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ABSTRACT

This guide is to be used as a resource for teaching metrics at various educational levels in the home economics program. The lessons are intended for flexible use by the teacher, and the contents can be adapted for use with varying abilities, ages, and teaching-learning situations. Categorized into ten units, each unit includes concepts, objectives, supportive learnings, sampling of experiences and evaluation, charts, and diagrams. The ten units are: (1) History of Measurement, (2) The International System of Units (SI), (3) The Metre (Length/Area), (4) The Litre (Volume/Capacity), (5) Grams and Kilograms (9) Using Metrics in Clothing Labs--Metric Chef's Hat, and (10) Windows and Window Treatment. The appendixes include: Metric Test, Metric for Preschoolers, Metric Doll (Elementary-Middle School), Introduction to Metrics (Transparency Series), Centimetre Grid, Games, and Bulletin Board Ideas. (HD)

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METRICS

A Resource Guide for Home Economics

FINAL REPORT

Developed and disseminated pursuant to EPDA grant No. 51049-5

with the

U. S. Office of Education, Region 3

and the

Bureau of Vocational, Technical and Continuing Education
Pennsylvania Department of Education
Harrisburg, Pennsylvania 17126

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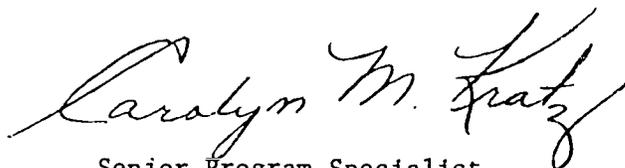
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Instruction in the metric system became a reality when the State Board of Education adopted Regulation 5.52 Metric System (Elementary School) and 5.77 Metric System (Secondary School) on September 13, 1974.

Practically all aspects of our society will be operating under the metric system by the time the present classes in kindergarten classes are graduated from high school. Distances driven will be measured by kilometers; milk consumed will be measured in liters and a box of cereal purchased will be weighed in grams.

Since the home economics program focuses on helping individuals and families to improve home environments and the quality of family life, students need to be exposed to the metric system. Instruction in metrication needs to be integrated throughout all subject matter areas of the program. Therefore, teachers are encouraged to use this resource guide as they plan to offer instruction in metrication in the home economics program.

"Metrics, A Resource Guide in Home Economics" was developed by workshop participants under the direction of Dr. Ruth Anderson, Home Economics Education, Indiana University of Pennsylvania, funded through an EPDA grant. This group is to be commended for this fine publication, as it will serve the home economics programs and ultimately prepare the students enrolled in home economics programs of the Commonwealth to become better decision makers, consumers and homemakers.



Senior Program Specialist
Home Economics Education
Pennsylvania Department of Education

PREFACE

In response to the increased national tendency to adopt the metric system as the nation's primary system of measurement, the Pennsylvania State Board of Education on September 13, 1974 established regulations providing for instruction in the metric system.

For secondary schools, the regulations (5.77) state that: The concepts of measurement in all subjects shall be taught emphasizing the use of the metric system and referring to the English System only as special requirements demand its use. Specialized courses such as science and mathematics shall utilize whatever measuring system is consistent with the specialized measuring activities of the discipline. Instruction in measurement shall be concerned with those measurement skills and units used in everyday life, except for specialized courses where extensive measuring activities are required, and shall be concerned with the understanding and use of the system of measurement.

A changeover to the metric system became inevitable with the signing of the Metric Conversion Act by President Ford in December 1975. An historic step giving official federal sanction to a change that has been taking place rapidly in the past several years, the Act provided for a U. S. Metric Board of 17 members to devise and carry out a broad program of planning and coordinating voluntary acceptance of metric units our primary measurement system.

Funded by an EPDA grant, a metric workshop was conducted at Indiana University of Pennsylvania in June 1975. This guide is a compilation of ideas, developed by workshop participants, to be used as a resource for teaching metrics at various educational levels in the home economics program. The lessons are intended for flexible use by teachers; the

content can be adapted for use with varying abilities, ages and teaching-learning situations. The "hands-on" approach was recognized as the best method to learn the system and THINKING METRIC, rather than converting between the customary and metric systems, was emphasized. However, throughout the lessons comparisons have been made to emphasize the advantages of the metric system.

SI (International System) spellings for metre and litre are used throughout this document, with the exception of National Bureau of Standards reprint which predates the international agreement on SI spelling.

Permission is hereby granted for the reproduction and utilization of these materials.

Acknowledgements

Appreciation is expressed to the following persons in the Department of Education, Harrisburg, Pennsylvania:

Mr. Charles Lebo, EPDA Coordinator, for his encouragement and support throughout the project;

Miss Carolyn M. Kratz, Senior Program Specialist, Home Economics Education, Bureau of Vocational Education and Miss Hester Munden, Chief, Western Region Vocational Field Services, Bureau of Vocational Education who reviewed the materials prior to publication.

Thanks are due also to Mrs. Mary Jean Rose, homemaking teacher, who was kind enough to review the manuscript and to supply important suggestions.

Much appreciation is also due to Miss Marsha Lockard, secretary at Indiana University of Pennsylvania, who cheerfully performed the many secretarial duties necessary to produce this publication.

The last group to be cited, but valued highly, were the workshop participants who gave of their time and talents by responding to inquiry and supplying the materials for the project. Without their contributions the project could not have succeeded:

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Unit I

CONCEPTS: History of Measurement
Status of Conversion - U.S. and World

OBJECTIVES	SUPPORTIVE LEARNINGS	SAMPLING OF EXPERIENCES & EVALUATION
------------	----------------------	--------------------------------------

After participating in classroom activities, the student will be able to:
 recognize the need for metrication

There are about 80 units of weights and measures in the customary system we use; unrelated, illogical and requiring different factors to convert. A standard measurement system is necessary for communication and trade.

"Are You Ready for the Metric System?"

Divide class into groups of 4 or 5 students. Each group will be given one measurement form in our customary system. (ex: length, weight, or volume). Each group will buzz as to the terms used to measure each and record these on the chalkboard.

Given a sheet of paper, each group will then list as many equivalents using those terms as possible. (ex: 12 inches = 1 foot). Discuss. Summarize with transparency: "Customary Metric"

chart the trend toward metrics by listing at least 5 historical events in its development

The first standards were based on the dimensions of a king.

View and discuss transparency depicting history of measurement.

Every monarch or king revised the method of determining measurements.

Appoint two students kings and compare various measurements. (yard, cubit, foot)

An acre was the amount of land a pair of oxen could plow in one day.



digit - width of finger
hand - 4 digits - width of palm
cubit - 6 palms - elbow to fingertip
span - width of outstretched hand
fathom - fingertip to fingertip - out-
stretched arms
inch - knuckle of thumb - tip to joint
3 well dried barleycorns - end to end
yard - nose to fingertip

The mile was originally determined as
2,000 paces of Roman soldiers.

Later it became 5,280 feet, established
by Queen Elizabeth I.

The United States uses the English
measuring system: ounce, foot, pint,
pound, quart, yard, mile.

The English system was established
in the 17th century.

View transparencies:
"Metric Clocks Off Time"

The metric system was established in
France in the 17th century.

Adoption of the metric system was slow,
but occurred steadily in other nations.

In 1866, the metric system was made
lawful in the United States but was
not adopted as the system of
measurement.

In 1875, the Treaty of Metro was signed by industrial countries, formed by the U.S. as our system of measures.

In 1960, the Modernized International System of Units (SI) was adopted, but not by the U.S. as our system of measures.

In 1965, England began conversion to the metric system (metrication).

In 1968, the U.S. Congress passed the Metric Study Act.

The U.S. Metric Study was reported to Congress in 1971, at which time several recommendations were made.

Currently, the United States is the only major nation not operating on the metric system.

Although the U.S. has still not adopted the metric system, on Dec. 23, 1975, President Gerald Ford signed the Metric Conversion Act of 1975 (Public Law 94-168).

The metric system has been used in medicine, photography, sports, and dietetics.

We will soon be moving entirely into the metric system of measurement.

"Our Metric World 1976" Transparency.

Transparency indicating common metric usage in U.S. to date.

recall that some U.S. industries have been using metric measurements

indicate an awareness of problems that may be encountered in a change to the metric system by identifying each of 10 statements as an advantage or disadvantage with 80% accuracy

Advantages:

1. a universal system - stimulate sales and balance exports with imports
2. easier to use - decimal system
3. calculations are faster
4. less chance of error
5. interchange of machine parts
6. standard tools
7. time saving
8. interrelationship of units

Brainstorm - compile list of advantages and disadvantages of metric conversion using chalkboard or flannelboard. Discuss each as they are listed.

Identify "Advantages and Disadvantages" of metric conversion.

Disadvantages:

1. reluctance to change
2. expense
3. re-education
4. transition will take time

orally differentiate between the customary and the metric systems of measurement

Customary:

Units vary when same substance is measured
Fractions used
Abbreviations used

View transparency: "Base units and symbols". (discussed in next lesson).

Assignment: collect pictures, articles, food wrappers, advertisements, etc. which indicate use of metrics (to be used in bulletin board). Take home NBS leaflet "All You Will Need to Know About Metric".

Metric:

Based on units of 10
Prefixes change amount of metre, litre, gram
Symbols - no abbreviations
Decimals - no fractions
No commas in large numbers - space difference

ARE YOU READY FOR THE METRIC SYSTEM?

Fill in the blanks with your answers:

1. 16 tablespoons = _____ cup(s)
2. 4 ounces = _____ gill(s)
3. 1 ounce = _____ tablespoon(s)
4. 16 ounces = _____ pound(s)
5. 32 ounces = _____ quart(s)
6. 1 peck = _____ quart(s)
7. 4 pecks = _____ bushel(s)
8. 1 bushel = _____ quart(s)
9. 105 quarts = _____ barrel(s)
10. 1 cord = _____ cubic foot/feet
11. _____ cubic foot/feet = 1 cubic yard
12. 1 dram = _____ grain(s)
13. 1 ton = _____ pound(s)
14. 12 inches = _____ foot/feet
15. 1 hogshead = _____ barrel(s)
16. _____ yards = 1 mile
17. _____ rods = 1 mile
18. 1 rod = _____ foot/feet
19. 18 feet = _____ fathom(s)
20. 80 rods = _____ furlong(s)

KEY: ARE YOU READY FOR THE METRIC SYSTEM?

- | | |
|--------------------|-------------------|
| 1. 1 cup | 11. 27 cubic feet |
| 2. 1 gill | 12. 24 grains |
| 3. 2 tablespoons | 13. 2000 pounds |
| 4. 1 pound | 14. 1 foot |
| 5. 1 quart | 15. 2 barrels |
| 6. 8 quarts | 16. 1760 yards |
| 7. 1 bushel | 17. 320 rods |
| 8. 32 quarts | 18. 16 1/2 feet |
| 9. 1 barrel | 19. 3 fathoms |
| 10. 128 cubic feet | 20. 2 furlongs |

SCORING:

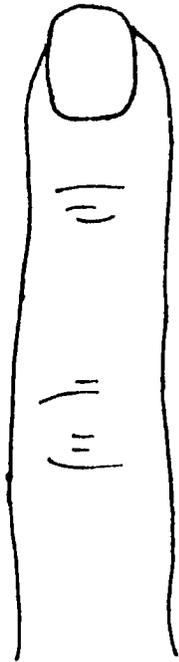
- 16 - 20 correct: GREAT! But . . . you better get with it
METRICS IS COMING!
- 11 - 15 correct: SO SO. You haven't a lot to forget!
- 0 - 10 correct: You'll just love the metric system!

CUSTOMARY

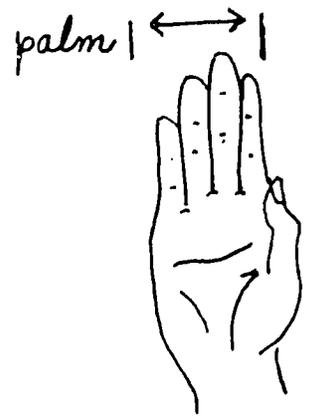
Barrel
gal. ROD
cup
fathom
ounce
Yd. cord grain FURLONG
Cubit ton QT.
bushel
foot dram pt. SPAN
lb. MILE gill A. Oz.
inch
peck

