.4	70	6.4
Hospitality & Recreation	10	2.4	39	3.6
Manufacturing	12	2.9	34	3.1
Marine Science	7	1.7	31	2.8
Marketing & Distribution	8	2.0	42	3.8
Personal Services	18	4.4	57	5.2
Public Services	8	2.0	22	2.0
Transportation	30	7.4	96	8.8
Do Not Know	<u>9</u>	<u>2.2</u>	<u>9</u>	<u>0.8</u>
Total	409	100.0	1095	100.0

decline from grades 10 to 12 and interest in health occupations appears to increase from grade 10 to grade 12.

Proctor High School results are generally similar to Hermantown High School results with the same occupation interests and with the same decline in interest in fine arts and humanities from grade 10 to 12 and increase in interest in health occupations from grade 10 to 12.

The career interest categories used for this survey were provided by the State Department of Education. It is a good summary list that is useful for a survey of the type undertaken for this study. However, as with any such summary list, there will be students who have career interests that are not specifically included. For this reason, students were asked to indicate interests not included on the summary list.

Certain arbitrary decisions were made in tabulating the response to the other occupational interests question. (See Table 4, Occupational Interests Not Listed on the Occupational Interest Category Sheet). Where students responded to the question by naming an occupation that was clearly included on the occupation interest category sheet this response was not tabulated. In addition, certain other responses were interpreted as being included on the occupation interest category sheet and were not tabulated. Similar arbitrary decisions could have been made on at least some

of the occupations that are included on Table 4. However, these comments appear to be representative of student interest and are reported directly as the students responded.

The largest response to the question in general was student interest in physical design, science, law, veterinary, and medical professions. Substantial interest was also indicated in computers, police work, cosmetology, and heavy equipment operators. Students also reported interest in a variety of other occupations.

Summary responses to other questions from the survey are presented on the Vocational Education Survey Tables 5 and 6. Even though the percentage responses to the questions from students at Hermantown and Proctor High Schools vary somewhat, the general pattern of response from students at each of the schools and among each of the grades is similar. The most overwhelming response to any of the questions is that approximately 9 out of every 10 students from both of the high schools want on-the-job experience in addition to class training. A high percentage of the students, nearly two-thirds at Hermantown and somewhat less at Proctor, are willing to spend an extra effort through travel and extra time in class to obtain vocational education training.

Most students will have difficulty establishing an informed opinion of the quality of education they are receiving without a basis for comparison. However, even with this qualification to

TABLE 4

VOCATIONAL EDUCATION SURVEY

OCCUPATION INTEREST NOT LISTED ON
THE OCCUPATION INTEREST CATEGORIES SHEET

<u>Occupation Interest</u>	<u>Number Indicating Preference</u>	
	<u>Hermantown</u>	<u>Proctor</u>
Architect	-	1
Physical Sciences	-	1
Stockbroker	-	1
Interior Decorating	-	1
Missionary	-	1
Computers	8	7
Motorcycle Racing	1	-
Optometrist	1	-
Airline Hostess	1	1
Engineer	1	7
Aerospace	2	-
Mechanical	2	1
Electrical	1	2
Political Science	3	-
Poetry, Story Writing	2	-
Lawyer	6	6
Retail Business	1	-
Police Work	3	12
Wildlife Management	2	-
Cosmetology/Beautician	5	7
Veterinary Work	2	4
Electronics	3	4
Biology	2	4
Camp Counselor	1	-
Meteorology	2	1
Fashion: Modeling/Merchandising	1	3
Funeral Director/Mortician	1	1
Physical Therapist/Work w/Deaf	2	2
Doctor/Medicine	2	4

TABLE 4 (Continued)
 VOCATIONAL EDUCATION SURVEY
 OCCUPATION INTEREST NOT LISTED ON
 THE OCCUPATION INTEREST CATEGORIES SHEET

<u>Occupation Interest</u>	<u>Number Indicating Preference</u>	
	<u>Hermantown</u>	<u>Proctor</u>
Pilot	2	2
Psychology	-	4
Heavy Equipment Operator/Repair	1	5
Photography	-	2
Military	-	3
Golf Pro	-	1
Gunsmithing	-	1
Gym Manager	-	1

results of the student survey, it is interesting to note that over 57 percent of the Hermantown students and over 46 percent of the Proctor students believe that more vocational education courses should be offered. Responses reported by students at Hermantown are particularly interesting in terms of their opinion of the adequacy of vocational education facilities and equipment. Some 6.3 percent of the tenth graders believe that facilities and equipment are not adequate. This increases to 21.9 percent of the twelfth graders. A somewhat similar, but less dramatic increase occurs at the Proctor High School beginning at 14.3 percent of the tenth grade students and increasing to 17.4 percent of the twelfth grade students.

A change occurs in student plans following graduation as they progress from the 10th to 12th grades. As would be expected, the percentage of students who do not have plans decreases. There also appears to be a slight decrease in the percentage of students planning to attend college as they progress from the 10th to the 12th grades. Nearly all of the change in plans is reflected in an increase in students planning to attend technical school. For Hermantown this represents an increase from 18.9 percent of 10th graders planning to attend technical school to 32.3 percent of the seniors. At Proctor the increase is from 12.1 percent of 10th graders to 32.9 percent of the seniors. This rather interesting

TABLE 5

VOCATIONAL EDUCATION SURVEY
HERMANTOWN HIGH SCHOOL

SURVEY RESPONSE

<u>Question Number</u>	<u>Survey Question</u>	<u>Total Response</u>	<u>Percent Of Total</u>
	Number of Surveys Returned	366	100.0
5	Able to Take Voc. Ed. Courses With Training in Occupation Interest		
	Yes	271	74.0
	No	77	21.0
	No Response	18	5.0
6	Opinion of Existing Voc. Ed. Courses		
	Good Training	131	35.8
	Adequate Training	137	37.4
	Poor Training	19	5.2
	More Courses	210	57.4
	Right Number of Courses	54	17.5
	Fewer Classes	23	6.3
	Facilities & Equipment Good	79	21.6
	Facilities & Equipment Adequate	133	36.3
	Facilities & Equipment Not Adeq.	42	11.5
	No Response	16	4.4
7	Willing to Travel by Bus to Voc. Ed. Classes		
	Yes	229	62.6
	No	128	35.0
	No Response	9	2.4

TABLE 5 (Continued)
VOCATIONAL EDUCATION SURVEY
HERMANTOWN HIGH SCHOOL

SURVEY RESPONSE

<u>Question Number</u>	<u>Survey Question</u>	<u>Total Response</u>	<u>Percent Of Total</u>
8	Willing to Spend an Extra Hour in Class for Vocation Education		
	Yes	235	64.2
	No	119	32.5
	No Response	12	3.3
9	Desire On-The-Job Experience		
	Yes	338	92.3
	No	23	6.3
	No Response	5	1.4
10	Plans Following Graduation		
	Go To Work	43	11.7
	Attend Tech. School	90	24.6
	Attend College	137	37.4
	Join Military	7	1.9
	Don't Know Yet	86	23.5
	No Response	3	0.8

TABLE 6

VOCATIONAL EDUCATION SURVEY
PROCTOR HIGH SCHOOL

SURVEY RESPONSE

<u>Question Number</u>	<u>Survey Question</u>	<u>Total Response</u>	<u>Percent Of Total</u>
	Number of Surveys Returned		100.0
5	Able to Take Voc. Ed. Courses With Training in Occupation Interest		
	Yes	266	59.6
	No	153	34.3
	No Response	27	6.1
6	Opinion of Existing Voc. Ed. Courses		
	Good Training	166	37.2
	Adequate Training	143	32.1
	Poor Training	24	5.4
	More Courses	208	46.6
	Right Number of Courses	61	13.7
	Fewer Classes	31	7.0
	Facilities & Equipment Good	105	23.5
	Facilities & Equipment Adequate	116	26.0
	Facilities & Equipment Not Adeq.	71	15.9
	No Response	46	10.3
7	Willing to Travel by Bus to Cov. Ed. Classes		
	Yes	226	50.7
	No	200	44.8
	No Response	20	4.5

TABLE 6 (Continued)
VOCATIONAL EDUCATION SURVEY
PROCTOR HIGH SCHOOL

SURVEY RESPONSE

<u>Question Number</u>	<u>Survey Question</u>	<u>Total Response</u>	<u>Percent Of Total</u>
8	Willing to Spend an Extra Hour in Class for Vocation Education		
	Yes	275	61.7
	No	152	34.1
	No Response	19	4.3
9	Desire On-The-Job Experience		
	Yes	395	88.6
	No	36	8.1
	No Response	15	3.3
10	Plans Following Graduation		
	Go To Work	70	15.7
	Attend Tech. School	103	23.1
	Attend College	152	34.1
	Join Military	15	3.3
	Don't Know Yet	96	21.5
	No Response	15	3.3

result from the survey tends to emphasize the importance of the principal goal of secondary vocational program which is to provide an in depth exploration of occupations to assist in the career planning process.

Drawing specific conclusions on precise demand for secondary vocational education from the results of this survey is difficult. However, there appears to be strong interest by students in obtaining quality secondary vocational education. Such education seems to be helpful to students in determining plans following graduation. One other general conclusion is that on-the-job experience should be designed into secondary vocational education programs to the greatest degree possible.

In addition to the local Duluth School District experience and results of the survey from Hermantown and Proctor, general experience statewide in secondary vocational education is instructive. The State Department of Education reports that 85 percent of students in Minnesota had 4 or more vocational education programs to choose from during the high school experience. The Department further reports that 76 percent of the students will participate in at least one or more programs during high school.