METRIC

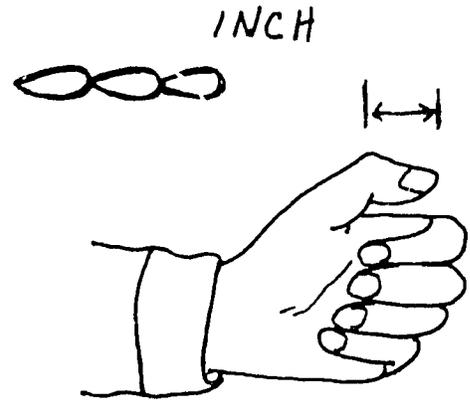
metre litre gram



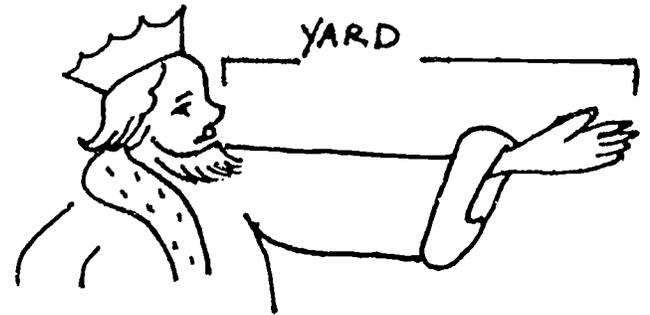
digit



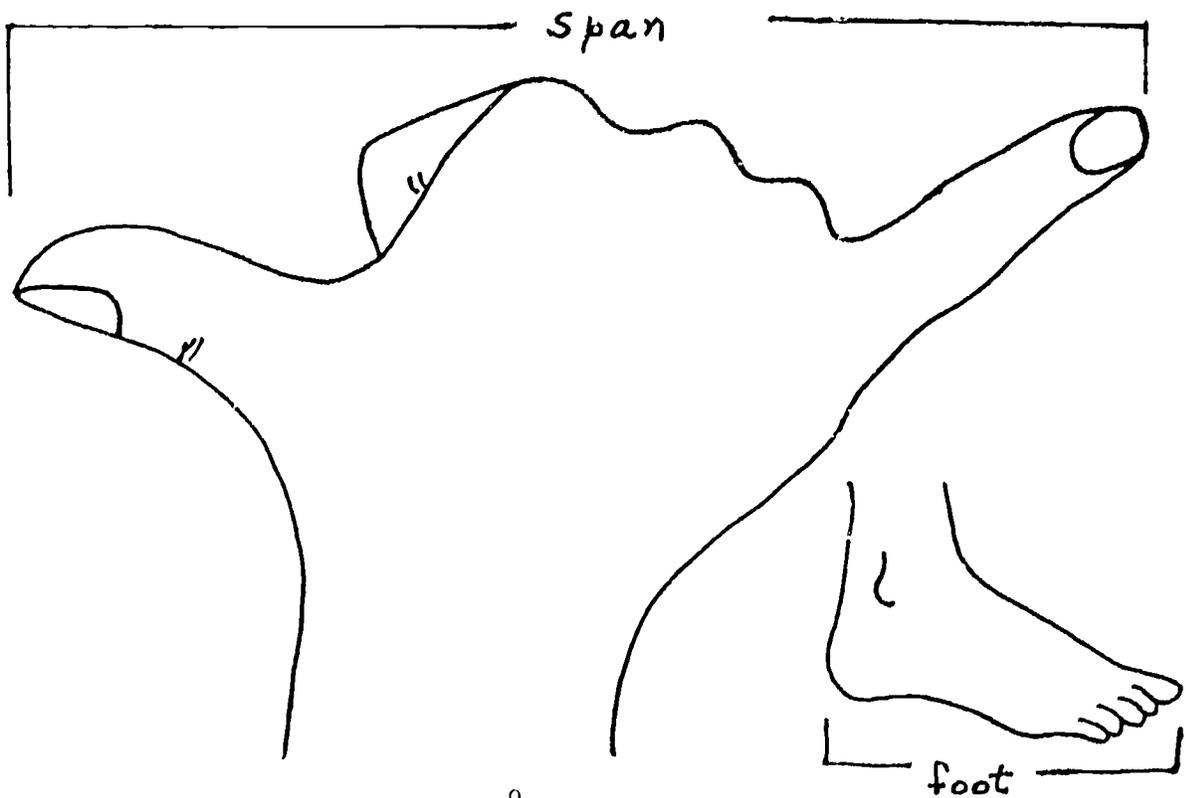
palm



INCH



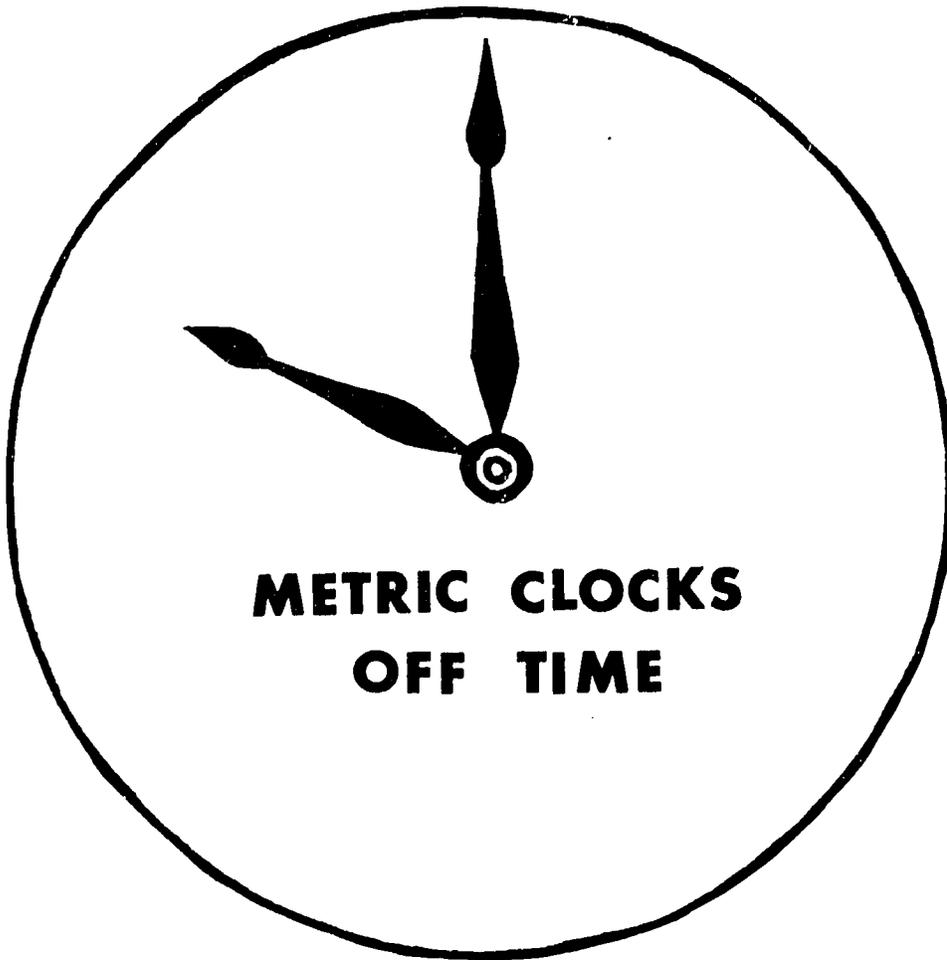
YARD



Span

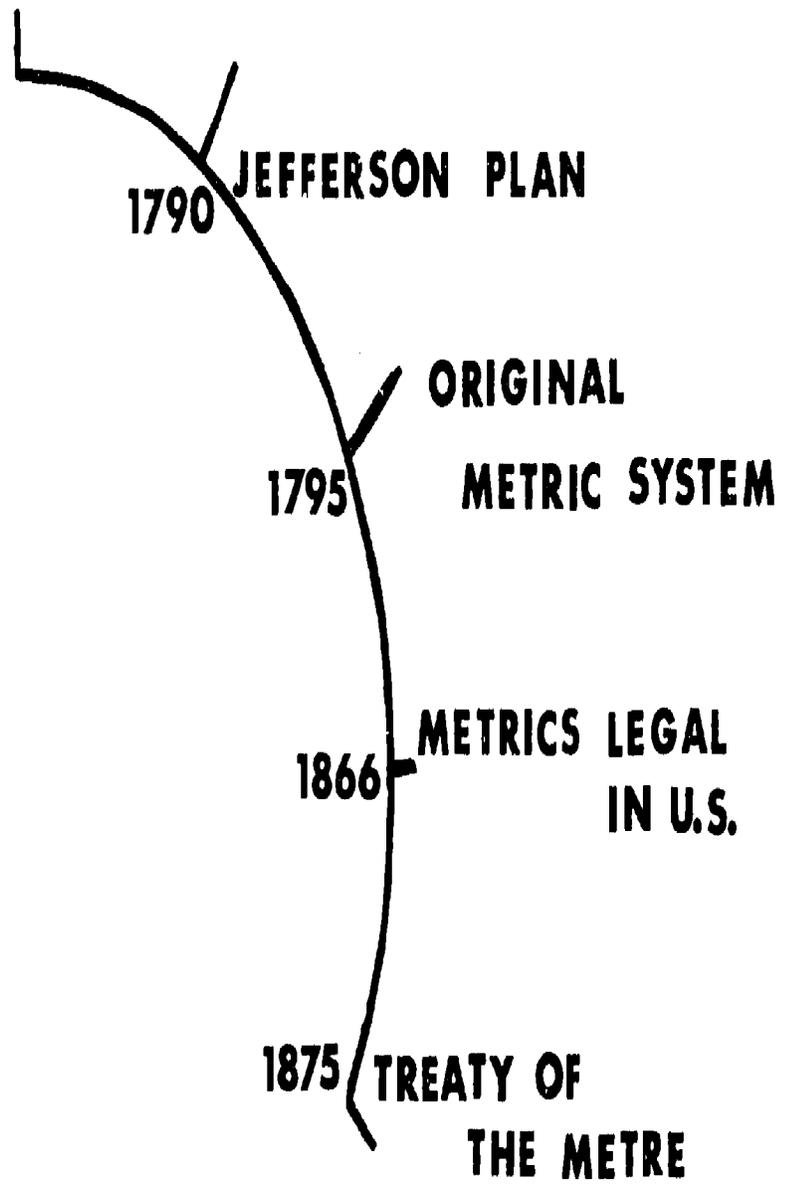
foot

**TICK TOCK!!
TICK TOCK!**

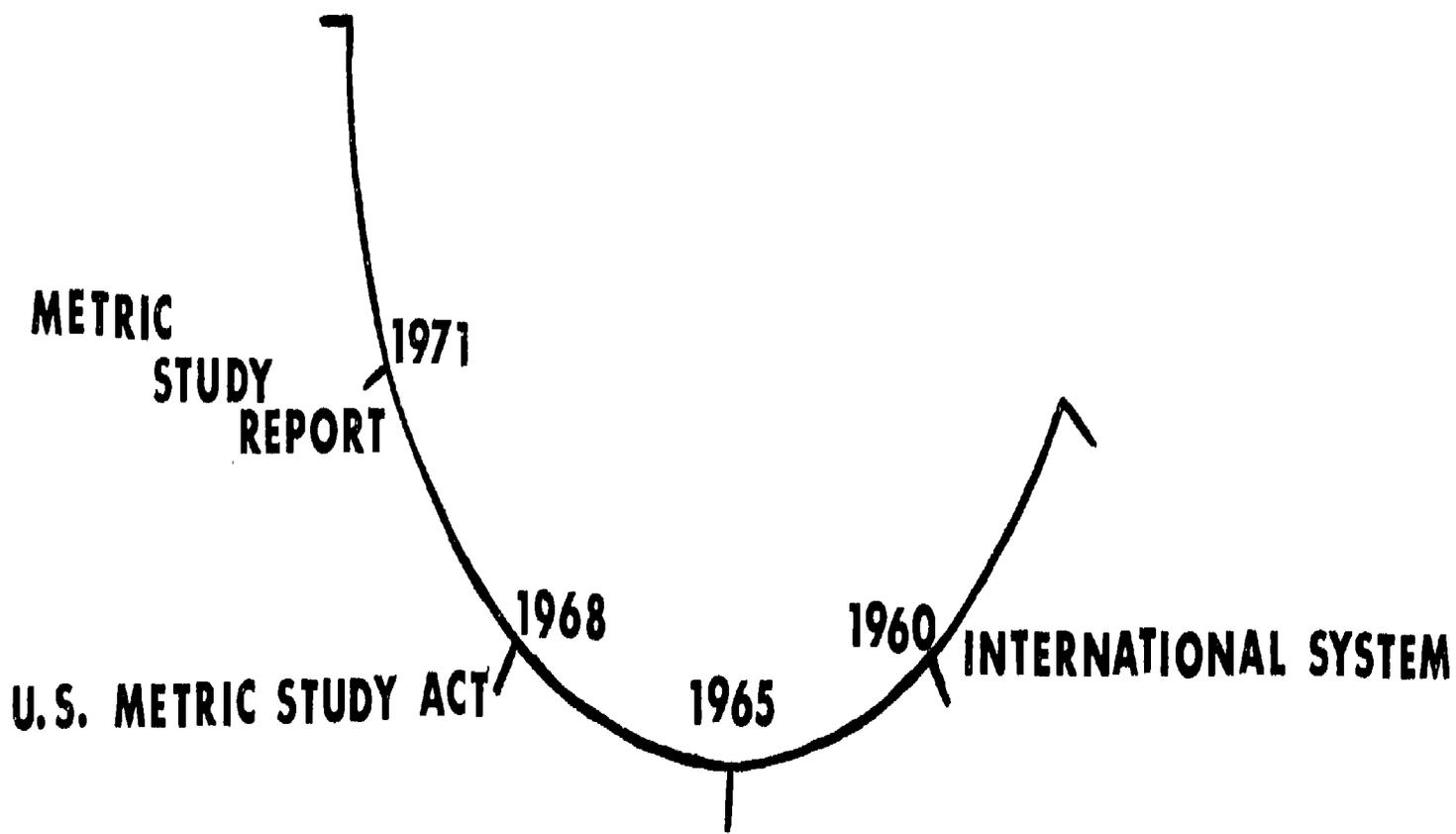


20

11

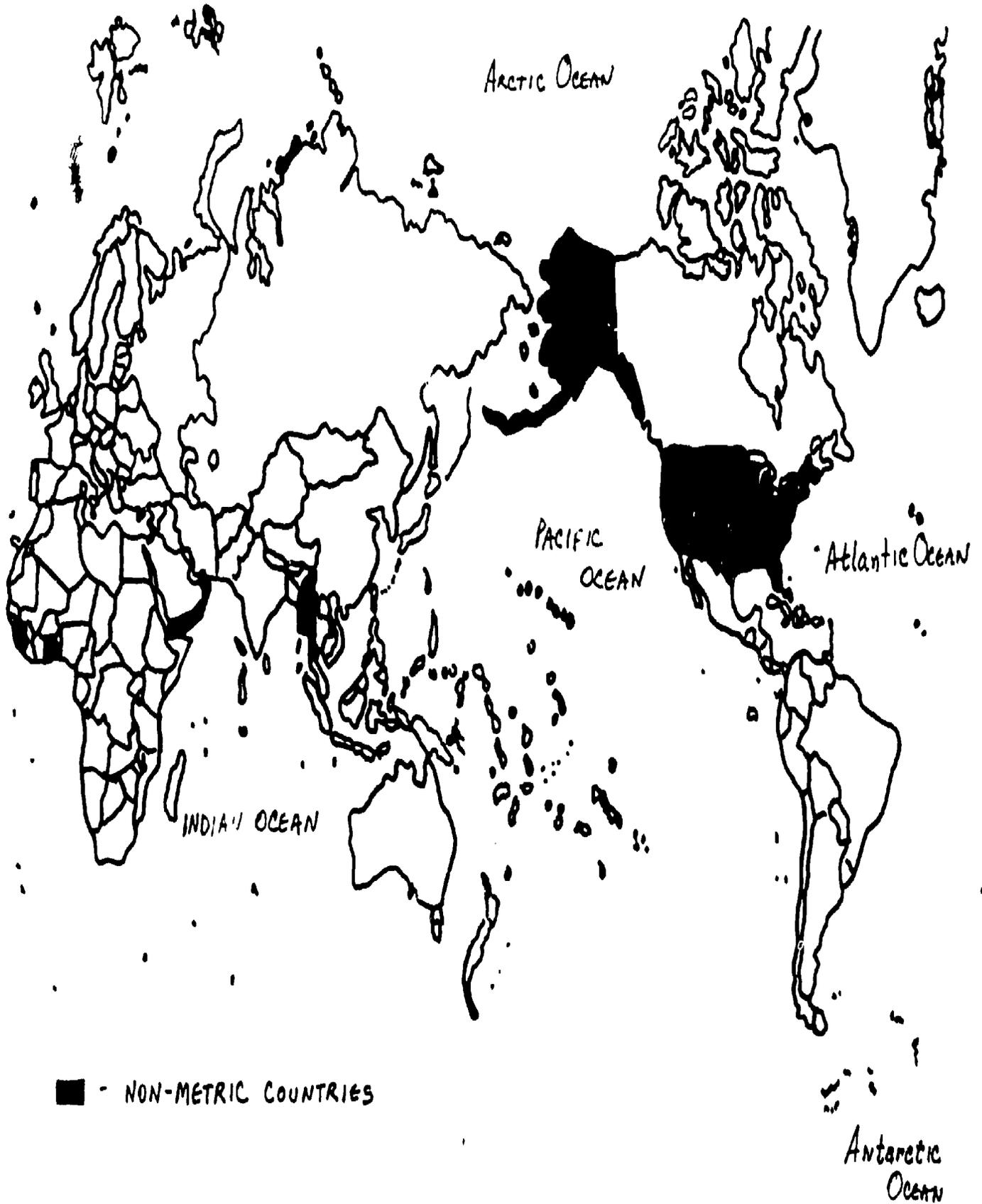


15



ENGLAND BEGAN 10 YR. CONVERSION

OUR METRIC WORLD 1976

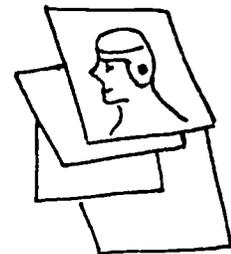
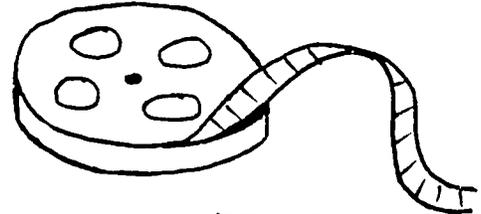


19

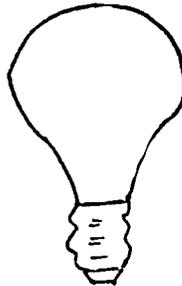
WHICH LEADS IN THE U.S.



8 mm
16 mm



100 WATT
BULB



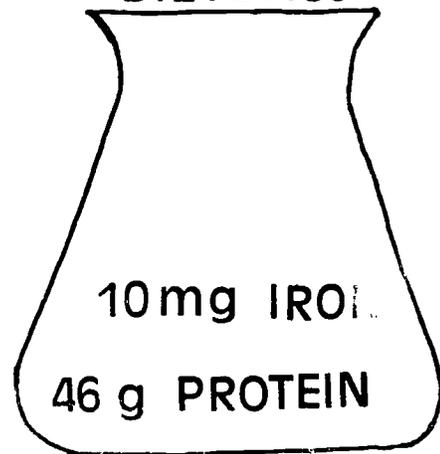
35 mm

SPORTS

100 m swim

200 m dash

DIETETICS



10mg IRON

46 g PROTEIN

ADVANTAGE OR DISADVANTAGE ?

Identify each of the following ten statements as an advantage (A) or a disadvantage (D) of conversion to the metric system.

- ___ 1. The measurement system now in use in the U.S. has many base units.
- ___ 2. The U.S. could increase the amount of trade with foreign countries.
- ___ 3. The metric system is based on units of ten.
- ___ 4. Metrication could be costly.
- ___ 5. People tend to resist change.
- ___ 6. THINKING METRIC will take re-education.
- ___ 7. Each base unit may be made larger by adding prefixes.
- ___ 8. Metrication could take many years to complete.
- ___ 9. Metrication may create confusion.
- ___ 10. The metric system is already in use in certain areas in the United States.

All You Will Need to Know About Metric

(For Your Everyday Life)

10

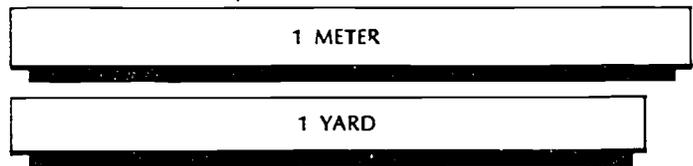
Metric is based on Decimal system

The metric system is simple to learn. For use in your everyday life you will need to know only ten units. You will also need to get used to a few new temperatures. Of course, there are other units which most persons will not need to learn. There are even some metric units with which you are already familiar: those for time and electricity are the same as you use now.

BASIC UNITS

- METER:** a little longer than a yard (about 1.1 yards)
LITER: a little larger than a quart (about 1.06 quarts)
GRAM: about the weight of a paper clip

(comparative sizes are shown)



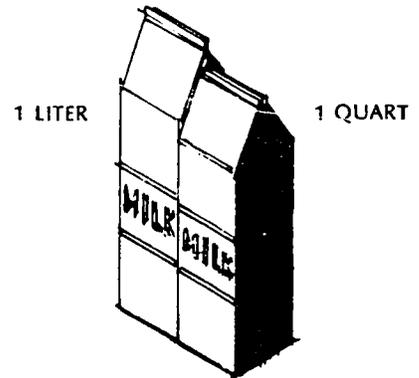
25 DEGREES FAHRENHEIT

COMMON PREFIXES

(to be used with basic units)

- Milli:** one-thousandth (0.001)
Centi: one-hundredth (0.01)
Kilo: one-thousand times (1000)

For example:
 1000 millimeters = 1 meter
 100 centimeters = 1 meter
 1000 meters = 1 kilometer



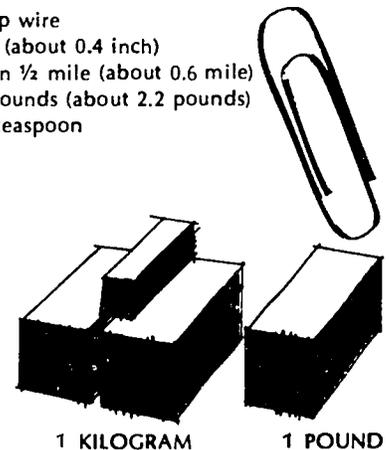
25 DEGREES CELSIUS

OTHER COMMONLY USED UNITS

- Millimeter:** 0.001 meter diameter of paper clip wire
Centimeter: 0.01 meter width of a paper clip (about 0.4 inch)
Kilometer: 1000 meters somewhat further than 1/2 mile (about 0.6 mile)
Kilogram: 1000 grams a little more than 2 pounds (about 2.2 pounds)
Milliliter: 0.001 liter five of them make a teaspoon

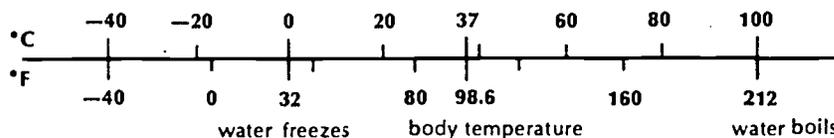
OTHER USEFUL UNITS

- Hectare:** about 2 1/2 acres
Tonne: about one ton



TEMPERATURE

degrees Celsius are used



For more information, write to: Metric Information Office, National Bureau of Standards
 Washington, D.C. 20234



Unit II

CONCEPTS: The International System of Units (SI)
THINKING METRIC

OBJECTIVES	SUPPORTIVE LEARNINGS	SAMPLING OF EXPERIENCES & EVALUATION
------------	----------------------	--------------------------------------

After participating in classroom activities the student will be able to:

identify the 7 base units and their symbols

Metric measurements are organized in a simple logical decimalized system. The modernized form of the metric system (SI) is known as the International System of Units (Système International d'Unités).

There are 7 base units:

length	metre (m)
mass	kilogram (kg)
time	second (s)
electric current	ampere (A)
temperature	kelvin (K)
substance	mole (mol)
luminous intensity	candela (cd)

We use symbols, not abbreviations, so no periods are used.

Symbols are the same in every language.

"Introduction to Metrics" (Transparency presentation in Appendix).

Review transparencies on the 7 base units and symbols from previous lesson.

Reinforce and supplement learnings with charts such as The Metric System (NBS).

OBJECTIVES

SUPPORTIVE LEARNINGS

SAMPLING OF EXPERIENCES & EVALUATION

list the units with which the consumer will deal most frequently

The four most common units with which consumers will deal are:

metre (39.4 in.)
 litre (1.06 qt.)
 kilogram (2.2 lb.)
 degrees Celsius (°Fahrenheit)

"Common Metric Terms and Symbols" transparency.

identify the most commonly used prefixes by name and indicate their values

Prefixes used with units indicate the division or multiple of ten. The most common prefixes and their symbols are:

milli (m) - 1/1000 or 0.001
 centi (c) - 1/100 or 0.01
 deci (d) - 1/10 or 0.1
 deka (da) - 10 X
 hecto (h) - 100 X
 kilo (k) - 1000 X

Flash cards with units, prefixes, symbols and values.

Mobile "Metre, Litre, Kilogram".

Review exercise "Prefixes and Symbols".

discover the relationship of the prefixes with the basic units

Unlike the U.S. customary system, the metric system requires no conversion from unit to unit, except for moving the decimal point.

"Metric Fun 'n' Games" to complete at home.

compare the metric system to our monetary system

Metric units for any given physical quantity relate to each other in a manner similar to our monetary system.

Compare to dollar: Transparency "If a dollar equalled a metre".

identify and apply in future lessons the basic rules for writing metrics in accepted SI usage

-All English speaking nations are officially using the metre and litre form of spelling.
 -All symbols are written in lower case except for those named after a person:

metre m
 Celsius C
 ampere A
 kelvin K

Using chalkboard practice writing metric terms.

- These are symbols, not abbreviations, therefore no periods are used.
- Leave a space between the numeral and the symbol except in writing temperature. 20 cm 20°C
- Do not use "s" with symbol to indicate plural. The number itself indicates that it is plural. 20 cm
- Groups of three digits above and below the decimal are separated by a space - no comma. 1 000
- For a numerical value less than one a zero precedes the decimal. 0.5

THINK METRIC by citing actual present day use of metrics in the U.S.

90 km/hr
 gas 13¢ per litre
 warm weather 25°C
 fever 39°C
 fabric by the metre
 zippers by the centimetre
 body measurements & patterns 87-65-92
 weight kg

Measurements of money, electricity, time will be the same.

pass a written test on the unit with at least 70% accuracy

Bulletin board "Think Metric - Whooo Me?"

Students create a bulletin board of clippings, labels, news items, etc.

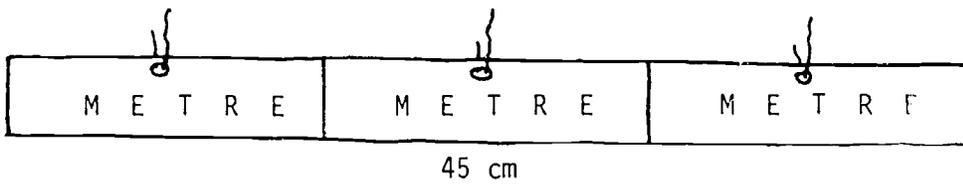
"Metri-cross".

"Metric Scramble".

Test on units, symbols and prefixes.

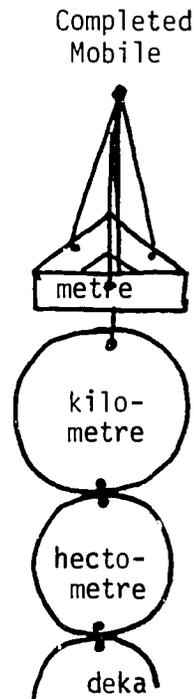
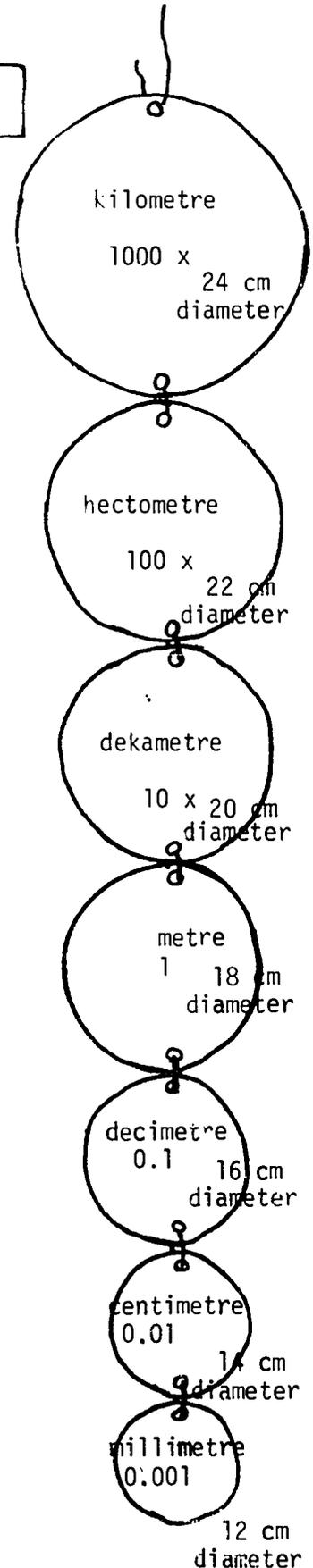
METRE, LITRE, GRAM MOBILE

Given below is an example of the metre. The mobile is made up of all three units of measure. Use the construction directions for the litre and gram.



DIRECTIONS:

1. Fold an 8 cm x 45 cm strip of heavy-weight cardboard into three parts, forming a triangle. Tape inside to hold securely.
2. String yarn through center of each side, leaving yarn long enough to reach classroom ceiling.
3. Make 7 discs (24 cm, 22 cm, 20 cm, 18 cm, 16 cm, 14 cm, 12 cm respectively) out of light-weight cardboard.
4. Label units and prefixes with magic marker.
5. Tie discs together with yarn.
6. "Kilo" disc will have long piece of yarn to reach classroom ceiling, joining on to triangle yarns at ceiling.
7. Note the finished sample.
8. Repeat the same steps for the remaining metric units.
9. Bright colors are eye-catching!



COMMON METRIC TERMS and SYMBOLS

QUANTITY	PREFIX	SYMBOL	LENGTH	VOLUME	MASS (WEIGHT)
X 1 000	kilo	k	<u>kilometre</u>	*	<u>kilogram</u>
X 100	hecto	h	*	*	*
X 10	deka	da	*	*	*
			metre (m)	litre (l)	gram (g)
÷ 10 (0.1)	deci	d	*	*	*
÷ 100 (0.01)	centi	c	centimetre	*	*
÷ 1 000 (0.001)	milli	m	<u>millimetre</u>	<u>millilitre</u>	<u>milligram</u>
*not commonly used					

PREFIXES and SYMBOLS

Write the metric prefixes and symbols in the spaces provided.

		PREFIX	SYMBOL
1000	thousands	_____	_____
100	hundreds	_____	_____
10	tens	_____	_____
1	ones	_____	_____
1/10	tenths	_____	_____
1/100	hundredths	_____	_____
1/1000	thousandths	_____	_____

METRIC FUN 'N' GAMES

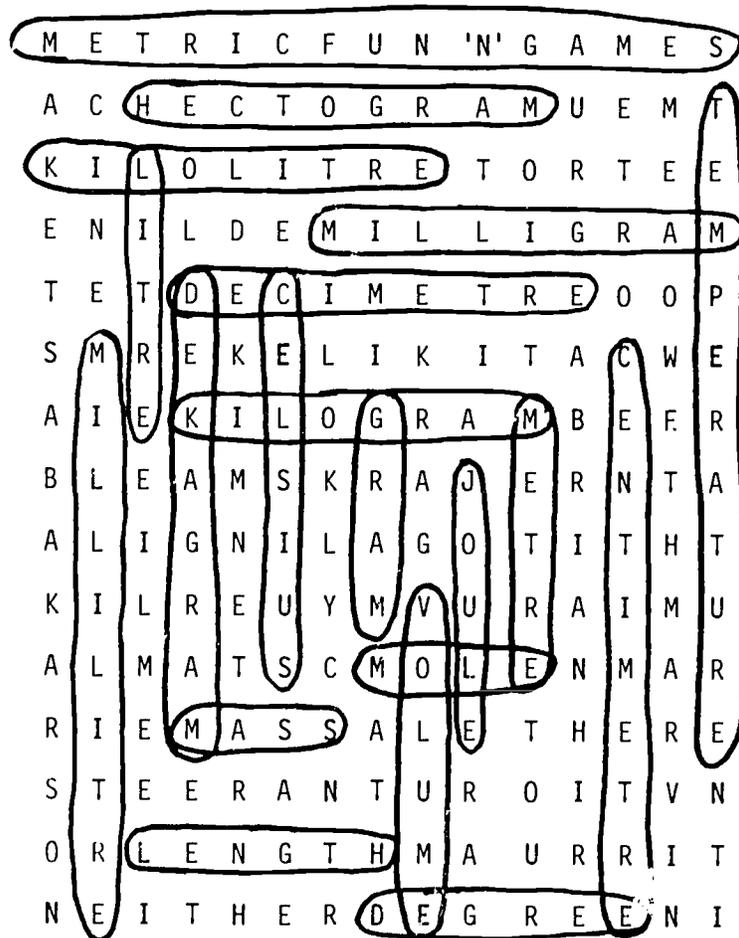
M E T R I C F U N ' N ' G A M E S
A C H E C T O G R A M U E M T
K I L O L I T R E T O R T E E
E N I L D E M I L L I G R A M
T E T D E C I M E T R E O O P
S M R E K E L I K I T A C W E
A I E K I L O G R A M B E E R
B L E A M S K R A J E R N T A
A L I G M I L A G O T I T H T
K I L R E U Y M V U R A I M U
A L M A T S C M O L E N M A R
R I E M A S S A L E T H E R E E
S T E E R A N T U R O I T V N
O R L E N G T H M A U R R I T
N E I T H E R D E G R E E N I

Can you locate all twenty (20) hidden words
pertaining to the metric system?

metric fun 'n' games
hectogram
milligram
centimetre
kilogram
Celsius
metre
litre
gram
joule

decimetre
dekagram
kilolitre
millilitre
length
mass
volume
degree
temperature
mole

KEY: METRIC FUN 'N' GAMES

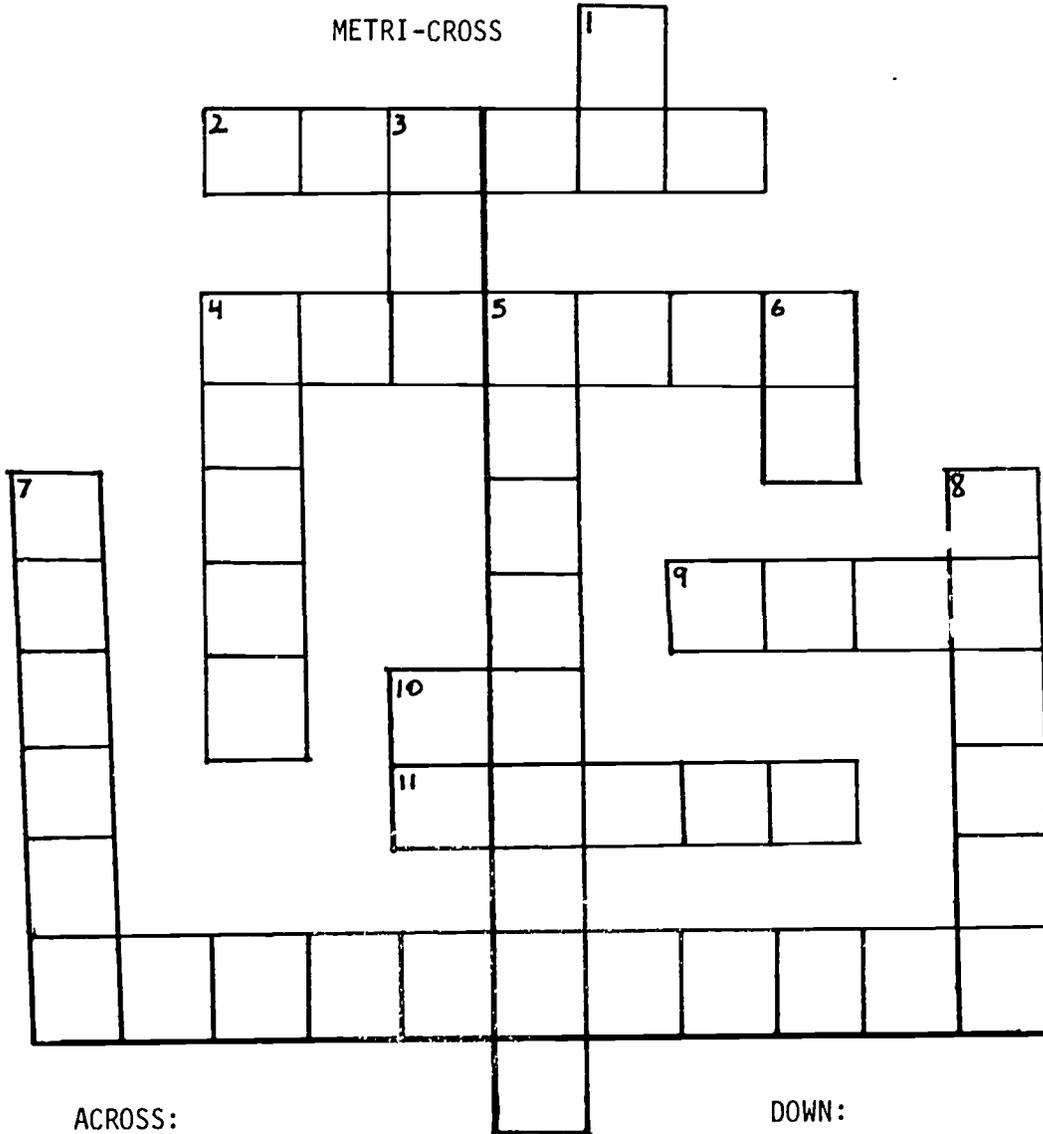


Can you locate all twenty (20) hidden words pertaining to the metric system.

metric fun 'n' games
 hectogram
 milligram
 centimetre
 kilogram
 Celsius
 metre
 litre
 gram
 joule

decimetre
 dekagram
 kilolitre
 millilitre
 length
 mass
 volume
 degree
 temperature
 mole

METRI-CROSS



ACROSS:

DOWN:

- 2. The system of measure you are learning
- 4. Number of centimetres in a metre
- 9. Prefix meaning times 1 000
- 10. Symbol for millimetre
- 11. Base unit for length
- 12. Celsius replaces °Fahrenheit for ____

- 1. Abbreviation for Systeme International
- 3. Metric is based on multiples of ____
- 4. Prefix meaning X 100
- 5. 1/10 of a metre
- 6. Symbol for deka-
- 7. The gram replaces our system for measuring ____
- 8. The litre measures ____
- 10. Symbol for millimetre

KEY

Across

- 2. metric
- 4. hundred
- 9. kilo

- 10. mm
- 11. metre
- 12. temperature

Down

- 1. SI
- 3. ten
- 4. hecto
- 5. decimetre
- 6. da
- 7. weight
- 8. volume
- 10. mm

METRIC SCRAMBLE

The following scrambled words are metric terms. Unscramble them and arrange the circled letters to form the answers to the following sentence.

TWO METRIC TERMS THAT ARE USED FREQUENTLY TODAY ARE

--	--	--	--	--	--	--	--	--	--

and

--	--	--	--

GOOD LUCK!

G	O	O	D
---	---	---	---

L	U	C	K
---	---	---	---

(No need to unscramble this one!)

SASM

O			
---	--	--	--

NITCE

		O	
--	--	---	--

MARG

	O		
--	---	--	--

CETOH

			O
--	--	--	---

CEID

			O
--	--	--	---

TERCIM

O			O	
---	--	--	---	--

TREEM

	O			
--	---	--	--	--

REASUME

		O				O
--	--	---	--	--	--	---

LERTI

		O		
--	--	---	--	--

SUICELS

	O				
--	---	--	--	--	--

Key: Mass, Gram, Deci, Metre, re, Centi, Hecto, Metric, Measure, Celsius. CENTIMETRE and GRAM.

Unit III

CONCEPTS: The METRE as a measure of length and area
 Decimal system

OBJECTIVES	SUPPORTIVE LEARNINGS	SAMPLING OF EXPERIENCES & EVALUATION																		
<p>After participating in classroom activities, the student will be able to:</p>	<p>The metric base unit for length is the metre.</p> <p>One metre is slightly longer than a yard.</p>	<p>"Metre pre test".</p> <p>Review and discuss pertinent transparencies.</p>																		
<p>identify units of the metre, using proper terms and symbols with 100% accuracy</p>	<p>m is the symbol for metre.</p> <p>The measures that we presently use for length will be replaced by the metre: foot, inch, mile, yard, hand, cubit, fathom, furlong.</p>	<p>Using an enlarged poster board metre ruler, illustrate the metre units (each in a different color).</p> <p>Compare them to the customary ruler and yard stick.</p>																		
<p>demonstrate the relationship between units of the metre</p>	<p>The denominations in practical use, with their symbols and values are:</p> <table data-bbox="505 1297 862 1570"> <tr> <td>*kilometre</td> <td>km</td> <td>1000 X</td> </tr> <tr> <td>hectometre</td> <td>hm</td> <td>100 X</td> </tr> <tr> <td>dekametre</td> <td>dam</td> <td>10 X</td> </tr> <tr> <td>*decimetre</td> <td>dm</td> <td>0.1</td> </tr> <tr> <td>*centimetre</td> <td>cm</td> <td>0.01</td> </tr> <tr> <td>*millimetre</td> <td>mm</td> <td>0.001</td> </tr> </table> <p>10 mm = 1 cm 10 cm = 1 dm 10 dm = 1 m 100 cm = 1 m 1000 m = 1 km</p>	*kilometre	km	1000 X	hectometre	hm	100 X	dekametre	dam	10 X	*decimetre	dm	0.1	*centimetre	cm	0.01	*millimetre	mm	0.001	<p>Use a metric rule to draw designated line segments.</p>
*kilometre	km	1000 X																		
hectometre	hm	100 X																		
dekametre	dam	10 X																		
*decimetre	dm	0.1																		
*centimetre	cm	0.01																		
*millimetre	mm	0.001																		

		<p>Divide the class into small groups. Each group is given a metre stick, 20 decimetre sticks, 20 centimetre blocks and paper clips. Each group is to experiment with these materials and answer the questions asked on an accompanying worksheet. The teacher goes over the answers to the worksheet questions with each group as they finish. See: "Metre Worksheet".</p> <p>"Kilometre Activity Sheet".</p>
	<p>One inch = 2.54 cm Longer distances will be measured in kilometres. One km = app. 2/3 mile 55 mph = 88 km/hr</p>	
construct and use simple metric measuring devices	Constructing and using metric measures assists one in THINKING METRIC.	"Metric Measures". Students construct metre stick and/or tape measure.
use personal reference measures to estimate metric lengths	The body may be used as a device for estimating metric lengths. Estimating helps one THINK METRIC, thus facilitating the transition to the metric system.	Compare metric lengths by observation and physical comparison. Complete "Body Metrics" worksheet. See: "Practice in Estimation" and
recognize distances that approximate 1 mm, 1 cm, 1 m	Recognizing metric distances is achieved through the practice of taking distance measurements.	Practice with small measures. Working individually, follow directions on "Metric Dot".

develop the concept of area by differentiating among cm , cm^2 and cm^3

Area ($\ell \times w$) is the amount of surface space.

Area uses the length measurements expressed in

mm^2 square millimetres

cm^2 square centimetres

m^2 square metres

km^2 square kilometres

Hectare = 10 000 square metres (m^2)

Farm land is measured in hectares.

Volume ($\ell \times w \times h$) is the amount of space occupied by a quantity of matter.

Volume and capacity use length measurements expressed in:

mm^3

$\text{cm}^3 = \text{mL} = 1 \text{ g}$

$\text{dm}^3 = \ell = 1 \text{ kg}$

m^3

km^3

The exponents are written slightly raised from the symbol.

develop skill in using the decimal system by converting from one metric unit to another with 100% accuracy

Converting to other units of the metre can be done quicker and more simply than with the customary system.

When decimal is moved to the left, the value becomes a smaller part of the base unit.

Determine own hand area in square centimetres using a grid (Appendix).

Estimate, measure and calculate area of given space (ex: dining room for wallpaper, bathroom floor for tile). See: "Area Exercise".

Determine area of given geometric figures.

Scale drawing of bedroom floor plan for furniture.

"Metric Area". See "Area Exercise" sheet.

Measure the size of this page. Calculate its area in cm^2 . Convert to mm^2 , m^2 .

Practice movement of decimal to arrive at a different prefix for a metric base unit.

"Metric Length Exercise".

OBJECTIVES

SUPPORTIVE LEARNINGS

SAMPLING OF EXPERIENCES & EVALUATION

respond accurately
to given problems
linear measure

Practice in estimation, followed with
verification by actual measurement, is
a good way to learn to THINK METRIC.

When decimal is moved to the right, the
number becomes a larger part of the base
unit.

Quiz: "Metric Length".
"Metre Quiz".

Play: "Metre Maid".
"Metric Milly".

Select a card on which is written
a question of length to be es-
timated in the presence of the
teacher, actually measured,
recorded and converted to both a
larger and smaller unit.

See: "Twenty Measurement Problems".

Actual measurement should be
accurate to within the nearest
cm and the conversion 100%
correct.

"Metre Post Test".

METRE PRETEST

You will not be graded on this test. It is not expected that you know these answers now. Thinking about the questions now will introduce you to some basic concepts and help you to recognize the important ideas as they appear in our studies.

DO NOT WRITE ON THIS SHEET. Write the letter indicating the correct answer for each statement on the response sheet.

1. The metre is a measure of
a) weight b) length c) volume d) time
2. A metre equals 100
a) kl b) mm c) km d) cm
3. The correct symbol for the metre is
a) m b) M c) m. d) mm
4. The prefix centi means
a) 100 b) 10 c) 1/10 d) 1/100
5. Which of the following lines appears to be equal to 2 cm?
a) _____ b) _____ c) _____ d) _____
6. The smallest of the following units is
a) centimetre b) millimetre c) metre d) kilometre
7. The largest of the following units is
a) centimetre b) millimetre c) metre d) kilometre
8. In place of inches, what metric unit will be used to measure similar distances?
a) centimetre b) litre c) metre d) kilometre
9. A basketball player would be approximately how tall?
a) 10 centimetres b) 1 metre c) 2 metres d) 2 kilometres
10. The length of a new pencil would be approximately
a) 8 millimetres b) 8 kilometres c) 18 centilitres
d) 18 centimetres

- KEY:
- | | |
|------|-------|
| 1. B | 6. B |
| 2. D | 7. D |
| 3. A | 8. A |
| 4. D | 9. B |
| 5. C | 10. D |

Metre Worksheet

Using the materials supplied by the teacher, perform the following activities and answer the accompanying questions.

Which do you think is longer, a yard or a metre?

a) Using a yard stick, measure the metre stick. ___ inches.

b) The length of a yard stick is ___ inches.

The difference between measurements a and b is ___ inches, therefore the metre (m) is longer than a yard. $1\text{ m} = 1.1\text{ yds.}$

How many decimetres would it take to equal one metre? ___

How many centimetres would it take to equal a decimetre? ___

If the diameter of the wire of a paperclip is equal to one millimetre (0.001 m), how many millimetres are equal to one centimetre? ___

How many centimetres does it take to make one metre? ___

How many millimetres does it take to make one metre? ___

1 metre = ___ decimetres
 ___ centimetres
 ___ millimetres

Among the following terms, what is the base unit:

millimetre, centimetre, decimetre. _____

Metre is the metric unit used to measure (select one):

a) volume, b) mass, c) length, d) temperature. _____

Milli, centi, and deci are common prefixes used with all metric base units that are smaller than the base unit itself.