For the purpose of preparing specific projections of student demand or enrollment at a cooperative center, several assumptions have been made. These assumptions include the following:

1. Basic vocational education programs will remain at each high school.
2. The basic resource for cooperation among the three districts is the Duluth Vocational Center facilities and programs principally at Cathedral High School and potentially to be consolidated and expanded at DAVTI.
3. As a general rule, students from one high school would not be expected to attend vocational classes at another high school.
4. A cooperative center formed by the three districts could be used as the base for strengthening weak and inadequate facilities and programs at existing high schools.
5. Existing enrollment at the Duluth Vocational Center represents a reasonable approximation of the percentage of students that could be expected to enroll in classes from each of the three districts at a cooperative center.

The second step in projecting enrollment at a cooperative center is to project total high school enrollment. (See Table 7 - Secondary Enrollment Projections by School for projections to the 1984-85 school year).

TABLE 7

SECONDARY ENROLLMENT PROJECTIONS BY SCHOOL
GRADES 10-12

<u>School</u>	<u>1980-81</u>	<u>1981-82</u>	<u>1982-83</u>	<u>1983-84</u>	<u>1984-85</u>
<u>Duluth</u>					
Central	1333	1265	1122	1105	1057
Denfeld	1025	926	824	791	780
East	1525	1397	1267	1164	1163
Morgan Park	<u>306</u>	<u>262</u>	<u>246</u>	<u>234</u>	<u>239</u>
Duluth Total	4189	3850	3459	3294	3239
Hermantown	420	402	370	394	368
Proctor	<u>607</u>	<u>552</u>	<u>521</u>	<u>498</u>	<u>506</u>
All Districts Total	5216	4804	4350	4186	4113

Source: Duluth; ISD No. 709 Office of Planning, February 4, 1981

Hermantown and Proctor; Minnesota State Department of
Education, April 7, 1981

A continuing decline in High School enrollment is anticipated from the current total enrollment among the three districts of just over 5,200 students to a total of just over 4,100 students in the 1984-85 school year.

Current enrollment in all classes at the Duluth Vocational Center is 488 students. This equals 11.6 percent of the total Duluth high school enrollment and appears to be a reasonable statement of actual demand from Duluth. Assuming that both Hermantown and Proctor would create secondary vocational programs through a cooperative center similar to Duluth, a reasonable assumption is that nearly the same percentage of students would attend classes at the cooperative center. Various factors are involved in this assumption that are somewhat different from Duluth. The first is that distance and travel time from Hermantown and Proctor to Cathedral High School is greater than for most Duluth students. Offsetting this greater distance and travel time is the fact that Hermantown facilities and programs are inferior to Duluth. A large range of program options would be available for both Hermantown and Proctor students. These factors should result in greater student interest in attending programs at a cooperative center. As reported earlier, a high percentage of Hermantown and Proctor students indicated a willingness to travel to another school for vocational education and to spend extra time during the day if necessary.

Two courses at Central High School will be converted to center programs for the next school year. After subtracting these new programs and adjusting for student interest that exceeds capacity in the four popular programs, projected enrollment for 1981-82 will approximately equal current enrollment. Thus, center enrollment is increasing as a percentage of total enrollment. Assuming 490 students for the next year results in 12.7 percent of total high school enrollment.

Projected cooperative center enrollment is based on increasing the Duluth participation rate to 14 percent by 1984-85 based on recent trends. A lesser constant rate of 10 percent of enrollment is projected for Hermantown and Proctor to allow for the travel time factor. This results in the following projected enrollment at a cooperative center:

TABLE 8
COOPERATIVE CENTER PROJECTIONS BY DISTRICT
GRADES 10-12

<u>District</u>	<u>Actual</u>	<u>1981-82</u>	<u>Projected</u>		<u>1984-85</u>
	<u>1980-81</u>		<u>1982-83</u>	<u>1983-84</u>	
Duluth	488*	490	450	445	450
Hermantown	-	40	37	39	37
Proctor	-	<u>55</u>	<u>52</u>	<u>50</u>	<u>51</u>
Total	488	585	539	534	538

* Enrollment at October 22, 1980

Source: Projections by Consultant

Projected enrollment at a cooperative center appears to fit easily within existing capability of the Duluth center. As noted earlier in this report, current capacity is approximately 650 students with current enrollment running just under 500 students. Projected enrollment ranges from 585 students in the 1981-82 school year to 538 students at the 1984-85 school year. There clearly is room for some variation in these numbers up or down for either Hermantown or Proctor. Some increase or decrease in projected enrollment could be accommodated.

Duluth enrollment data and projection are based on enrollment approximately two months after start of school and not first day enrollment. Projected first day enrollment is considerably higher, but does not present a reasonable basis for cost sharing calculation presented in the next section of this report. Conversion of two programs at Central High School planned for next year will increase center capacity by 50 students.

Students traveling from the Hermantown or Proctor high schools to a cooperative center would decrease the student base for existing vocational programs at the high schools. However, this enrollment would be spread across the entire range of vocational education programs. Also, students from Hermantown and Proctor may have difficulty in enrolling in a substantial number in the four most popular Duluth classes. The result is that the projections above do not appear to be of a magnitude that would cause

any existing vocational education programs to be canceled or reduced at the two high schools, although there may be a small reduction in the number of students enrolling in any individual course.

FINANCING A COOPERATIVE CENTER

The State of Minnesota pays up to 50 percent of basic costs for vocational education and up to 100 percent of student transportation cost. Local districts are required to pay the balance of the cost. A variety of different formulas may be devised for calculating proportional share of cost for districts participating in a vocational center. Several optional methods for calculating a local district share of the cost of operating a cooperative center are presented below in outline form:

Cooperative Center Funding Options

I. State of Minnesota Payments

A. Vocational Categorical Aid up to 50 Percent of Costs For:

1. Salaries of essential licensed personnel including instructors and administrative services.
2. Travel for essential licensed personnel from school to job sites. This does not include student transportation.
3. Lease or purchase of equipment.

B. Student transportation from school to center and return to school in accordance with a State formula. This may equal 100 percent of costs depending on local district transportation cost experience.

II. Local District Payments

For Balance of Costs After State Payments

- A. Payment to center based on percentage of each student time in center programs (i.e., 2 hours of 6 hour day = 33.3% of student time) from one of the following:
 1. Pupil unit cost (foundation aid plus local tax).
 2. State Foundation Aid only.
 3. 50 percent of pupil unit cost (balance of cost from vocational categorical aid).
- B. District payment calculated on basis of district EARC as percentage of total EARC from all participating districts.
- C. District payment calculated on basis of district total enrollment grades 10-12 as percentage of all participating districts total enrollment grades 10-12.
- D. District payment calculated on basis of student hours at the center from district as percentage of total student hours at the center.
- E. Negotiated arbitrary charge per student.
- F. Any combination of above alternates.

These funding options should be carefully considered in negotiating a cooperative agreement. However, for ease of understanding cost implications for the Hermantown and Proctor districts a simple formula is used for this study. The actual cost for operating the vocational center during the 1979-80 school year is shown in Table 9 on the following page.

TABLE 9

VOCATIONAL CENTER OPERATING COSTS, 1979-80

<u>Purpose</u>	<u>Total Cost</u>	<u>State Reimbursement @45%</u>	<u>Local Cost</u>	<u>Source Of Local Funds</u>
Instruction	\$ 437,000	\$ 197,000	\$ 240,000	General Fund
Capital Exp.	22,000	10,000	12,000	General Fund
Capital Exp.	<u>13,000</u>	<u>-</u>	<u>13,000</u>	General Fund
Subtotal	472,000	207,000	265,000	General Fund
Capital Exp.	<u>29,000</u>	<u>-</u>	<u>29,000</u>	Excess Levy
Total	\$ 501,000	\$ 207,000	\$ 294,000	

Assuming that costs will increase at a rate of 15 percent per year, the general fund cost will be approximately 389,000 for the 1981-82 school year. At a projected enrollment of 585 students, this equals \$665 per student from the school district general fund. This cost is for two hours per day or one third of total student time at the center. An additional cost projected to the 1981-82 school year is \$65 per student for capital expenses that are eligible for funding from an excess levy.

As noted elsewhere in this report, State reimbursement for vocational education equals up to 50 percent of cost. The Duluth experience is that approximately 45 percent of instruction and certain capital expenses for operating the vocational center are reimbursed. The lower reimbursement rate occurs because of certain

necessary expenses that are not eligible for reimbursement. Thus, in order to properly assess the impact on the Hermantown and Proctor budgets, local general fund expenses are used to calculate student unit cost.

These estimated costs applied to projected enrollment for the 1981-82 school year result in the following calculation:

TABLE 10

ESTIMATED GENERAL FUND COST
TO LOCAL DISTRICT, 1981-82

Hermantown		
40 Students @ \$665/Student	\$	26,600
Proctor		
55 Students @ \$665/Student	\$	36,550
Duluth		
490 Students @ \$665/Student	\$	<u>325,850</u>
	\$	389,000

Any increase or decrease in the number of students attending cooperative center programs or increase in student time at the center would result in corresponding increases or decreases in costs to the local district. All remaining student time would be spent at home district classes and programs and be reflected in costs and reimbursements accordingly.

The State will reimburse local districts for the costs of transporting students between the high school and the cooperative

center. This reimbursement may equal up to 100 percent of transportation costs depending upon cost experience of the district. State reimbursement to the Hermantown and Proctor school districts for transportation costs presently is running at approximately 85 to 90 percent of actual costs due to certain expenses that are not eligible for State reimbursement. Due to anticipated changes in State law concerning transportation reimbursement and for conservative purposes for this report, local district transportation expenses are assumed to equal 20 percent of total costs.

Transportation cost estimates are based on operating costs reported by each district inflated to the 1981-82 school year. The estimates assume one bus and driver for each district making four round trips per day. Mileage, driver and operating costs vary somewhat by district. For example, Hermantown is about two miles closer to the center than Proctor. (See Location Map). However, total annual transportation costs are estimated at \$22,000 for both Hermantown and Proctor. Local general fund costs at 20 percent of the total equal \$4,400. This should be the maximum transportation cost which may be reduced by techniques of class scheduling and sharing of buses among the three districts.