The prefix milli means thousandth therefore $1\text{ mm} = 0.001\text{ m}$

centi means hundredth therefore $1\text{ cm} = \underline{\hspace{1cm}}\text{ m}$

deci means tenth therefore $1\text{ dm} = \underline{\hspace{1cm}}\text{ m}$

THINK METRIC!!

KILOMETRE ACTIVITY SHEET

Using the U.S. map attached, measure to the nearest centimetre the distance between the designated cities. Calculate the distance in kilometres. Scale : 1 cm = 100 km.

CITIES	cm	km
1. Los Angeles to St. Paul, Minnesota	_____	_____
2. Butte, Montana to Miami, Florida	_____	_____
3. Washington, D.C. to New Orleans	_____	_____
4. Omaha, Nebraska to Chicago, Illinois	_____	_____
5. Santa Fe, New Mexico to Raleigh, N.C.	_____	_____
6. Reno, Nevada to New York City	_____	_____
7. Seattle, Washington to Houston, Texas	_____	_____
8. Tucson, Arizona to Memphis, Tennessee	_____	_____
9. Denver, Colorado to Portland, Maine	_____	_____
10. Tulsa, Oklahoma to Pittsburgh, Penna.	_____	_____

On the bulletin board is a map of the area of our town. Measure the distance to the following towns:

From Indiana, Pa., to

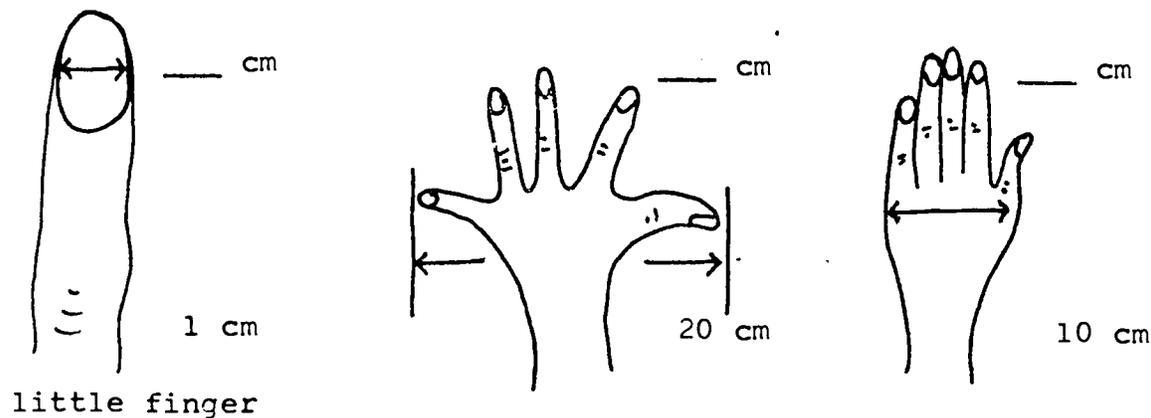
Homer City	_____	km
Clymer	_____	km
Plumville	_____	km
Elderton	_____	km
Blairsville	_____	km



1cm represents 100 km

BODY METRICS

Using a metre measure, take the measurements of your left hand as indicated in the drawings below. Place your measurements for each in the space provided. Compare your body measurements with the listed averages for each.



Estimate the lengths of the following items, using your body measurers. Place your estimates in the proper column.

Now, measure these items using a metre measure. Place the correct measurement in the second column.

HOW CLOSE IS YOUR BODY MEASURING ??

ITEM	BODY ESTIMATE	ACTUAL MEASUREMENT
1. Shears	___ cm	___ cm
2. Scissors	___ cm	___ cm
3. Button	___ cm	___ cm
4. Table	___ m	___ m
5. Straight pin	___ cm	___ cm
6. Elastic	___ cm	___ cm
7. Spool of thread	___ cm	___ cm
8. Hem gauge	___ cm	___ cm
9. Bolt of fabric	___ cm	___ cm
10. Bobbin	___ cm	___ cm

O
N
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M
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T
R
E

METRIC METER TIPS

Duplicate this pattern on lightweight cardboard. Cut the ten sections apart carefully. Each section should measure one decimetre. Tape all ten sections together carefully to measure one metre. With a colored pencil or pen, mark each decimetre into ten equal sections, labeling each line 1, 2, 3 . . . up to 100. Each of these small sections is equal to one centimetre. Print your name on the back of your meter stick.

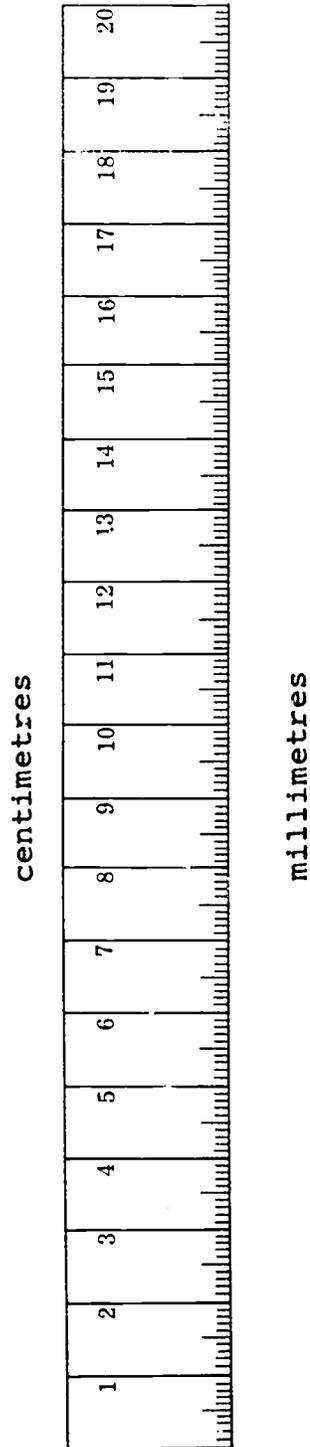
To make a folding metre tape, follow the above directions, using regular weight copy paper instead of cardboard.

You may wish to reinforce your tape by laminating it or by backing it with tape, such as plastic tape, masking tape or coated tape.

**HAPPY
METRIC
MEASURING!**

METRIC MEASURE

This page may be duplicated. Cut out the 20 centimetre measure and glue to cardboard.



PRACTICE IN ESTIMATION

For the following list of items, first estimate the distances. Then make the actual measurement and convert to the larger or smaller measurement as indicated.

<u>OBJECT</u>	<u>ESTIMATE</u>	<u>ACTUAL</u>	<u>OR</u>
refrigerator (width)	___ cm	___ cm	___ mm
width of window	___ m	___ m	___ dm
length of island	___ m	___ m	___ cm
length of kitchen	___ m	___ m	___ km
width of kitchen	___ m	___ m	___ hm
height of gas range	___ cm	___ cm	___ dam



METRIC DOTS are free-form shapes cut from cardboard. Use bright fluorescent paper for the "dots".

OBJECT: Each student will receive one Metric Dot Card which reveals a place or thing in the school to which they are to calculate a distance measurement in the metric system.

DIRECTIONS:

1. After receiving a Metric Dot Card the student will take a metre stick and begin to measure from any desired spot in the school to the designated area shown on the card.
2. The person should then note the distance from the starting point to the designated area (in pencil).
3. Tape the Metric Dot Card on the wall at the original starting place.

By completing this activity, the student has not only practiced using the metric system of measurement, but is also making other people in the school aware of the metric system of measuring length.

Sample cards might include:

From this ● it is _____ metres to the library.
metres to the gym.
centimetres to the floor.
metres to the office.
metres to the exhibit case.
metres to the cafeteria

decimetres to the art room.
metres to the faculty room.
metres to the bottom of the steps.
centimetres to the water fountain.
decimetres to the metric bulletin board.
metres to the front entrance.

AREA EXERCISE

Determine the area of the floor of a room with the following dimensions:

	CUSTOMARY	METRIC
Length	14 ft. 6 in.	442 cm
Width	12 ft. 5 in.	379 cm

CALCULATIONS

Dimensions in inches

$$(14 \times 12) + 6 = 174 \text{ in.}$$

$$(12 \times 12) + 5 = 149 \text{ in.}$$

$$174 \times 149 = 25,926 \text{ sq. in.}$$

Divide by 144 to get sq. ft.
= 180 sq. ft. (app.)

Then divide by 9 for sq. yd.
= 20 sq. yd.

Dimensions in centimetres

$$442 \times 379 = 167\,600 \text{ cm}^2$$

Total cm^2 divided by number of square centimetres in a square metre (10 000) equals number of square metres.

Just move decimal 4 places to the left.
= 17 square metres (app.)

METRIC AREA

On a table you find several rectangles and triangles. Find the perimeter (distance around) and the area (length x width) in centimetres.

perimeter (cm)

area (cm²)

- A.
- B.
- C.
- D.
- E.

METRIC LENGTH EXERCISE

Are the following measurements more, equal to, or less than each other? $<$ means less than, $=$ means equal to, and $>$ means more than.

CIRCLE ONE

- | | | | |
|----|------------------|---------|----------------|
| A. | 1 millimetre | $< * >$ | 1 metre |
| B. | 1000 millimetres | $< = >$ | 1 metre |
| C. | 100 centimetres | $< = >$ | 1 metre |
| D. | 10 metres | $< = >$ | 1 kilometre |
| E. | 1000 metres | $< = >$ | 1 kilometre |
| F. | 10 decimetres | $< = >$ | 1 metre |
| G. | 500 metres | $< = >$ | 0.5 kilometre |
| H. | 1 metre | $< = >$ | 0.01 kilometre |
| I. | 100 metres | $< = >$ | 1 dekametre |
| J. | 1 dekametre | $< = >$ | 10 metres |
| K. | 100 metres | $< = >$ | 1 hectometre |
| L. | 100 dekametres | $< = >$ | 1 kilometre |
| M. | 10 dekametres | $< = >$ | 1 hectometre |

- KEY:
- | | | | |
|----|-----|----|-----|
| A. | $<$ | H. | $<$ |
| B. | $=$ | I. | $>$ |
| C. | $=$ | J. | $=$ |
| D. | $<$ | K. | $=$ |
| E. | $=$ | L. | $=$ |
| F. | $=$ | M. | $=$ |
| G. | $=$ | | |

METRIC LENGTH

Write the missing prefix in the blank provided.

DECI **HECTO** **CENTI** **MILLI** **DEKA**

- A. 10 _____ metres = 1 metre. **KILO**
 B. 1 _____ metre = 1 000 metres.
 C. 1 _____ metre = 10 millimetres.
 D. 1 _____ metre = 100 metres.
 E. 10 _____ metres = 1 kilometre.
 F. 1 _____ metre = 10 metres.
 G. 1 _____ metre = 10 dekametres.
 H. 1 _____ metre = 10 centimetres.
 I. 100 _____ metres = 1 metre.
 J. 1000 _____ metres = 1 metre.

- KEY: A. deci F. deka
 B. kilo G. hecto
 C. centi H. deci
 D. hecto I. centi
 E. hecto J. milli

METRE QUIZ

I. Circle the correct answer:

1. The metric unit of length is
a) litre b) metre c) gram.
2. Which is longer
a) metre b) yard
3. Which is longer than a metre?
a) millimetre b) kilometre c) decimetre
4. The smallest of the following is
a) metre b) hectometre c) dekametre.
5. Which is smaller than a decimetre?
a) hm b) dam c) cm
6. How many metres are there in one kilometre?
a) 10 b) 100 c) 1000
7. How many millimetres are there in one decimetre?
a) 10 b) 100 c) 1000

II. Arrange the following from largest to smallest by listing them in order in Column 2.

Column 1	Column 2
centimetre	
hectometre	
dekametre	
metre	
millimetre	
kilometre	
decimetre	

III. Match the prefix symbol with its respective amount.

Symbol	Amount
da	0.001
c	1000 x
d	0.1
h	10 x
m	100 x
k	0.01

Key to METRE QUIZ

- I.
 1. litre
 2. metre
 3. kilometre
 4. dekametre
 5. cm
 6. 1000
 7. 100

- II.
 - kilometre
 - hectometre
 - dekametre
 - metre
 - decimetre
 - centimetre
 - millimetre

- III.
 - da 10 x
 - c 0.01
 - d 0.1
 - h 100 x
 - m 0.001
 - k 1000 x

TWENTY MEASUREMENT PROBLEMS

1. The distance from this spot to the water cooler is _____ metres.
2. The lower window pane is _____ cm wide.
3. It is _____ dm from this spot to the avocado range.
4. It is _____ dm from this spot to the door.
5. This bulletin board is _____ centimetres long.
6. My seat is _____ dm away from the teacher's desk.
7. The floor tile are _____ centimetres square.
8. This box of salt is _____ cm in diameter.
9. This cup is _____ cm in diameter.
10. From this spot, it is _____ dm to the nearest sink.
11. This counter is _____ m long.
12. This filing cabinet is _____ centimetres long.
13. The display case in the hall is _____ dm long.
14. This washing machine is _____ decimetres high.
15. This towel is _____ centimetres long.
16. This napkin is _____ cm wide.
17. This pencil is _____ centimetres long.
18. This pan has a diameter of _____ centimetres.
19. This cutting board is _____ centimetres long.
20. It is _____ dm from this spot to the folding door.

METRE POST TEST

DO NOT WRITE ON THIS SHEET. Write the letter indicating the correct answer for each statement on the response sheet.

1. The metre is a measure of
a) weight b) length c) volume d) time
2. A metre stick would be used to measure
a) distance between cities b) width of a book
 c) length of a table d) your waist
3. In place of inches, what metric unit will be used to measure the equivalent distances?
 a) centimetre b) litre c) metre d) kilometre
4. A metre equals 100
a) kl b) mm c) km d) cm
5. The correct symbol for millimetre is
a) M b) m c) mm d) mm.
6. The prefix kilo means
 a) 1000 b) 100 c) 10 d) 1/100
7. The prefix milli means
a) 1000 b) 100 c) 1/100 d) 1/1000
8. The prefix centi means
a) 1000 b) 100 c) 1/100 d) 1/1000
9. The length of a dining room wall might measure
a) 40 cm b) 40 m c) 8 m d) 80 mm
10. The length of a dress zipper might measure
a) 35 mm b) 35 cm c) 3.5 cm d) 3.5 m
11. The diameter of a nickel is approximately
a) 2.1 m b) 2.1 mm c) 21 mm d) 21 cm
12. Two cities are approximately 20 miles apart. The equivalent metric measurement is
a) 8 km b) 35 km c) 3500 m d) 80 dm
13. Which of the following lines appear to be 2 cm long?
a)  b)  c)  d) 
14. The diameter of the wire in a paper clip is approximately
a) 1 cm b) 1 ml c) 1 m d) 1 mm
15. A metre is
a) slightly shorter than a yard b) the same length as a yard
 c) slightly longer than a yard d) about twice the length of a yard.

Unit IV

CONCEPT: The LITRE as a measure of volume/capacity

OBJECTIVES	SUPPORTIVE LEARNINGS	SAMPLING OF EXPERIENCES & EVALUATION
After participating in classroom activities the student will be able to: recognize the name and symbol for the metric unit of volume	The litre is the unit of volume or capacity in the metric system (derived unit). The litre is defined as a cubic decimetre (dm^3). A litre is a little larger than a quart. Symbol = ℓ (often mistaken for numeral 1, so it is best to write the name in full, or use the script (ℓ) form. Use same prefixes as those used with the metre.	Review and discuss pertinent transparencies. Display of volume measures. Name products which would be measured or purchased by litres.
list the prefixes commonly used with litre, write their symbols and values with 100% accuracy	The units most commonly used are: litre decilitre (dl) 0.1 millilitre (ml) 0.001 $1 \text{ ml} = 1 \text{ cubic centimetre (cm}^3\text{)}$ cc is no longer correct $1 \text{ tsp.} = 5 \text{ ml}$ $1 \text{ tbsp.} = 15 \text{ ml}$ $1 \text{ cup} = 250 \text{ ml}$ $1 \text{ litre} = 1.06 \text{ qts.}$	On enlarged drawing of a litre measure, identify the smaller units. Crossword puzzle. Play "Litre Maid" (See Metre Maid in Appendix).



OBJECTIVES

SUPPORTIVE LEARNINGS

SAMPLING OF EXPERIENCES & EVALUATION

construct and label simple volume measures

A correctly constructed litre measure provides you with a useful tool for food preparation.

"Volume Measures".
Using 9 oz. plastic cups, bottles, milk cartons and other containers, make own volume measures: litre, 250 mL cup, cubic decimetre, etc.

compare the relationship between linear and volume measure

Volume can be determined by measuring $h \times w \times d$ (cm^3)
 $1 \text{ mL} = 1 \text{ cm}^3$
 $1 \text{ L} = 1 \text{ dm}^3$

VOLUME transparency.

Determine volume of refrigerator.

Calculate the cm^3 of various boxes or containers.

recognize volumes that approximate 1 cm^3 and 1 litre

Estimating then measuring volume assists one in learning the metric system.

"Litre Practice Sheet".
"Measuring With Litres".

follow directions in preparing a beverage using volume measures

Recipes written in metric measures are easy to follow. Use same principles as when measuring with customary units.

Prepare "Metric Mist-ery".

VOLUME MEASURES

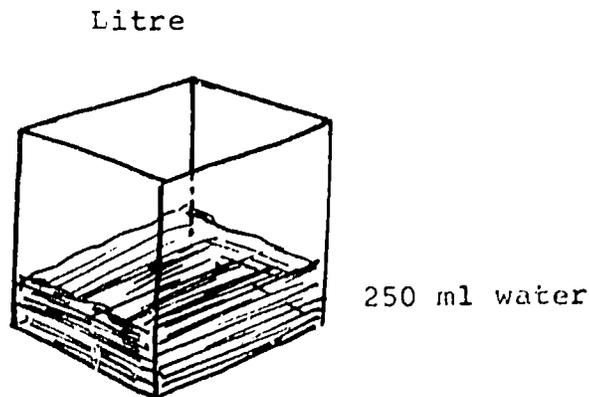
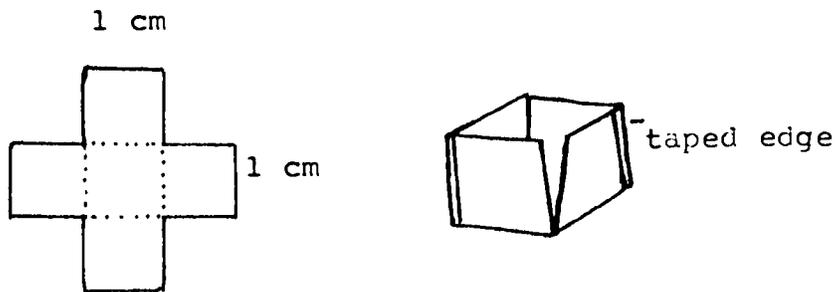
Following pattern below, use light weight cardboard to make a cubic centimetre (cm^3). $1 \text{ cm}^3 = 1 \text{ ml}$

Fold on dotted line and tape edges as shown.

Using 10 cm (1 dm) sides, make a cubic decimetre (dm^3).
 $1 \text{ dm}^3 = 1 \text{ litre}$.

Compare the weight (mass) of a liquid to its volume:

- How much water would you need to put into the litre to have 250 ml?
- Using a balance or scales, weigh 250 grams of water.



75

Litre Practice Sheet

1. There are several containers at table No. 1. First write down how much water you think each will hold. Now, use the litre measure to fill them. What did you find out?

Container	My Guess	Actual Amount
A	_____	_____
B	_____	_____
C	_____	_____

2. On table No. 2 you will find a measure with exactly one litre of water. There is also a container marked "?" filled with a pre-measured amount of water. By looking at the full litre, estimate the amount of liquid in the container marked "?".

_____ l your estimate

_____ l actual measurement

3. On table No. 3 you will find typical servings of various beverages. Estimate, then measure, using the 500 ml measure:

Beverage	Estimate	Actual
Orange juice	_____ ml	_____ ml
Cup of tea	_____ ml	_____ ml
Glass of water	_____ ml	_____ ml

4. Determine the volume of the containers found on Table No. 4. You will need your metre ruler. Test your calculation by putting that amount of water in the container.