Actual distance and driving time from the Hermantown and Proctor High Schools were measured by test drives by private automobile (See Table 11). Driving time is an approximation of school bus driving time from door to door. Additional time for

student boarding is usually limited to only a few minutes. Thus, with close coordination among the districts for class scheduling, it may be possible for Hermantown and Proctor students to attend vocational classes at Duluth without loss of class time at the home school.

HERMANTOWN

EAST

CATHEDRAL
CENTRAL

DAVTI

LOCATION MAP

PROCTOR

DENFELD



MILLAN PARK

47

55

TABLE 11

Distance and Driving Time
Hermantown and Proctor to Cathedral and DAVTI

Hermantown To Cathedral

Via: Arrowhead Road, Rice Lake

Distance: 7.1 miles Driving Time: 13.5 min.

Via: Arrowhead, Central Entrance, Pecan, Rice Lake

Distance: 7.1 miles Driving Time: 17.5 to 18.5 min.

Via: Ugstad, Maple Grove, Central Entrance, Etc.

Distance: 7.6 miles Driving Time: 20.0 min.

hermantown to DAVTI

Via: Arrowhead, Miller Trunk, Trinity Road

Distance: 6.4 miles Driving Time: 13.5 to 15.5 min.

Via: Ugstad, Maple Grove, Haines, Anderson, Trinity Road

Distance: 6.9 miles Driving Time: 15.0 to 15.5 min.

Proctor to Cathedral

Via: Boundary Ave., U.S. 61, I-35, Mesaba, Rice Lake

Distance: 9.1 miles Driving Time: 16.5 to 17.0 min.

Proctor to DAVTI

Via: Boundary Ave., U.S. 61, I-35, Piedmont, Trinity Road

Distance: 8.5 miles Driving Time: 15.5 min.

CREATING AND OPERATING A COOPERATIVE CENTER

Two or more Independent School Districts may enter into an agreement to establish a cooperative center. Upon creation the center is assigned a new school district identification number and is operated by a governing board. The governing board consists of members of school boards of each of the participating school districts within the center, appointed by their respective boards. Each participating school district has equal voting power on the governing board of the cooperative center. Upon creation of the center and following State Board of Education approval, the operation, maintenance, and conduct of the affairs of the center are governed by general laws relating to independent school districts of the State.

Among its powers, the center board may employ or contract with necessary qualified teachers and administrators. The center board may not issue bonds in its behalf. However, participating districts may issue bonds for the purpose of improvement of center facilities. For the purpose of paying administrative, planning, operating, or capital expenses, the center board may assess and certify to each participating school district its proportionate share of any and all expenses. This share is to be based upon an

equitable distribution formula agreed upon by the participating districts. This assessment is to be paid within the maximum levy limitation of each participating district.

Upon formation of the center, the governing board should select a supervising superintendent from the member district superintendents. Also, an administrative officer or director should be hired. This person is responsible for administering board policy and also serves as an ex-officio member of the board.

Within the broad guidelines established above, a wide latitude may be considered for operating a cooperative center. All certified secondary vocational education teachers and administrators among the participating school districts could be employees of the center. On the other hand, certified teachers and administrative staff could remain employees of existing districts. In this case the new center would hire only a district director and coordinate vocational education programs offered by the existing districts along with sharing of expenses. A third option could be some combination of the above two options. A feature that might be particularly useful to the Hermantown and Proctor School Districts could be a sharing of administrative staff and staff expenses. The shared staff would help develop more complete certified vocational education programs at each of the high schools that would be eligible for partial State reimbursement with a resulting increase in State aid payments to the districts.

A second area to be considered is ownership of facilities. Existing districts may continue to own present facilities and provide these facilities and equipment to the cooperative center. This entire report is based principally on an assumption of sharing facilities of the Duluth vocational center. Another option is for ownership of facilities and equipment to be transferred to the cooperative center. In terms of basic facilities this may be somewhat difficult since Duluth presently rents most of the center space from Cathedral High School and may construct new space at DAVTI. However, as pointed out earlier in this study, advancing technology requires continuing advances and new purchases of equipment used by vocational programs. An option to the all or none approach of center ownership of equipment would be ownership of selected equipment that may be purchased in the future where an economy of scale could be achieved by sharing center equipment among the three districts.

Another issue concerns the most efficient use of teacher and student time. One option would have all teachers remaining at existing schools. Students would travel to class, principally to the facility at Cathedral High School. This is the basis for cost estimates presented in the previous section of this report. A second option is for students to remain at existing schools with teachers traveling to class. This option is used to some extent in rural areas and may have limited local usefulness.

A final area to be considered is whether the center should be only for secondary vocational education or whether the center should include other courses with limited single district demand. This could provide a means of offering increased study opportunities such as in foreign language or science courses. The cost analysis for this study is based only on vocational education cooperation. A cost analysis for cooperating on other courses would need to use a unit cost double the rate used in this study because these courses would not receive 50 percent reimbursement provided by the State for vocational education classes.