Container	Calculation	Amount
A		
B		
C		

MEASURING WITH LITRES

LAB # _____

SCORE _____

DIRECTIONS: Using a customary liquid measuring cup and a millilitre measure, find the following millilitres of water. Estimate the amount in millilitres first and write your estimate in the block below. Finally, measure the millilitres accurately.

- | | Estimate | Actual |
|---|----------|--------|
| 1. 1 cup = | | |
| 2. 3/4 cup = | | |
| 3. 2/3 cup = | | |
| 4. 1/2 cup = | | |
| 5. 1/3 cup = | | |
| 6. 1/4 cup = | | |
| 7. 1 Tablespoon = | | |
| 8. 1 teaspoon = | | |
| 9. If 1 cubic decimetre equals 1 litre of water, how much water will be in 1 cubic metre? _____ (Do your math below). | | |

10. If a recipe of salad dressing calls for a cup of oil, 1/4 cup vinegar, 2 T. water, and 1 tsp. spices, what will the total volume be in millilitres? _____ (Do your math below).



METRIC MIST - ery

Combine in a saucepan:

450 ml cranberry juice

800 ml water

1 stick cinnamon

4 whole cloves

Bring to a boil, then remove from heat.

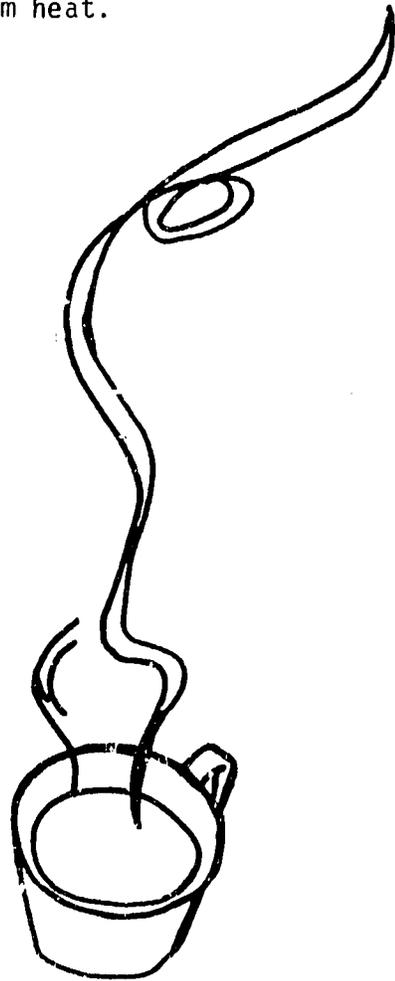
Remove spices.

Add and mix well:

1 small can frozen lemonade

32 g sugar

Reheat and serve.



Unit V

CONCEPT: The GRAM as a measure of mass/weight

OBJECTIVES

SUPPORTIVE LEARNINGS

SAMPLING OF EXPERIENCES & EVALUATION

After participating in classroom activities the student will be able to:

distinguish between mass and weight

list the units most commonly used, with their symbols and values

Mass is the amount of matter in an object. It refers to what we commonly refer to as weight.

However, weight is the measurement of gravitational force on an object and varies with location. Mass remains the same everywhere.

Since the gram is rather small for practical applications, the kilogram has been officially designated as the base unit of mass.

The denominations in practical use are.

milligram (mg)

gram (g)

kilogram (kg)

One gram is about the weight of a paperclip.

200 nickels equal 1 kilogram.

1 kg = 2.2 lbs.

The mass of a person is given in kilograms.

1000 mg = 1 g

1000 g = 1 kg

1000 kg = 1 tonne

Review and discuss pertinent transparencies.

To help develop a sense of mass, pass around objects of various weights. (Borrow mass pieces from science teacher).

Use metric bathroom scales to determine body mass.

<p>identify in writing the relationship between mass, volume and length as they learn</p> <ul style="list-style-type: none"> to compute metric mass from metric volume 	<p>In the metric system mass, volume and length are correlated:</p> <p>1 ml water = 1 g = 1 cm³ 1 litre water = 1 kg = 1 dm³ 1 m³ = 1 tonne</p>	<p>Compare the mass of a liquid to its volume.</p> <p>Demonstrate correlation using:</p> <ul style="list-style-type: none"> 1 ml water 1 cm³ 1 paper clip, etc. <p>Demonstration of the dm³ as being equal to 1 kg and a litre.</p>
<p>develop skill in the use of scales and balances to correctly determine the mass of given items</p>	<p>Scales or balances are used to determine mass.</p>	<p>Demonstrate correct use of scales and balances.</p>
<p>develop skills in determining metric mass by estimating, weighing and recording the weights of designated objects</p>	<p>Size is not a reliable predictor of mass.</p>	<p>Complete worksheets:</p> <ul style="list-style-type: none"> "Weighing By Grams", "Gram Practice", <p>Discussion:</p> <p>Accuracy of measuring time involved quality of measuring or weighing devices.</p>
<p>exhibit skills in metric mass by converting a recipe to gram units</p>	<p>Writing recipes in metric form will require "rounding" up or down in amounts.</p>	<p>Convert a recipe to metric mass.</p>

OBJECTIVES

SUPPORTIVE LEARNINGS

SAMPLING OF EXPERIENCES & EVALUATION

accrue an awareness of the commercial use of metric units

Canned fruit and vegetable weights are indicated in both ounces and grams.
Canned juice volume is indicated in ounces and litres.
Nutrition information on food labels will be expressed metrically.

Display of boxes and cans of food with metric labels.

Examine labels

Students visit various stores in pairs.

Shop for 15 minutes, recording information on "Metric Shopper".

(or arrange classroom as a Metric Market, with areas for estimating, weighing, etc.)

solve mathematical problems using metric units

Shopping is easier with metrics due to the decimal system.

Unit pricing activity
"Metric Market"

Discussion - ease or difficulty of computing unit price in grocery stores.

WEIGHING BY GRAMS

LAB # _____

Score

Names of Lab members present:

DIRECTIONS: Estimate each of these dry ingredients in grams. Record your estimate. Then, using gram scales, weigh and record the weight in grams. Use the correct abbreviations after the weight.

	Estimate	Actual Weight
1. 1/2 tsp. salt	_____	_____
2. 1 tsp. baking soda	_____	_____
3. 1 tsp. baking powder	_____	_____
4. 1/2 c. sifted flour	_____	_____
5. 1/4 c. rolled oats	_____	_____
6. If 1 cubic decimetre = 1 litre of liquid, and 1 litre of water = 1 kilogram in weight, how much would 5 cubic decimetres of liquid (water) weigh? _____		

Do your math below:

7. If 1 kilogram = 2.2 pounds, how much would a 150-pound person weigh in kilograms? _____

Do your math below:

GRAM PRACTICE

1. There are 8 objects on table No. 1. Beside each object is a list of three figures representing possible weights. In the blank following the name of each object, write the figure you have chosen as the correct weight.

1. box of thumbtacks _____
2. 1 dollar bill _____
3. 1 box powdered sugar _____
4. 2 nickels _____
5. 2 pounds cheese _____
6. 25 pounds flour _____
7. text book _____
8. chalkboard eraser _____

2. At table No. 2 is a set of personal scales. Determine your weight in kilograms by using the scales.

My weight is _____ kg.

I weigh _____ lbs. (kg x 2.2)

3. Using the objects on table No. 3, estimate the weights in grams or kilograms, then weigh them to see how close you were.

Object	Estimate	Actual Mass
1 cup sugar	_____	_____
1 pound salt	_____	_____
textbook	_____	_____
pencil	_____	_____
chalk	_____	_____
ruler	_____	_____

METRIC SHOPPER

As you shop, locate items which are marked metrically.

List them here

Metric unit

Customary unit

Of those products you found, which are labeled only in metrics?

What items are most often dual labeled?

Why is metric labeling of value to us?

Why are the measurements expressed in different units?

METRIC MARKET

At the table are grocery items labeled A and B. A is marked in customary units. B is marked in metric units.

A Find the unit price :

Large package -

Small package -

which is the better buy?

B Find the unit price :

Large package -

Small package -

Which is the better buy?

Which problem was easier to compute?

Which of these are you most likely to find as you shop?
(Check only those which are expressed in the proper unit for the item).

- 1. Four kilograms of potatoes.
- 2. Ten kilometres of gasoline.
- 3. One metre of ribbon.
- 4. One kilogram of homogenized milk.
- 5. One litre of macaroni.
- 6. One hundred centimetres of lace.
- 7. Fourteen grams of oregano seasoning.
- 8. Ten grams of denim fabric.
- 9. One litre of orange juice.
- 10. A 255 gram box of crackers.

KEY to last item: Proper units are 1, 3, 6, 7, 9 and 10.

Unit VI

CONCEPT: The JOULE

OBJECTIVES	SUPPORTIVE LEARNINGS	SAMPLING OF EXPERIENCES & EVALUATION
After participating in classroom activities, the student will be able to: differentiate between kilocalorie and kilojoule and correctly write the symbol for the metric unit	All forms of energy are expressed in joules (J). Pronounced jewels. The nutrition calorie, which equals one kilocalorie, will be replaced by the kilojoule (kJ). 1 Calorie (kilocalorie)= 4.18 kJ	Review and discuss transparencies on JOULE.
calculate correctly the kilojoules in a day's diet	A 4 000 kilojoule diet is equal to a 1,000 calorie diet.	Keep record of day's meals, including snacks. Using the calorie chart from the Appendix of your text, calculate the total calories for food intake. Convert to kilojoules.

Unit VII

CONCEPT: Measuring temperature in degrees Celsius

OBJECTIVES	SUPPORTIVE LEARNINGS	SAMPLING OF EXPERIENCES & EVALUATION										
<p>After participating in classroom activities, the student will be able to:</p> <p>write the name of the metric unit for temperature, as well as its respective symbol</p>	<p>Although kelvin is the base unit for (absolute) temperature, Celsius is the internationally preferred unit for practical use.</p> <p>Although we've used Centigrade, since 1948 Celsius is the only official term in most countries.</p>	<p>Display of Celsius thermometers commonly used in the home.</p> <p>Review and discuss the Celsius transparency.</p>										
<p>identify common reference points on the Celsius scale</p>	<p>Common temperatures to remember:</p> <table><tbody><tr><td>freezing</td><td>0°C</td></tr><tr><td>room temperature</td><td>20°C</td></tr><tr><td>warm day</td><td>25°C</td></tr><tr><td>normal body temperature</td><td>37°C</td></tr><tr><td>boiling</td><td>100°C</td></tr></tbody></table>	freezing	0°C	room temperature	20°C	warm day	25°C	normal body temperature	37°C	boiling	100°C	<p>Bulletin board on Celsius.</p> <p>Visual "Weather Man".</p>
freezing	0°C											
room temperature	20°C											
warm day	25°C											
normal body temperature	37°C											
boiling	100°C											
<p>exhibit skill in estimating, measuring and reading temperature metrically</p>	<p>Daily practice in reading degrees Celsius will more readily familiarize one with the Celsius scale.</p>	<p>Problem solving using everyday situations involving temperature.</p> <p>Worksheet "Bid Goodnight to Fahrenheit".</p> <p>Revise: oven dials and daily weather forecast.</p>										

OBJECTIVES

SUPPORTIVE LEARNINGS

SAMPLING OF EXPERIENCES & EVALUATION

develop ability to adapt from the Fahrenheit to the Celsius scale

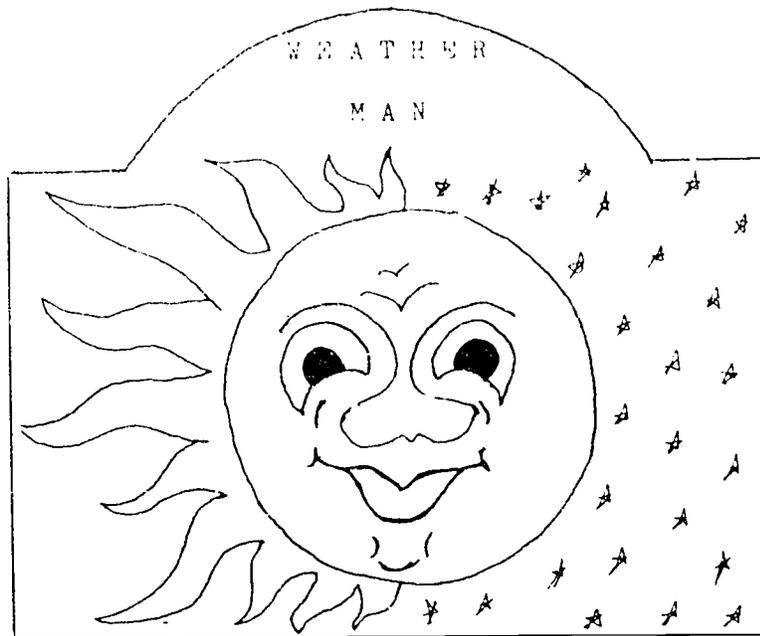
For most recipes the temperature can be changed to degrees Celsius by taking one-half the Fahrenheit value.

$$360^{\circ}\text{F} = 180^{\circ}\text{C (exact)}$$

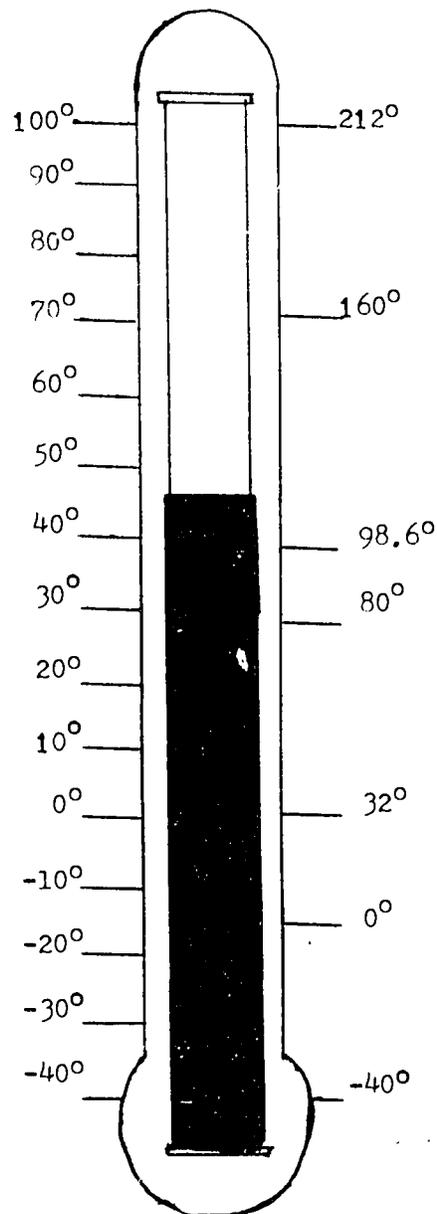
temperature settings for baking should be rounded to the nearest 10 degrees Celsius.

See transparency:
Fahrenheit - Celsius.

"Weather - or Not".



$$^{\circ}\text{C} = ^{\circ}\text{F} - 32 \left(\frac{5}{9} \right)$$



DIRECTIONS:

1. 90 cm x 38 cm plywood
2. acrylic paint
3. elastic inserted for mercury through top and bottom slits in the board (magic marker may be used to color half the elastic red)

CELSIUS vs. FAHRENHEIT

BID GOODNIGHT TO FAHRENHEIT

THINK CELSIUS

1. Read the temperature of these liquids:

ice water ___°C

cold tap water ___°C

hot tap water ___°C

full boiling water ___°C

2. Celsius thermometers have been placed in various locations. Record the temperatures of the following:

room temperature ___°C

outdoors - sun ___°C

 shade ___°C

refrigerator ___°C

oven at 350°F ___°C

3. Today's temperature is written on the chalkboard. Translate it into metric terms.

WEATHER - OR NOT

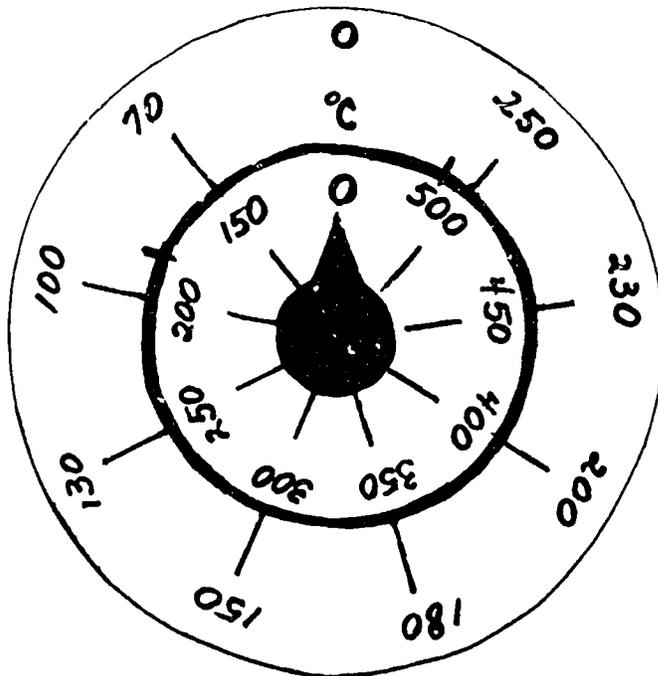
Circle the correct response to the left of each numbered statement.

- Yes No 1.. It is 35°C outside. Would you go swimming?
- Yes No 2. It is 20°C outside. Will you need your winter coat?
- Yes No 3. It is 15°C outside. Will the outdoor pool be in use?
- Yes No 4. The temperature is 27°C in the living room. Are you shivering?
- Yes No 5. You have a 40°C body temperature. Are you sick?
- Yes No 6. You have a 37°C body temperature. Do you have a fever?
- Yes No 7. The water was 15°C in your bath. Was it chilly?
- Yes No 8. The room thermostat was set at 20°C in March. Was it comfortable?
- Yes No 9. Your 50°C cup of chocolate is delicious. Will it burn your tongue?
- Yes No 10. In a 200°C oven you baked a cake. Did it burn?

- KEY: 1. Yes 6. No
2. No 7. Yes
3. No 8. Yes
4. No 9. No
5. Yes 10. Yes

FAHRENHEIT - - CELSIUS

$^{\circ}\text{F}$	$^{\circ}\text{C}$	$^{\circ}\text{C}$ (Actual measurement)
175	80	79.4
200	90	93.3
212	100	100 (Exact) Boiling temperature
225	110	107.2
250	130	121.1
275	140	135
300	150	148.9
320	160	160 (Exact)
350	180	176.7
375	190	190.6
400	200	204.4
425	220	218.3
450	230	232.2
500	260	260 (Exact)



Unit VIII

CONCEPT: Using Metric Measures in Foods Labs (Grades 9 - 12)

OBJECTIVES	SUPPORTIVE LEARNINGS	SAMPLING OF EXPERIENCES & EVALUATION
Following the basic introduction to SI metrics, the students will:	A knowledge of some basic measures, and application of these, assists in food preparation.	Review previous lessons as needed.
	As new utensils appear on the market, they will be metrically marked.	Examine metrically marked utensils.
apply metric principles to specific lab experiences	Weighing dry ingredients is faster, for there is no need to: sift flour pack brown sugar remove air spaces in shortening Disadvantage - cost of accurate metric scales. Liquids are measured by volume in both customary and metric systems.	Use metric kitchen scales and measuring tools to measure specific amounts of ingredients.

Liquid measures:

The 250 ml measure (metric cup) is graduated in 25 ml divisions.

View transparency:
"Metric cups and spoons".

For larger amounts of liquid, there is a 500 ml and a 1 000 ml measure, graduated in 50 ml.

Examine displayed measures of all sizes.

For household purposes, 1 litre of any liquid = 1 kilogram.

Additional measure sizes:

*80 ml = 1/3 c

*60 ml = 1/4 c

*30 ml = 1/8 c

Label present customary equipment with metric equivalents.

Small measures for liquid and dry:

*0.6 ml = 1/8 tsp.

1 ml = 1/4 tsp.

2.5 ml = 1/2 tsp.

5 ml = 1 tsp.

*7.5 ml = 1/2 tbsp.

15 ml = 1 tbsp.

25 ml = typical coffee measure

*FOLEY includes these measures in their measuring sets.

The size of baking utensils is expressed in centimetres, with capacity expressed in litres.

Refer to "Common Utensils".

OBJECTIVES

SUPPORTIVE LEARNINGS

SAMPLING OF EXPERIENCES & EVALUATION

increase skill in use of the Celsius scale

Thermometer terms tell what to do without using a thermometer. mer, boil, melt, lukewarm, chill, freeze.

Examine a "dual" oven dial.

Until you become familiar with the Celsius scale, you may want to keep a chart handy.

Most common oven temperatures:

Review and discuss: "Fahrenheit - Celsius" (See Unit VII)

	°F	°C
very slow	250-275	120-135
slow	300-325	150-165
moderate	350-375	175-190
hot	400-425	200-220
very hot	450-475	230-245

exhibit skill in the use of metric units by converting a recipe into correct metric equivalents

Writing recipes in metric form will require "rounding" up or down in amounts. This requires testing metric recipes.

Investigate metric recipes and cookbooks.

Any increase in recipe volume will be within the tolerance of most pans.

"Metricate" a recipe from customary measures.

Because there is no simple relationship between SI and the customary system, exact conversion of amounts is not practical.

"The Metric Cook".

"One cup of. . ." selected ingredients.

"Measure With Me".

OBJECTIVES

SUPPORTIVE LEARNINGS

SAMPLING OF EXPERIENCES & EVALUATION

develop skills in use of metric volume and mass measuring tools in food preparation

Some people will still use the volume measure, although by weighing the ingredients recipe accuracy and improved products can be assured.

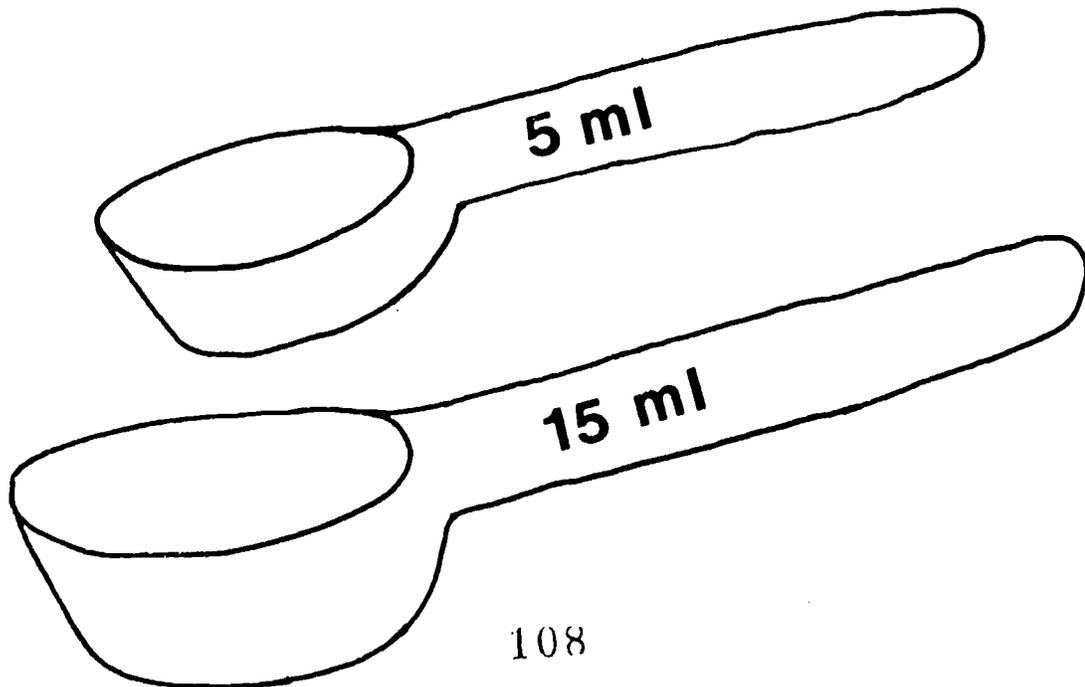
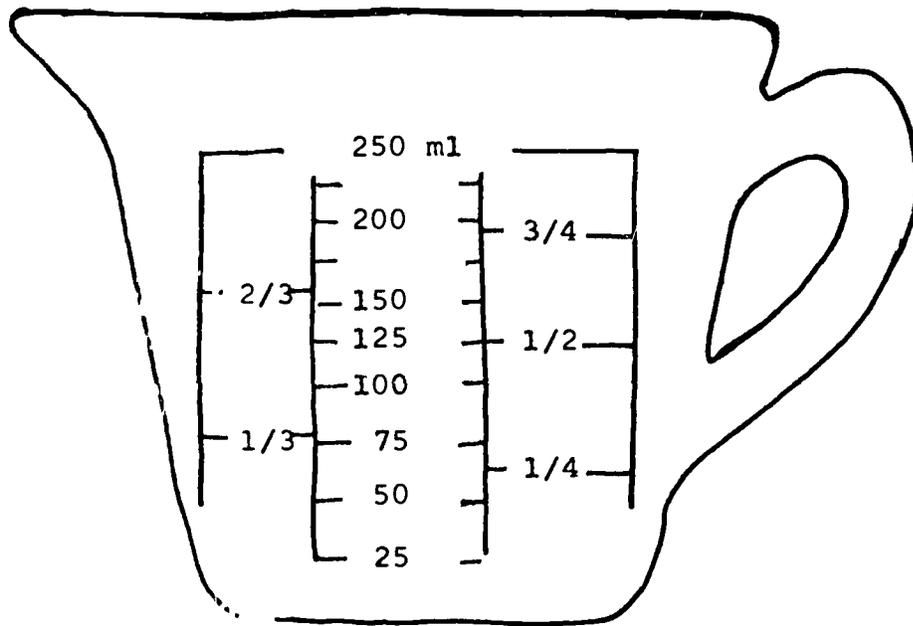
Demonstrate.

Half the class follow customary procedures, half measure metrically to prepare a recipe.

Evaluate:

time spent in preparation
no. of utensils used
product results

METRIC CUP AND SPOONS



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COMMON UTENSILS

UTENSIL	Common Sizes	Rounded Metric Units
Cake pan:		
Round	8 X 1½	20 X 4
	9 X 1½	23 X 4
Rectangle	13 X 9 X 2	33 X 23 X 5
	10 X 6 X 1½	25 X 15 X 4
Square	8 X 8 X 2	21 X 21 X 5
	9 X 9 X 2	23 X 23 X 5
Tube	10 X 4	25 X 10
Jelly Roll	15½ X 10½ X 1	40 X 25 X 3
Cookie Sheet	16 X 11	41 X 28
	14 X 10	36 X 25
	10 X 8	25 X 21
Loaf Pan	9½ X 5 X 3	24 X 13 X 8
	7½ X 3¾ X 2¼	19 X 10 X 6
Pie Pan	9	23
	8	21

MEASURING UTENSILS

1 qt.	1 000 ml
1 pt.	500 ml
1 c.	250 ml
1/2 c.	125 ml
1/3 c.	80 ml
1/4 c.	60 ml
1 T.	15 ml
1 t.	5 ml
1/2 t.	1 ml

THE METRIC COOK

1. Measure 1 cup of flour:

Sift flour onto waxed paper, spoon lightly into the measure, level it off, then measure its mass.

1 cup of flour has a mass of _____ g

Compare results with your partner: _____ g

Difference _____ g

Conclusion:

2. Determine the metric sizes of the baking utensils on the worktable.

UTENSIL	CUSTOMARY	METRIC
cakepan	_____	_____
pie pan	_____	_____
cookie sheet	_____	_____
bread pan	_____	_____
pizza pan	_____	_____
casserole	_____	_____

3. Convert this lemonade recipe into metric terms:

Customary	Metric
1 c. lemon juice	_____
7 c. water	_____
3/4 to 1 c. sugar	_____

Combine ingredients. Pour over ice in tall glasses.
Garnish with fresh mint.

ONE CUP OF . . .

selected ingredients

	grams
flour (sifted)	115
granulated sugar	200
brown sugar	165
butter or margarine	224
hydrogenated shortening	188
milk (liquid)	250
nuts (chopped)	124
peanut butter	227
confectioners sugar	115
molasses	250

SOME EQUIVALENT WEIGHTS AND MEASURES

1 oz. = 30 g = 30 ml = 0.03 l

1 lb. = 500 g = 0.5 kg

1 g = 0.035 oz.

1 kg = 32 oz. = 2.2 lb.

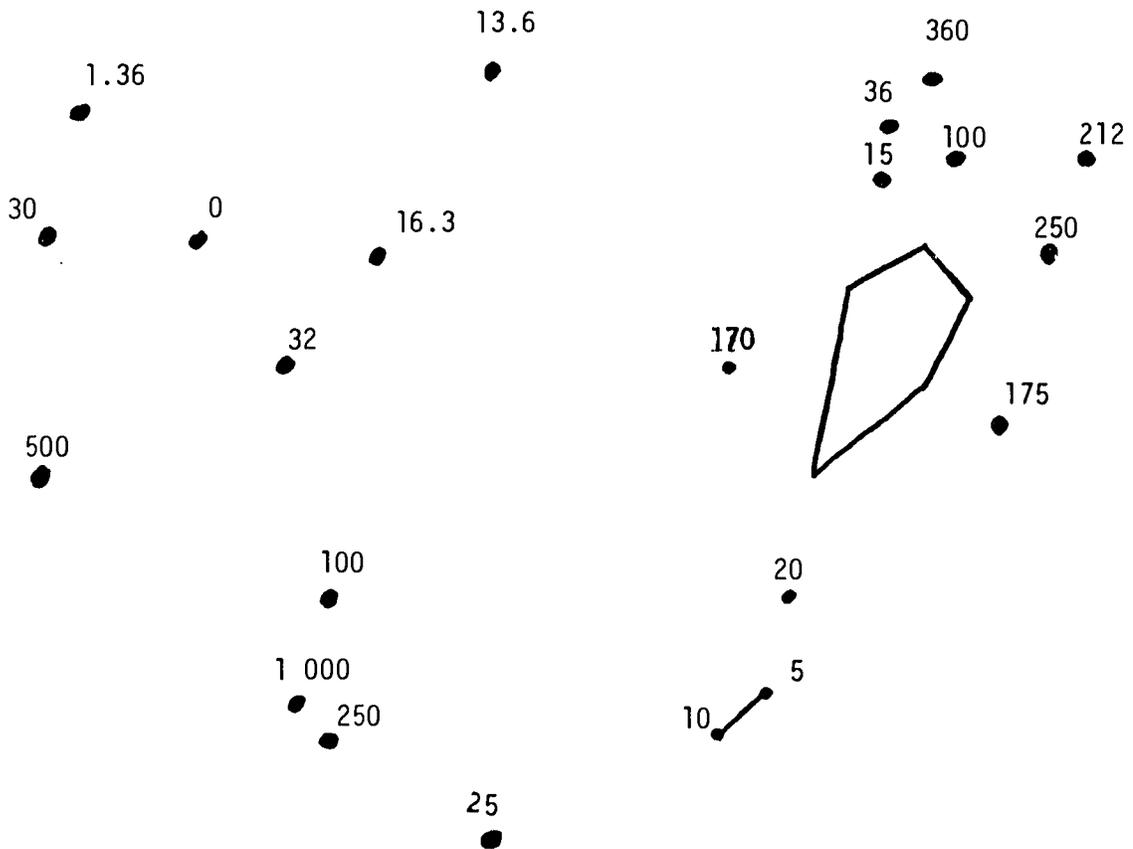
1 pt. = 0.5 l

1 qt. = 0.946 l

1 l = 33.8 fluid ounces = 2.1 pt. = 1.05 qt.

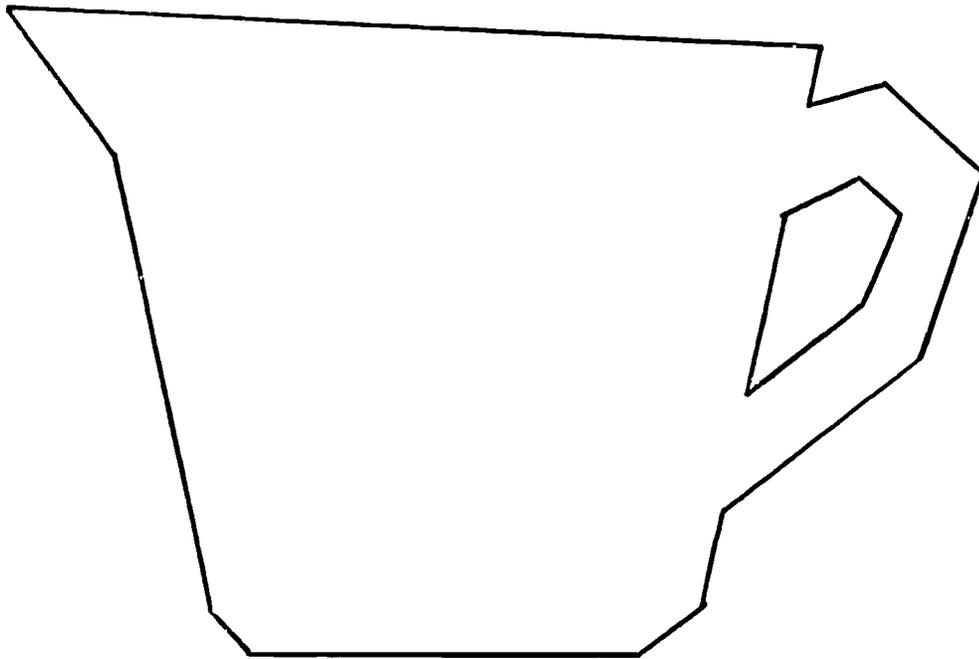
MEASURE WITH ME

1. One teaspoon = _____ ml
2. An 8 inch pie pan measures _____ cm Now, in the puzzle below, locate your answer to question #1. Draw a line from answer #1 to answer #2.
3. A 350°Fahrenheit oven is _____°C Draw a line to the answer for this question. Understand how it works now? Continue and solve the puzzle.
4. The standard metric measuring utensil has a capacity of _____ ml
5. Water boils at _____°C
6. One tablespoon is equal to _____ ml
7. A 14 inch cookie sheet is _____ cm long.
8. A 46 oz. can of fruit punch contains _____ l
9. Water freezes at _____°C
10. One litre is the same as _____ ml
11. One cup of peanut butter weighs approximately _____ g
12. If one kg of potatoes costs 20¢, how much would you pay for 500 g of potatoes? _____¢



KEY: MEASURE WITH ME

1. 5
2. 20
3. 175
4. 250
5. 100
6. 15
7. 36
8. 1.36
9. 0
10. 1000
11. 250
12. 10



Unit IX

CONCEPT: Using Metrics in Clothing Labs

OBJECTIVES	SUPPORTIVE LEARNINGS	SAMPLING OF EXPERIENCES & EVALUATION
By completing the selected activities, students will: discover the relationship of the metric system to clothing apply previous learnings to determine own size in metric measure	Metric sizes are quite different from customary measurements numerically. Use centimetres for body measurements. (Review previous lessons as needed). Pattern companies are already using metric terminology.	Use fashion catalogs to study pattern sizing. Take body measurements. Determine own clothing size. "Metric Me". "Metrics in Patterns". Check for accuracy.
interpret meanings of numerals and symbols related to pattern usage in metrics	Fabric is measured in metres. Zippers, trims and elastic are measured in centimetres. (Learnings dealing with metrics related to patterns are listed in question form on attached worksheets).	Study commercial patterns. Using an enlarged pattern envelope determine: fabric needed thread zipper length "Clothing Activity Sheet".
apply learnings to construction of a garment or other project	(Use customary learnings - converted to metric language) As you develop sewing construction skills, you are also developing metric usage skills.	Re-label seam guides with 1.5 cm Construct garment. Evaluate garment.

OBJECTIVES

SUPPORTIVE LEARNINGS

SAMPLING OF EXPERIENCES & EVALUATION

Project sheets:

Duffel Bag

P J Metribag

Bean Bag

Apron and Head Band

Blue Metric Jeans Tatable

METRIC ME - PERSONAL MEASUREMENT SHEET

SUPPLIES: Personal Measurement Sheets
 Tape measures
 Height chart (on wall)
 Bathroom scale

PROCEDURE:

Using the personal measurement chart below, fill in the blanks for your height, weight (mass), and body dimensions.

My weight or mass is _____ kg My height is _____ cm

MISSES PATTERN SIZES*	8	10	12	14	16	18	ME
STANDARD Bust	80	83	87	92	97	102 cm	____ cm
BODY Waist	61	64	67	71	76	81 cm	____ cm
MEASURE- Hip - 23 cm	85	88	92	97	102	107 cm	____ cm
MENTS below waist							
Back waist length	40	40.5	41.5	42	42.5	43 cm	____ cm

*Metric measurements are based on the Standardized Pattern Measurements approved by the MEASUREMENT STANDARD COMMITTEE of the Pattern Industry.

Compare your metric measurements with the chart above, then determine what your metric pattern size would be.

Size _____

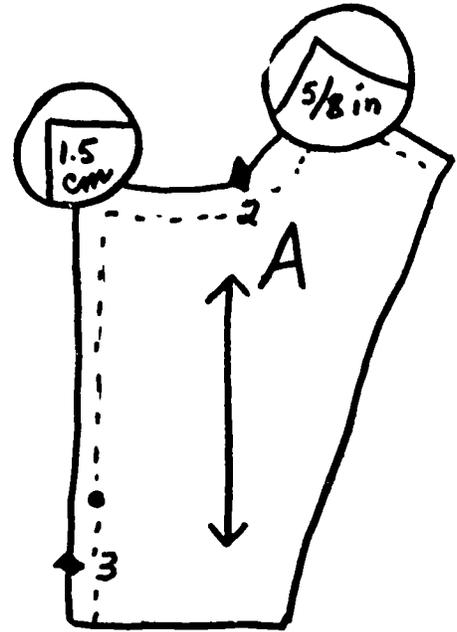
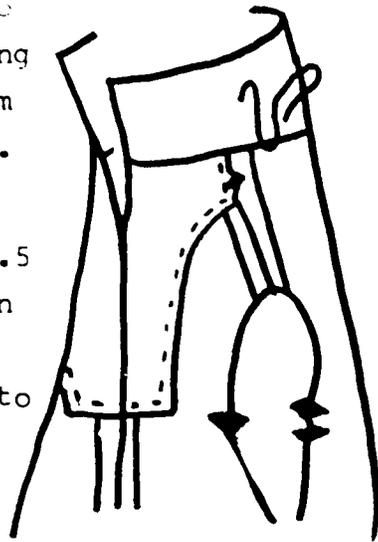
Name _____

METRICS IN PATTERNS

Turn facing to INSIDE, turning back neck seam toward collar. Press.

Press under 1.5 centimetres on raw edge of collar; trim to 6 mm (1/4"). Slip-stitch pressed edge

of collar over neck seam, matching centers back. Tack facing to seams.



Be aware of metric measurements when you sew.

Answer the following questions by looking at the above illustrations and the attached METRIC ME - PERSONAL MEASUREMENT CHART.

1. The standard seam allowance used in sewing is _____ cm
2. The three most common linear units used when sewing are the _____, the _____, and the _____.
3. The symbols for the above are _____, _____, and _____.
4. The body measurements for a size 12 pattern are:
 bust _____
 waist _____
 hips _____
 back neck to waist _____

CLOTHING ACTIVITY SHEET

At the table you will find a pattern envelope and several pattern pieces. Using these materials, determine the following:

1. What is the metric seam allowance?
2. What other metric measurements do you find on the pattern pieces?
3. If you have these measurements 84 - 63 - 88, what size pattern would you select?
4. What are the standard widths of fabrics in metrics?
5. For the size determined in #3, list all items you would need to purchase, and the amounts needed for each. The fabric you want to purchase is 115 cm wide.
6. When you go shopping to purchase your pattern and fabric, find out if the fabric department is planning to change to metric measures, or whether it is already changed. What is the attitude of the clerks toward this change?