After the cooperative center is created and a director is hired, the center will need to determine whether existing programs will become a part of the cooperative center or whether they will continue to be administered by individual districts. A first year plan must then be prepared and forwarded to the Vocational Technical Division of the State Department of Education for evaluation. The plan should include approval requests for first year programs, center agreement, By-Laws, name of proposed center, and name of the director.

The State requirement for the first year plan should not be a difficult task in this case. The principal job would be integrating anticipated enrollment from Proctor and Hermantown into

the Duluth program and presenting such proposals to the State for approval. Plans for including other options mentioned above such as sharing administrative staff and expanded course offerings could be developed as the center gains operating experience.

Finally the center board and staff would have responsibility for ongoing planning, evaluating, and operation of the Center and for coordination and liason among the member districts.

The description above is for formal creation of a cooperative center as a new legal entity. A considerably less complex approach could be used by cooperating districts that would involve agreements for limited specific purposes. For example, the Duluth district could accept students from either Hermantown or Proctor with tuition paid for student class time. Hermantown and Proctor also could pay for Duluth administrative staff time to assist in developing more complete certified programs at the high schools.

With the relatively small projected student demand from Hermantown and Proctor, the best method for initiating cooperative vocational programming should be the limited and less complex agreement basis. A more formally organized cooperative center can be created at a later date if initial cooperation experience indicates a need for the center.

APPENDIX I

SECONDARY VOCATION EDUCATION CLASSROOMS

Classrooms

Duluth Central High School

Business Education	6
Typing (3), Accounting (1), Distributive Education (1), Study Hall (1)	
Home Economics	3
Food, Clothing, General Classroom	
Industrial Arts	7
Print Shop*, Wood, Machine Shop, Metals*, Drafting, Electronics, Small Motors*	

* Also used for vocational center classes

East High School

Business Education	4
Typing, Accounting, Distributive Education, Business Education Lab	
Home Economics	2
Industrial Education	6
Electronic Lab, Aerospace Classroom, Small Motors, Metal Shop, Woodworking, Link Trainer	

Denfeld High School

Business Education	7
5 Typing/Accounting Classrooms, Bank, Store	
Home Economics	1
Industrial Arts	4
Machine Shop, Electronics, Drawing, Wood	

Morgan Park High School

Business Education	2
Home Economics	2
Industrial Arts	4
Drawing, Graphic Arts, Woodworking, Machine Shop	

Vocational Education

DAVTI

5

Auto Mechanics, Auto Body, Carpentry, Machine Shop, Horticulture

Secondary Vocational Center

14

At Cathedral High School

Auto Tune-Up Labs, Motor Mechanics, Wood and Plastic Shop, Paint Spray Room, Formica Fabrication

Occupational Clothing, Health Occupations, Occupational Child Care, Foods/Kitchen, Nursery School, Commons/Play Area, Interior Design/ Housekeeping, Hospital Room, Motel Room

Service Station

1

At 2801 West Third Street

Printing Shop

1

At School Board Building

Duluth Central High School

3

See Central High School List Above

Hermantown High School

Business Education

2

Typing, Bookkeeping

Home Economics

2

Sewing Room, Kitchen

Industrial Arts

5

Drafting, Electronics, Small Engines, Wood Shop, Print Shop

Proctor High School

Business Education	3
Typing, Model Office, Distributives	
Home Economics	4
Sewing (2), Kitchen (2)	
Industrial Arts	4
Drafting, Electrical Shop, Woodworking, Metal Shop/Small Engines	

APPENDIX II

SECONDARY VOCATIONAL EDUCATION COURSES

<u>Vocational Courses At DAVTI</u>	<u>Credits</u>
AgriBusiness Co-Op	2
Auto Body	2
Auto Mechanics	2
Carpentry	2
Forestry/Natural Resources	1
Horticulture	1
Machine Shop	2
 <u>Vocational Courses At Secondary Vocational Center</u>	
Auto Tune-Up	1
Clothing and Fashion Careers I	2
Clothing and Fashion Careers II	1
Health Care Occupations	1
Nursing Ass'tant	1
Exploring Childhood	1
Interior Design Occupations	2
Introduction to Baking	1
Introduction to Food Service	1
Junior Executive Housekeeping	1
Motor Mechanics	2
Occupational Child Care	2
Occupational Foods	1
Wood and Plastic Manufacturing	2
 <u>Vocational Courses At Other Locations</u>	
Service Station Training 2801 West Third Street	2
Industrial Printing School Board Building	2
Small Motors Central High School	2

Duluth Central High School

Business Education Courses

Business and Office Courses

Credits

Typing 1A	1
Typing 1B	1
Advanced Typing	1
Personal Typing	1/2
Accounting I	1
Accounting II	1
Record Keeping	1
Shorthand I and Typing II A	2
Shorthand II	1
Business Machines	1/2
The Real World of Business	1/2
Data Processing	1/2

Cooperative Office Education Courses

Office Occupational	1
On-The-Job Training (Office)	1-2

Distributive Education Courses

Marketing and Merchandising I	1
Marketing and Merchandising II	1
On-The-Job Training (Marketing)	1-2

Home Economics Courses

Credits

Sewing Techniques	1/2
Fashion-Sewing	1/2
Sportswear	1/2
Sewing Independently	1/2
Relationships	1/2
Interior Design	1/2
Child Development	1/2
Solo Living	1/2
Basic Foods	1/2
Foods in Your Future	1/2
Specialty Cookery	1/2
Advanced Foods	1/2
Fundamental Life Skills	1/2
Marriage and Family	1/2

Duluth Central High School

Industrial Education Courses

Drafting	1
Electricity	1/2
Electronics I	1
Electronics II	2
Electronics III	1
Graphic Arts I	1
Graphic Arts II - Vocational	2
Machine Shop I	1
Machine Shop II	2
General Metals I	1
General Metals II	2
Machine Woodworking (Wood I)	1
Wood Products Manufacturing (Wood II)	2

Denfeld High School

Business Education Courses

Credits

Accounting I	1
Accounting II	1
Small Business Bookkeeping	1
Banking Practice	1
Cadet Assistant	1/2
Secretarial Office Procedures	1
Shorthand I	1
Shorthand II	1
Introduction to Typing I	1/2
Typing IB (Beginning)	1
Typing IA	1
Typing II	1
Junior Office Prep.	1
Senior Office Occupational Relations	1
On-The-Job Training	1
Distributive Education I	1
Distributive Education II	1
Coordinated On-The-Job Training	1-2

Home Economics

Food Techniques	1/2
Meal Time Magic	1/2
Exploring Foods	1/2
Solo Living	1/2
Marriage and Family	1/2
Experience in Child Care	1/2
Housing and Home Decorating	1/2
Sportswear	1/2
Fashion Sewing	1/2
Creative Sewing	1/2

Industrial Education

Electronics I	1
Electronics II	2
Machine Shop I	1
Machine Shop II (Secondary Vocational)	2
Machine Shop III	1

Denfeld High School

Industrial Education (continued)

Woodwork I	1/2
Woodwork II	1
Woodwork III	1
Woodwork IV	1
Aerospace Education	1/2
Vocational Architectural Drawing I	1/2
Vocational Architectural Drawing II	1/2
Vocational Architectural Drawing III	1/2
Vocational Architectural Drawing IV	1/2
Engineering Drawing	1/2
Basic Drawing	1/2
Advanced Mechanical Drawing	1/2
Communications Technology	1/2

East High School

Business Education Courses

Credits

Accounting I	1
Business Law	1/2
Business Machines	1/2
Coop office Procedures	2-3
Marketing and Merchandising I	1
Marketing and Merchandising II	2
Money and You	1/2
Office Occupations Prep.	1
Personal Typewriting	1/2
Forkner Transcription Skills I	1
Forkner Transcription Skills II	1
Shorthand I	1
Shorthand II	1
Typewriting I	1

Home Economics

Clothing I	1/2
Family Clothing	1/2
The Family	1/2
Single Living	1/2
Today's Foods	1/2

Industrial Education

Aerospace Technology I	1
Aerospace II	1
Drafting Architectural	1
Drafting Technical	1
Advanced Metalworking	1
Analog Electronics	1
Beginning Electronics I	1
Digital Electronics	1
Lab. Tech. Electronics IV	1
Machine Woodworking I	1
Small Motors	1/2
Technical Metals	1
Power Analysis	1/2

Morgan Park High School

<u>Business Education Courses</u>	<u>Credits</u>
Typing I (Personal)	1/2
Typing II (Intermediate)	1
Typing III	1
Steno I (Beginning)	1
Steno II (Advanced)	1
Clerical Record Keeping I	1/2
Office Practice	1
Work Cooperative Program	1/2-2
Marketing I	1
Bookkeeping I (Beginning)	1
Data Processing	1/2
<u>Home Economics</u>	
Clothing to Meet Your Needs	1/2
Food Techniques	1/2
Consumer Clothing I	1/2
Consumer Clothing II	1/2
Caring For Children . . . Do You Care?	1/2
Consumer Foods	1/2
Single Living	1/2
Marriage and Family	1/2
Housing	1/2
<u>Industrial Arts</u>	
Machine Shop	1
Advanced Machine Shop	1
Machine Drawing	1
Architectural Drawing	1/2
Advanced Machine Woodwork	1
Graphic Arts	1/2
Mechanical Drawing	1/2
Woodwork (Machine)	1/2

Hermantown High School

Business Education

Credits

Personal Typing	2
Typing I	4
Bookkeeping I	4
Bookkeeping II	4
Shorthand I	4
Shorthand II	4
Secretarial Office Practice	4
Clerical Office Practice	2