SEWING WITH METRICS

Supplies needed for DUFFEL BAG:

Heavy cotton fabric 80 cm by 92 cm

Matching thread

Rope, heavy cord or heavy shoestring 2 metres

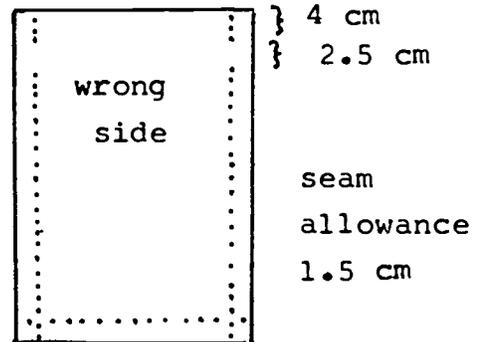


Preparing the fabric:

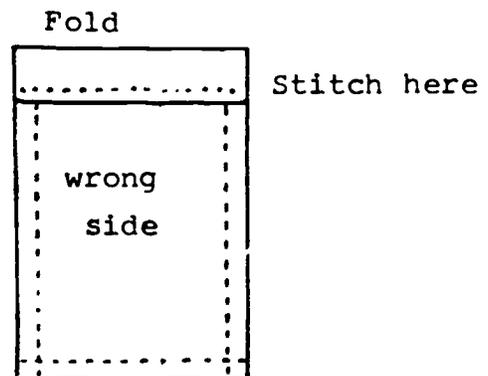
1. Preshrink the fabric.
2. Straighten the ends.
3. Tear fabric into two pieces, each measuring 40 cm by 92 cm

Ready to sew:

1. Pin right sides together.
2. Sew around 3 sides twice using a number 12 stitch and leaving openings for cord (see illustration).
3. Secure threads at cord openings and at end of seams.
4. Press seams open.



5. Turn top under 1 cm and press.
6. Pin top down 3 cm to form rope casing. (See illustration). Press.
7. Sew close to bottom of hem, using number 12 stitch.
8. Cut cord into two equal lengths.
9. Using a safety pin as a guide, insert cord through holes and tie the two ends together in a secure knot.



A PJ METRI*BAG

A PJ Metri*Bag that doubles as an attractive pillow for bed or window seat.

Materials Needed:

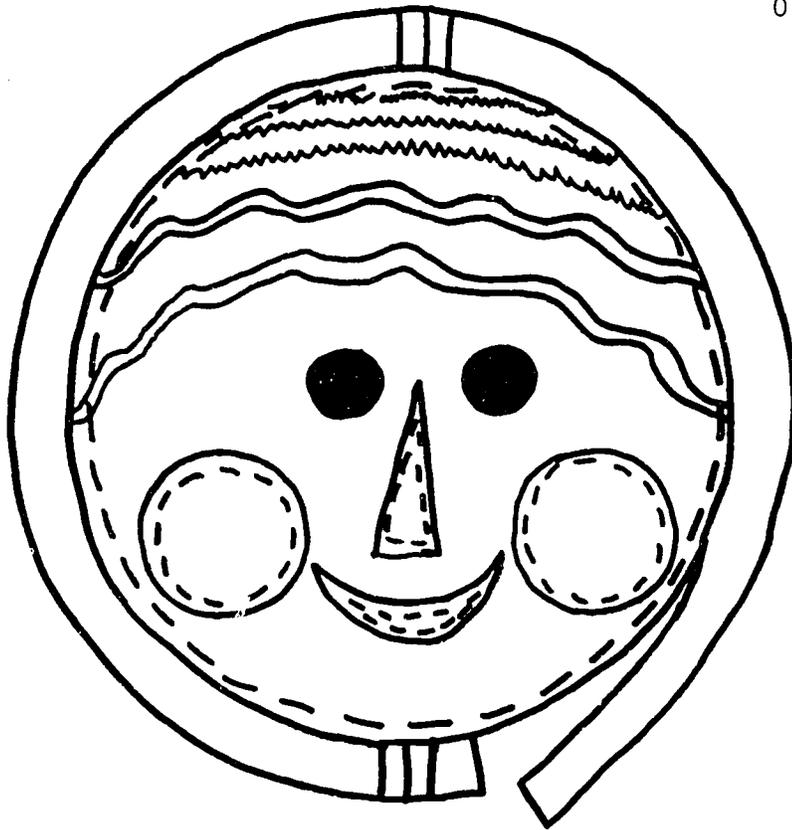
Felt in the following sizes:

50 cm yellow circle (face front)
55 cm orange circle (face back)
plus felt for nose and mouth
Two half-dollar size (3 cm) circles
(eyes)
Two 10 cm magenta circles
Spool of Talon Polyplus Thread
40 cm Talon Invisible Zipper
Pkg. Talon Orange Jumbo rick rack
Pkg. Talon Orange baby rick rack
Fabric glue

To Make:

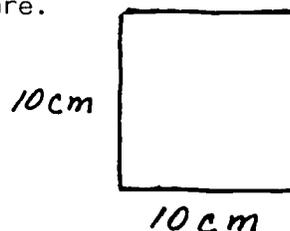
1. Cut 55 cm circle in half and apply zipper according to pkg. directions.
2. Topstitch cheeks, nose and mouth in place on yellow circle; then glue eyes in place. Also, stitch rick rack as shown above.
3. With wrong sides of yellow and orange circles together, topstitch 5 mm from edges of yellow circle. Trim orange circle even with yellow circle.

*Equivalents are only approximate. REMEMBER: 0.10 m = 10 cm
0.20 m = 20 cm, etc.

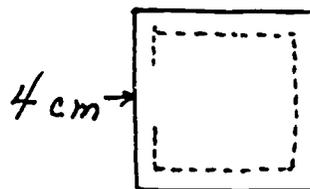


What's Your Bag?

1. Measure 2 squares of fabric 10 cm square.



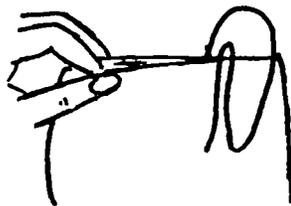
2. With wrong sides together, stitch as indicated using a 1.5 centimetre seam. Opening is 4 cm.



3. Weigh 240 grams of dry beans. Fill your bag with these beans.



4. Turn raw edges to the inside and stitch the top closed by hand.



APRON and HEADBAND

Using a metre stick, measure your fabric in centimetres.

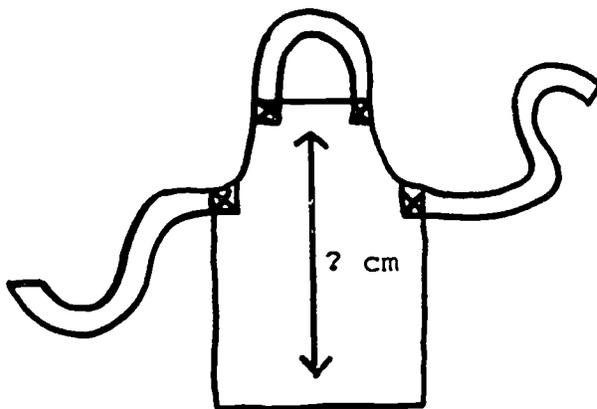
Width of my fabric = _____ cm

Length of my fabric = _____ cm

Fitting your pattern:

APRON

Measure from the top to the bottom as illustrated:

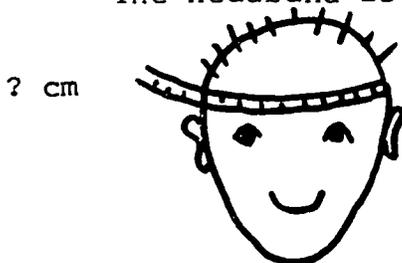


_____ cm
add for hems: + 6 cm

TOTAL LENGTH _____ cm

HEADBAND

The headband is 18 cm wide. For length, measure the circumference of your head:



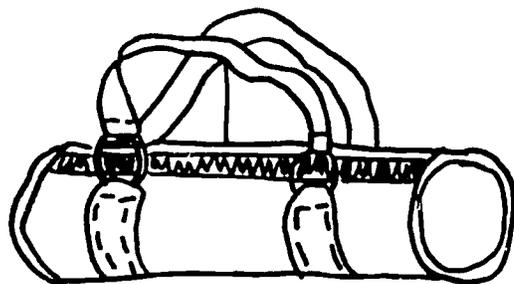
_____ cm
add for seams: + 3 cm

TOTAL LENGTH _____ cm

Constructing the pattern:

APRON: Add or subtract needed centimetres at the bottom of the apron pattern to fit your length.

HEADBAND: Using a metre stick and your measurements, construct your headband pattern from newspaper.



"BLUE METRIC" Jeans Tatable

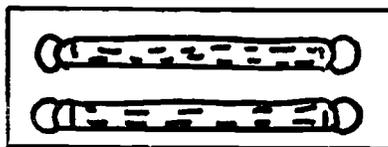
Materials Needed:

- Pair of old jeans
- Four large rings (Cafe curtain rings)
- 0.90 m iron-on interfacing
- Spool of Talon thread
- 35 cm Talon Big Zipper
- 3.4 m of Talon trim (5-8 cm wide)
- Pkg. of Talon piping

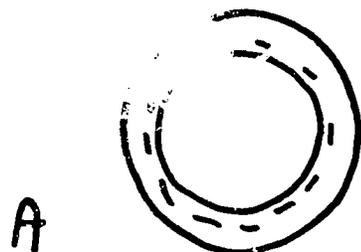
To Make:

Use 1.5 cm seams throughout.

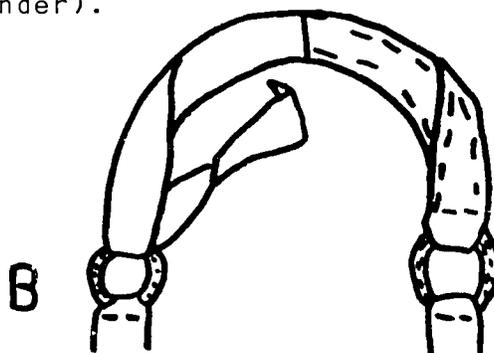
1. Cut off jean's legs and open one seam on each leg. Make a rectangle 41 x 59 cm, combining 41 cm long pieces from legs. With remaining fabric, cut 2 circles 20.5 cm in diameter. Back all pieces with iron-on interfacing.
2. Position 64 cm lengths of trim as shown. Fold each end under 8 cm, insert ring, and machine stitch in place.



3. Turn seam allowances of short rectangle edges under 1.5 cm and press. Position folded edges close to zipper teeth and stitch (bag becomes a cylinder). Partially open zipper.
4. On the right side of circles, position seamline of cording 1.5 cm from out edges of circles, overlapping ends as shown (remove piping filler for 1.5 cm). Machine baste (A).
5. Turn bag to wrong side. With right sides together, baste circles to each end of cylinder; stitch. Turn bag to right side.
6. Allow 1.1 m of trim for each handle. Insert single length through front and back rings. Double trim and machine stitch in place (turn raw ends under). Repeat other handle (B).



125



101

CONCEPT: Metric Chef's Hat

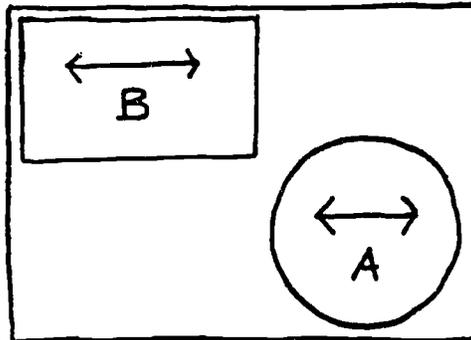
OBJECTIVES	SUPPORTIVE LEARNINGS	SAMPLING OF EXPERIENCES & EVALUATION
Students will apply learnings from prior study of METRE to determine body size in metric measure	Commercial patterns have metric measures. Making accurate record of body measurements, aids in purchase of patterns and clothing. Metric sizes are much different from customary sizes numerically.	Use of transparency (Pink Panther) to show body measurements to be taken. Students record own measurements on individual sheets (same as transparency, Pink Panther - 1 metre tall for bulletin board.
Using a self made metric measure, each student will make own pattern pieces for a chef's hat	Making and using metric tools helps develop skills in THINKING METRIC Making an accurate pattern reduces the chance for sizing error in the completed project.	Discuss pattern sizes, Cut out and mark paper pattern, following directions. Check and alter as needed. Try on a "sample" hat.
After observing a demonstration of the layout and cutting procedures, students will duplicate the steps	Using learned metric skills and self made metric tools, reinforce the concept of metrics.	Layout. Instructor check. Cut out.
Following printed directions, students will construct a chef's hat to be judged on pre-determined criteria	(See attached layout and direction sheets).	Construct hat following printed directions. Evaluate: Ability to follow directions Construction Accurate fit

METRIC CHEF'S HAT
FABRIC LAYOUT

(Requires 1 metre of woven fabric)

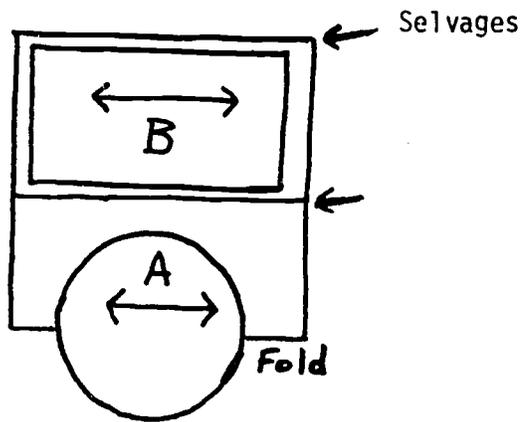
FABRIC WIDTH

90 cm
(36")



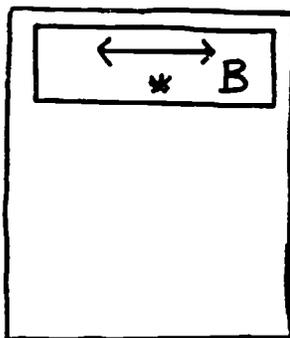
SINGLE
THICKNESS

115 cm
(45")



INTERFACING

90 cm, 115 cm
(36", 45")



SINGLE
THICKNESS

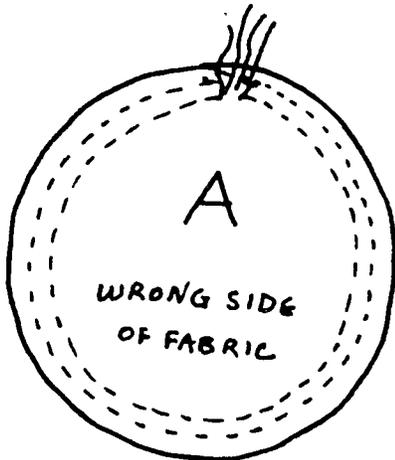
*B folded in half
lengthwise

Note: Crown (A) is one piece - a 50 cm circle.
Band (B) is one piece - 40 cm wide.
For band length, measure around head, add 3 cm.

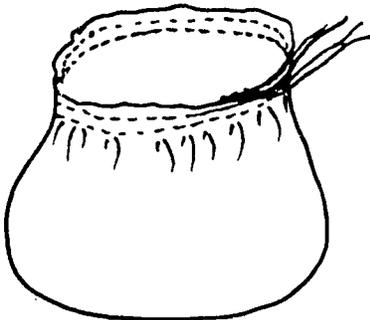
METRIC CHEF'S HAT

Interfacing

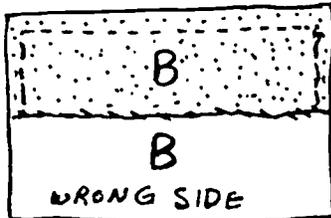
STEP



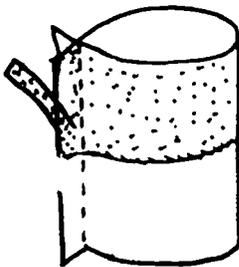
1. Using a basting stitch on the sewing machine, stitch along lines as shown (1.5 cm and 1 cm from edge).



2. Pull ends of bottom threads gently to gather.



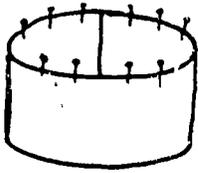
3. Baste interfacing B to wrong side of band B. Tack invisibly along foldline.



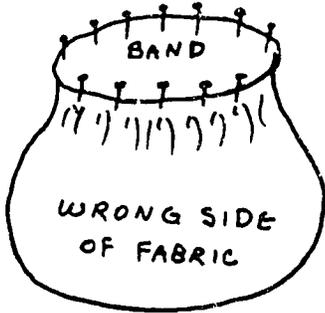
4. Fold ends of B together, right sides together and stitch ends using a 1.5 cm seam.

Trim interfacing close to stitching.

Press seam open.



5. Fold band in half, wrong sides together. Baste raw edges together (may be pin basted).

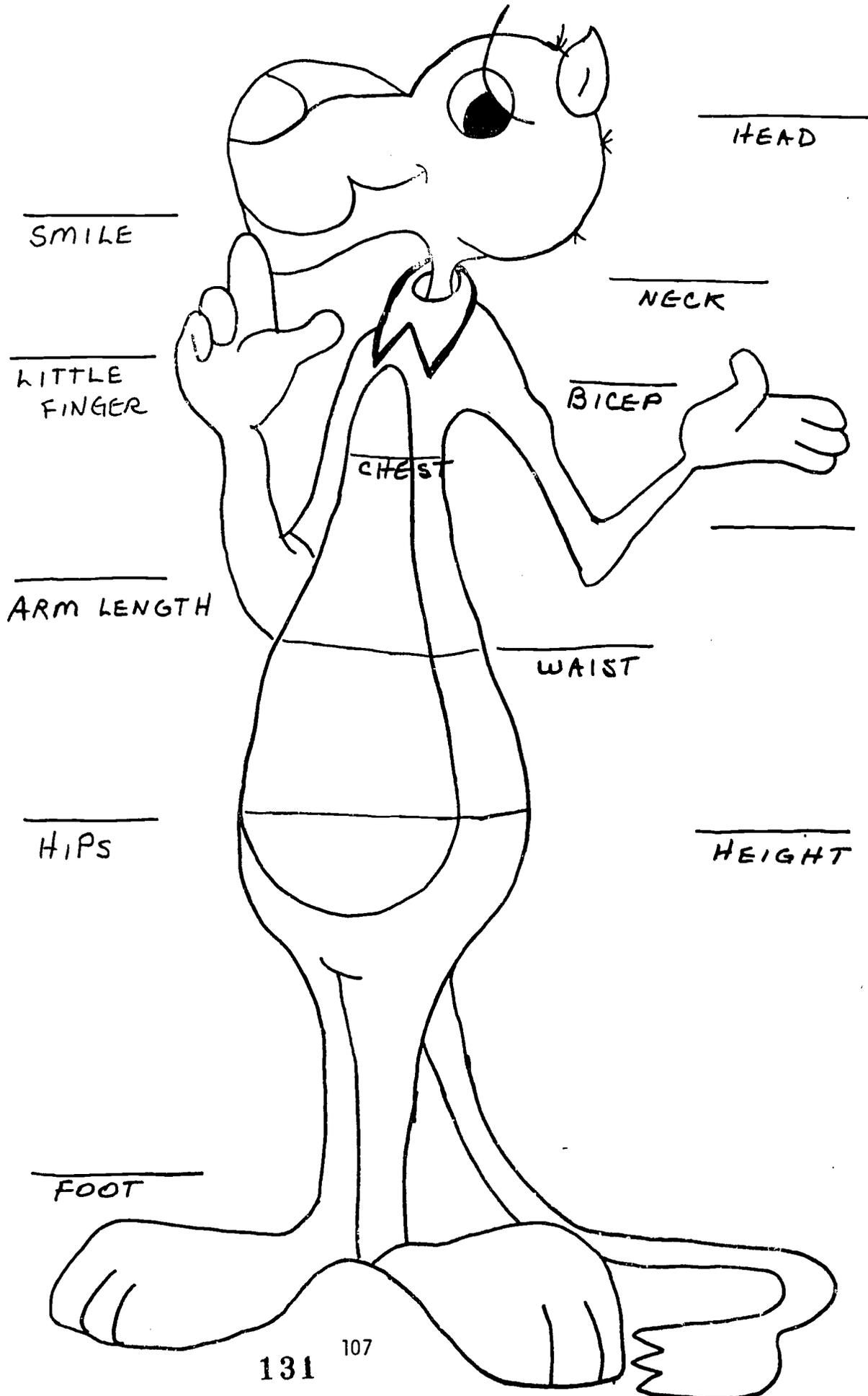


6. Pin band to crown, right sides together, adjusting gathers evenly. Stitch 1.5 cm seam.



7. Zigzag stitch the unfinished edge. Press.

HOW DO YOU MEASURE UP?