Home Economics

Foods and Nutrition	2
Creative Foods and Equipment	2
Fundamentals of Clothing and Fabrics	2
Intermediate Clothing	2
Stretch and Sew	2
Marriage and Family Living	2
Child Development	2
Housing and Home Furnishings	2
Consumer Education	2

Industrial Arts

Electronics	2
Small Engines	1
Printing	1
Woods	2
Advanced Woods	Vary
Welding	Vary
Home Maintenance	1
Machine Drawing	2
Architectural Drawing	2

Special Departments

Job Training	Vary
Career Development	4

Proctor High School

Business Education

Credits

Accounting	1
Clerical Office Procedures	1
Consumer Law	1
Intermediate Typing	1
Marketing I	1
Marketing II - Employment	2
Personal Typing	1/2
Shorthand I	1
Shorthand II	1

Home Economics

Basic Foods	1/2
Meal Management	1/2
Creative Foods	1/2
Child Development and Parenting	1/2
Consumer Education	1/2
Basic Clothing	1/2
Creative Sewing	1/2
Home Decorating	1/2
Marriage and Family Living	1/2

Industrial Arts

Advanced Mechanical Drawing	1
Basic Drawing	1/2
Basic Woodworking	1/2
Carpentry	1
Electricity	1
Electronics	1
General Metals	1
Home Mechanics	1
Machine Technology	1
Machine Technology II	1
Small Engines	1/2
Woodworking	1

APPENDIX III
VOCATIONAL EDUCATION
STUDENT SURVEY FORM

1. School Name _____

2. Grade (Circle) 10 11 12

3. Occupation Interest
 Indicate your occupation interest in order of preference. Write the number that corresponds to your interest from the attached occupation list.

	Major Group (Two Digit Number)	Occupation Within Major Group (Three Digit Number)
1.	_____	_____
2.	_____	_____
3.	_____	_____

4. Are you interested in studying for an occupation that is not listed on the attached sheet?
 Yes No

If yes, please name the occupation

5. Are you able to take vocational education courses that offer training in your occupational interest? Yes No

6. Check any of the following that reflect your opinion of existing vocational education courses:

- _____ Good Training
- _____ Adequate Training
- _____ Poor Training
- _____ More Courses Should Be Available
- _____ About The Right Number of Course Are Available
- _____ There Should Be Fewer Classes With Each Class Covering More Information
- _____ Facilities And Equipment Are Good
- _____ Facilities And Equipment Are Adequate
- _____ Facilities And Equipment Are Not Adequate

7. Are you willing to travel by school bus during the school day to vocational educational classes at another school or vocational education center? Yes No

8. Are you willing to spend an extra hour in class each school day to obtain vocational education training? Yes No

9. Do you want on-the-job experience in addition to class training? Yes No

10. Check on of the following to indicate your plans following graduation.

- _____ Go To Work
- _____ Attend Technical School
- _____ Attend College
- _____ Join Military
- _____ Don't Know Yet

APPENDIX IV

OCCUPATION INTEREST CATEGORIES

01 Agribusiness and Natural Resources Occupations

- 011 Agribusiness (supplies, service, processing production)
- 012 Animal Service
- 013 Plant and Soil Service
- 014 Horticulture
- 015 Natural resources occupations
- 016 Forest management and protection
- 017 Timber harvesting
- 018 Farm tractors, machinery, and equipment

02 Business and Office Occupations

- 021 Clerical-secretarial careers (typing, filing, stenography, office procedures, business machines, bookkeeping)
- 022 Business careers (management, court reporting, auditing, real estate, insurance, cashier)
- 023 Accounting-data processing careers (some tax careers, electronic data, accounting)

03 Communication and Media Occupations

- 031 Graphics careers (commercial art or photography, advertising, computer technology)
- 032 Publications careers (advertising, public relations, journalism, reporting, technical writing)
- 033 Electronic media careers (telephone, telegraph, stereo sound production, broadcasting)

04 Construction Occupations

- 041 Building/Finishing (drafting, estimating, decorating, painting, masonry)
- 042 Carpentry
- 043 Mechanical trades (air conditioning, refrigerator, welding, drafting, plumbing, electricity, heating and sheet metal)
- 044 Landscape
- 045 Construction/Planning (surveying, drafting, facility planning)

05 Consumer-Homemaking

- 051 Family Life Education
- 052 Child Development/Parenting
- 053 Consumer Education
- 054 Consumer Housing
- 055 Consumer Foods and Nutrition
- 056 Consumer Clothing and Textiles

06 Environment Occupations

- 061 Technology (drafting, health, water purification, protection)
- 062 Utilities (energy, sanitation, office, business, repair)

07 Fine Arts and Humanities Occupations

- 071 Entertainment (music, art, drama, sports, home)
- 072 Tourism (travel services, promotion and development, recreation)
- 073 Electronic media

08 Health Occupations

- 081 Public (environment, disease prevention, nutrition, emergency health)
- 082 Institutions (nursing practices, dental hygiene, laboratory practices, drugs, diseases, health appliances and equipment)

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