Unit X

COURSE TITLE: Interior Decoration

TIME: 2 - 3 weeks

UNIT TITLE: Windows and Window Treatment

LEVEL: Secondary - Grades 11 and 12

CONCEPT: Awareness of the SI Metric System, with emphasis on METRES and the proper use of terms, prefixes and symbols.

GENERALIZATIONS: Introduction of METRICS on a small scale can secure the foundation when final changeover is made.

OBJECTIVES

SUPPORTIVE LEARNINGS

SAMPLING OF EXPERIENCES & EVALUATION

The student will exhibit knowledge of the progress made in metric acceptance and use by the presentation of a short history of chronologically important dates and happenings, listing at least six important dates.

The metric system would increase world trade for the United States.

Progress has been made in the increased acceptance of METRICS as indicated by the following important dates and happenings:

- 1790 - Jefferson presented a plan.
- 1795 - French - metric system.
- 1866 - Metric system was made legal in the United States.
- 1875 - Treaty of the Metre.
- 1960 - Modernized International System of Units (SI) adopted.
- 1965 - England started conversion; to be completed in 1975.
- 1968 - U.S. Congress passed Metric Study Act.
- 1971 - Report of U.S. Study given to Congress.
- 1975 - England completes conversion.
- 1975 - President Ford signed Metric Conversion Act.

View the transparency map with discussion on metric and nonmetric countries. (Map in Unit I).

Students place dates and events in their notebooks for future reference.

OBJECTIVES

SUPPORTIVE LEARNINGS

SAMPLING OF EXPERIENCES & EVALUATION

The student will develop fluency with metric vocabulary, with emphasis on the METRE, and shall become knowledgeable in the use and understanding of the metre prefixes and symbols.

LENGTH in SI Metric is expressed in METRES, with the following prefixes and symbols being of importance:

- 1 kilometre (km) = 1000 metres
- 1 hectometre (hm) = 100 metres
- 1 dekametre (dam) = 10 metres
- 1 metre (m) = 1 metre
- 1 decimetre (dm) = 0.1 metre
- 1 centimetre (cm) = 0.01 metre
- 1 millimetre (mm) = 0.001 metre

Students add basic metric terms, prefixes, symbols, and equivalents in their notebooks for permanent reference.

The student will identify, orally or in writing, all prefixes and symbols.

Use "Prefixes and Symbols" (In Unit II).

Given the necessary supplies and directions, the student will construct a collapsible "metre stick", using five sections of 20 cm each.

The collapsible metre stick will be used to do all measurements in the unit and no reference will be made to the CUSTOMARY system. (Directions in Unit III).

Construction of metre stick.

The student will choose three areas in the classroom to measure; ie., the top of the student desk, the doorway into the classroom, and the top of the teacher's desk.

CONCEPT: METRIC usage in choosing window types and window treatments.

GENERALIZATIONS: The proper treatment of the windows in a home is an essential part of Interior Decoration.

OBJECTIVES

SUPPORTIVE LEARNINGS

SAMPLING OF EXPERIENCES & EVALUATION

The student will identify the 18 basic types of windows.

Windows are divided into 18 basic types:

1. Double-hung
2. In-swinging Casement
3. Out-swinging Casement
4. Ranch or Strip
5. Awning
6. Jalousie
7. Picture
8. Dormer
9. Bay
10. Bow
11. Slanting
12. Double
13. Corner
14. French Doors
15. Sliding Glass Doors
16. Clerestory
17. Arched
18. Glass Wall

Students view 18 transparencies of window types, then list outstanding features of each. Students will transfer information to study guides (duplicate pictures with blank areas for placement of a caption above the picture and a listing of the outstanding features beneath the picture).

Discuss pros and cons of each window type.

Use "Guide to Window Beauty", Kirsch Co., for drawings of windows and window treatments. Also "The how-to of well dressed windows" by Kirsch.

The student will identify in writing the basic parts of all windows.

Windows have 7 basic parts:

1. Casing - fixed part of window
2. Frame - sash
3. Pane - the glass
4. Muntins - narrow horizontal strips separating small glass panes.
5. Mullions - narrow vertical strips separating small glass panes.
6. Sill - narrow edge at bottom of window.
7. Apron - part of casing below the window sill.

After viewing a transparency of the 7 basic parts of a window, students will label a duplicate picture of a window. The picture will be drawn to metric scale. Students will place the designated measurements on the drawing.

The student will identify the 15 basic window treatments.

Window treatments are divided into 15 basic treatments.

1. Shirred Glass Curtains
2. Traverse Curtains
3. Shirred Draperies
4. Traverse Draperies (two-way draw)
5. Traverse Draperies (one-way draw)
6. Cafe-type Draw Draperies
7. Cafe Curtains
8. Sash Curtains
9. Criss-cross Curtains
10. Ruffled Tie-back Curtains
11. Swinging Rod Treatment
12. Dimensional Curved Treatment
13. Arched Treatment
14. Slanting Traverse Draperies
15. Swinging Door Draw Draperies

View 15 transparencies of window treatments. Students transfer this information to study guides (duplicate pictures with blank areas for placement of a caption above the picture and a listing of the outstanding features beneath the picture). Discuss pros and cons of each window treatment.

Students choose a minimum of 10 pictures of different window treatments which will become a part of their notebook for future reference.

OBJECTIVES

SUPPORTIVE LEARNINGS

SAMPLING OF EXPERIENCES & EVALUATION

After a step by step procedure for proper measuring is presented and understood, each student will properly measure a chosen window in their home and compute the square metres of cloth needed to construct one pair of unlined draw draperies.

Draperies constructed at home, after knowledge of proper measuring and construction is gained, will result in a monetary saving and a satisfaction gained from having completed something that adds beauty to the home for a fraction of what it would cost for "ready-made" or "custom-made" draw draperies.

Students submit a scaled drawing of the window chosen in their home for draping, with the proper computation of the square metres of material needed for one pair of unlined draw draperies.

The student will submit a "word-search" puzzle, using a minimum of fifteen terms, either metric or other terms used in conjunction with window types and window treatments.

Use the transparencies on window type and window treatment to test the students. (Blocking out the captions and other information). Provide students with response sheets. Include opportunity to use metre stick.

APPENDIX

METRIC TEST

NAME PERIOD SCORE . . .

I. PREFIXES and SYMBOLS. Complete the chart below by giving the correct metric prefix, numerical value and symbol. (18 pts.)

UNIT	PREFIX	VALUE	SYMBOL
1000 X			
100 X			
10 X			
1/10 of			
1/100 of			
1/1000 of			

II. MULTIPLE CHOICE: Select the BEST answer and place the letter in the space provided. (10 points).

- ___ 1. Which of the following is not a method of measuring?
a) Customary b) American c) Metric d) Imperial
- ___ 2. To measure the length of a pencil in metrics, we need a
a) metre stick b) centimetre ruler c) millimetre measure d) cubic decilitre.
- ___ 3. A 350° F oven would be ___ in degrees Celsius.
a) 100 b) 150 c) 177 d) 200
- ___ 4. The diameter of an average dinner plate is
a) 15 cm b) 10 cm c) 3 m d) 25 cm.
- ___ 5. The length of a car is approximately
a) 1 m b) 6 m c) 3 m d) 5 m.
- ___ 6. To measure volume, we use
a) ml b) mm c) °C d) mg.
- ___ 7. Which container would best hold a decilitre of water?
a) bathtub b) swimming pool c) pill box d) small pitcher.
- ___ 8. In the Metric System, °C means degrees
a) Centigrade b) Kelvin c) Celsius d) Fahrenheit.
- ___ 9. Prefixes in the metric system refer to terms like
a) millimole and kilomole b) millimetre and kilometre
c) milliampere and kiloampere d) millicelsius and kilokelvin.

METRIC TEST (continued)

10. Which phrase makes the most sense?
 a) 5 grams of water b) 5 metres of water c) 5 kilometres of water
 d) 5 litres of water

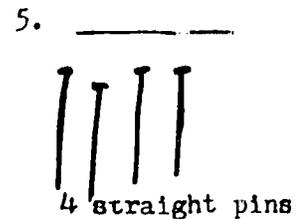
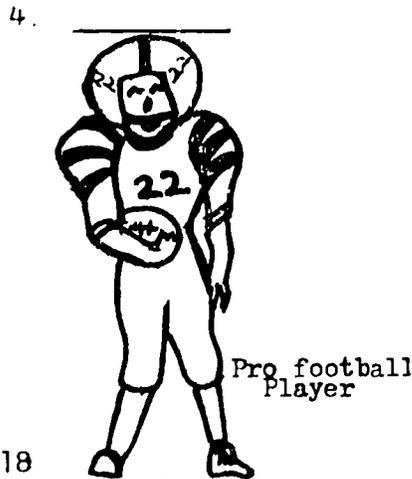
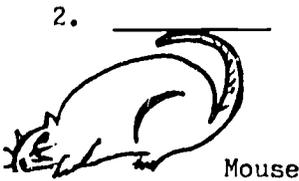
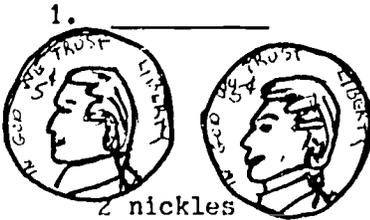
III. TRUE or FALSE - Circle the best answer. (8 points)

- T F 1. The height of an average man is 3 metres.
 T F 2. Your shoe is about 8 centimetres long.
 T F 3. A baseball player with a good arm could throw a ball 300 metres.
 T F 4. A man can lift something that weighs 25 kilograms.
 T F 5. On an interstate highway, 90 kilometres per hour would be a safe speed.
 T F 6. The maximum depth of a public swimming pool would be 25 centimetres.
 T F 7. A coffee cup would hold about 1/4 litre of coffee.
 T F 8. An automobile gas tank would hold about a hectolitre of gasoline.

IV. Choose the most nearly correct weight and place the letter of that choice in the blank beside the picture.

WEIGHTS

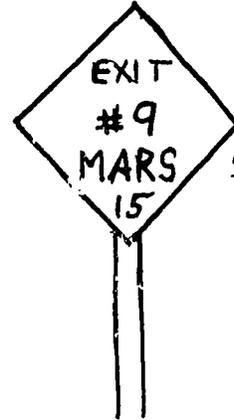
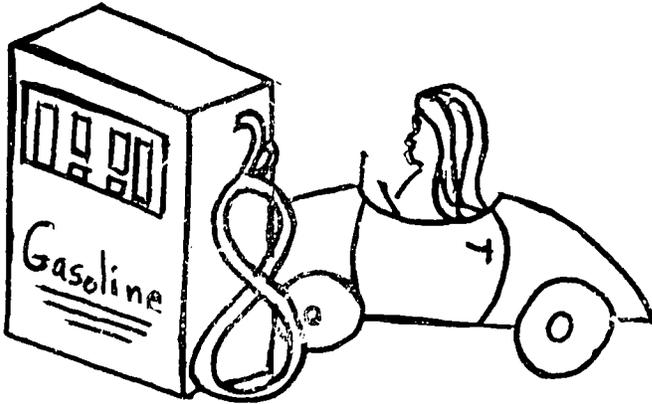
- A. 3 kilograms
 B. 1 gram
 C. 10 grams
 D. 100 kilograms
 E. 100 milligrams
 F. 70 grams
 G. 200 grams



METRIC TEST (continued)

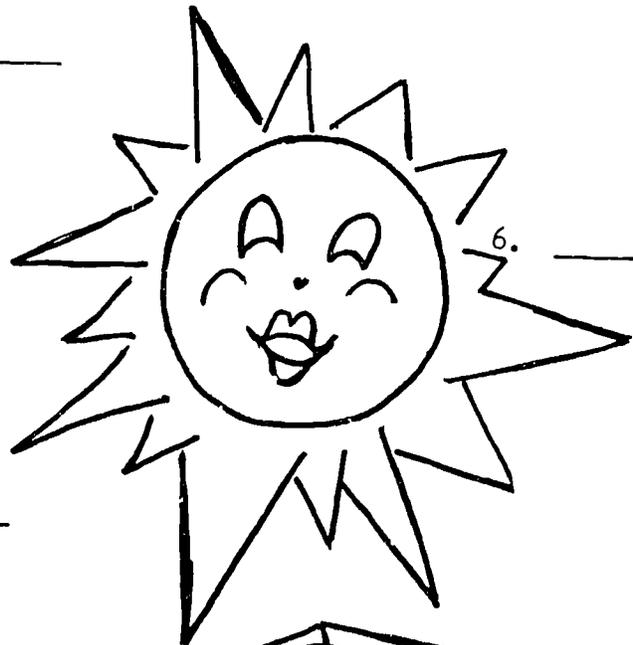
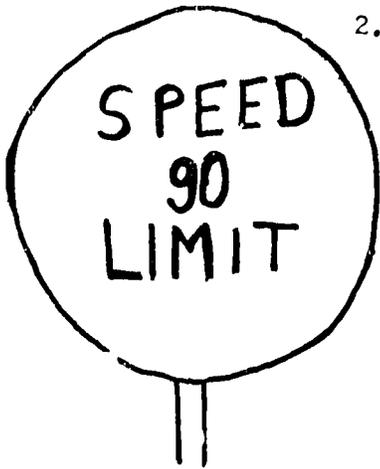
V. IDENTIFY THE METRIC UNIT: Write in the blank the metric unit best suited to measure each item.

1. _____



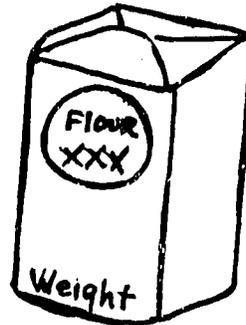
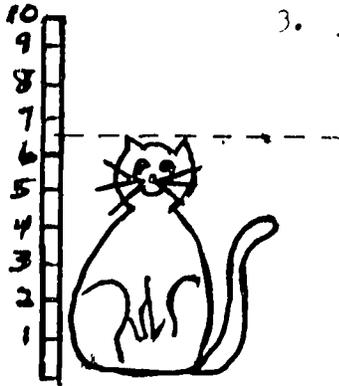
5. _____

2. _____



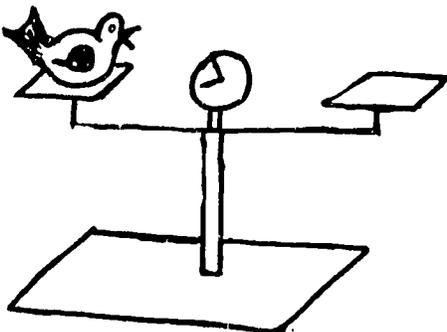
6. _____

3. _____



7. _____

4. _____



145

119



8. _____

METRIC TEST (continued)

VI. Use the formula $^{\circ}\text{F} - 32 \times \frac{5}{9} = ^{\circ}\text{C}$ to compute the following temperatures. Round off your answers to the next highest degree. SHOW YOUR MATH WORK IN ORDER TO GET CREDIT.

1. 98.6°F



A. 100°C

B. 10°C

C. 30°C

D. 6°C

E. 37°C

F. 15°C

G. 0°C

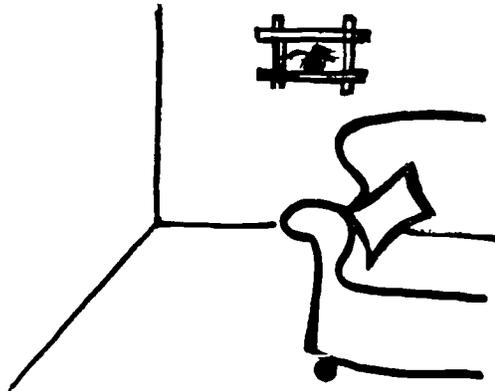
H. 22°C

I. 40°C

2. 42°F

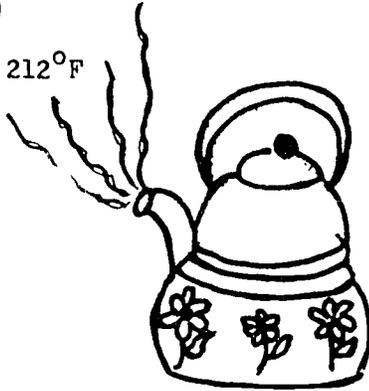


3. 72°F



METRIC TEST (continued)

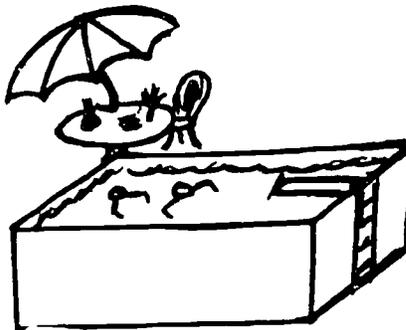
_____ 4. 212°F



_____ 5. 32°F



_____ 6. 86°F



METRIC TEST ANSWER SHEET

I.	kilo	1000	k
	hecto	100	h
	deka	10	da
	deci	0.1	d
	centi	0.01	c
	milli	0.001	m

- II. 1. B
 2. B
 3. C
 4. D
 5. C
 6. A
 7. D
 8. B
 9. A
 10. D

- III. 1. F
 2. F
 3. F
 4. T
 5. T
 6. F
 7. T
 8. T

- IV. 1. C
 2. F
 3. A
 4. D
 5. E

- V. 1. litre
 2. kilometre
 3. centimetre/metre
 4. grams
 5. kilometre
 6. Celsius
 7. kilograms
 8. litre

- VI. 1. E
 2. D
 3. H
 4. A
 5. G
 6. C

METRICS FOR PRESCHOOLERS

This unit is planned for preschoolers attending Nursery School and would take approximately five days to complete, depending on the progress and reaction of the children. However, the whole unit is not necessarily planned to be used consecutively. Instead the learnings should be taught where they best apply; for example, the information on degrees Celsius might best fit in with the weekly concept on fall during which we discuss how temperatures change with the seasons. Since repetition and reinforcement are vital experiences when teaching preschoolers, the metric concepts will be reviewed and used throughout the year in conjunction with appropriate activities.

Preschoolers have a very limited background in measuring by the customary system and probably no experience with the metric system. Most young children are aware of size as far as large versus small, tall versus short and heavy versus light is concerned. Since metrication will be a definite part of their lives, it is important to expose them to the metric system of measuring as early as possible to aid them in developing a positive attitude toward it.

Although preschoolers have a limited ability to grasp the techniques and details involved with measuring, they can be made aware of the basic terms and tools used with this new system. In addition to introducing them to the metric system and the fact that it is replacing our present system, this unit will give the children direct contact with basic concepts, terms, and tools used with metric measuring.

Through the teaching of this unit the preschoolers will not be the only ones to gain exposure to the metric system. High school students

working at the Center will need to be oriented to this new way of measuring, so that they can assist with the planned activities for the unit. Also by way of handouts and seminars, the children's parents and other family members can be enlightened to metric thinking and encouraged to reinforce the unit's learnings at home with their preschoolers.

Teaching Aids

Bulletin board - "Our Metric Helpers"
(It will display the characters "Mighty Meter",
"Great Gram" and "Silly Celsius").

Flannel board and felt letters

Metric Tree

Measuring tools: yardstick
metre stick
metric scales
degrees Celsius outdoor thermometer
degrees Celsius teaching thermometer

Evaluation: The children will be observed as they respond to the questions and discussions and as they participate in the various activities throughout the unit.

Directions for "Metre Cake": Prepare a regular boxed cake mix and bake according to the directions, in a 33 cm x 23 cm x 5 cm pan. When cool remove from pan and cut in thirds length-wise. Arrange pieces end to end to measure 99 cm long. Frost the cake, being sure to add enough frosting at the ends to make the cake one metre long. Then decorate along the one top edge with short pieces of licorice to resemble the lines on a metre cake. Children can use a metre stick to check the length of the cake.

Metric System Verse: The metric system is something new.
If I can learn it so can you. (children point to self and then to others)
Metres measure how tall we are (stand up tall and put hands on head to indicate height)
Or the length of a railroad car. (stretch arms out wide to indicate length)
Grams tell us how much we weigh
As we grow from day to day. (stretch arms out and up to indicate growth)

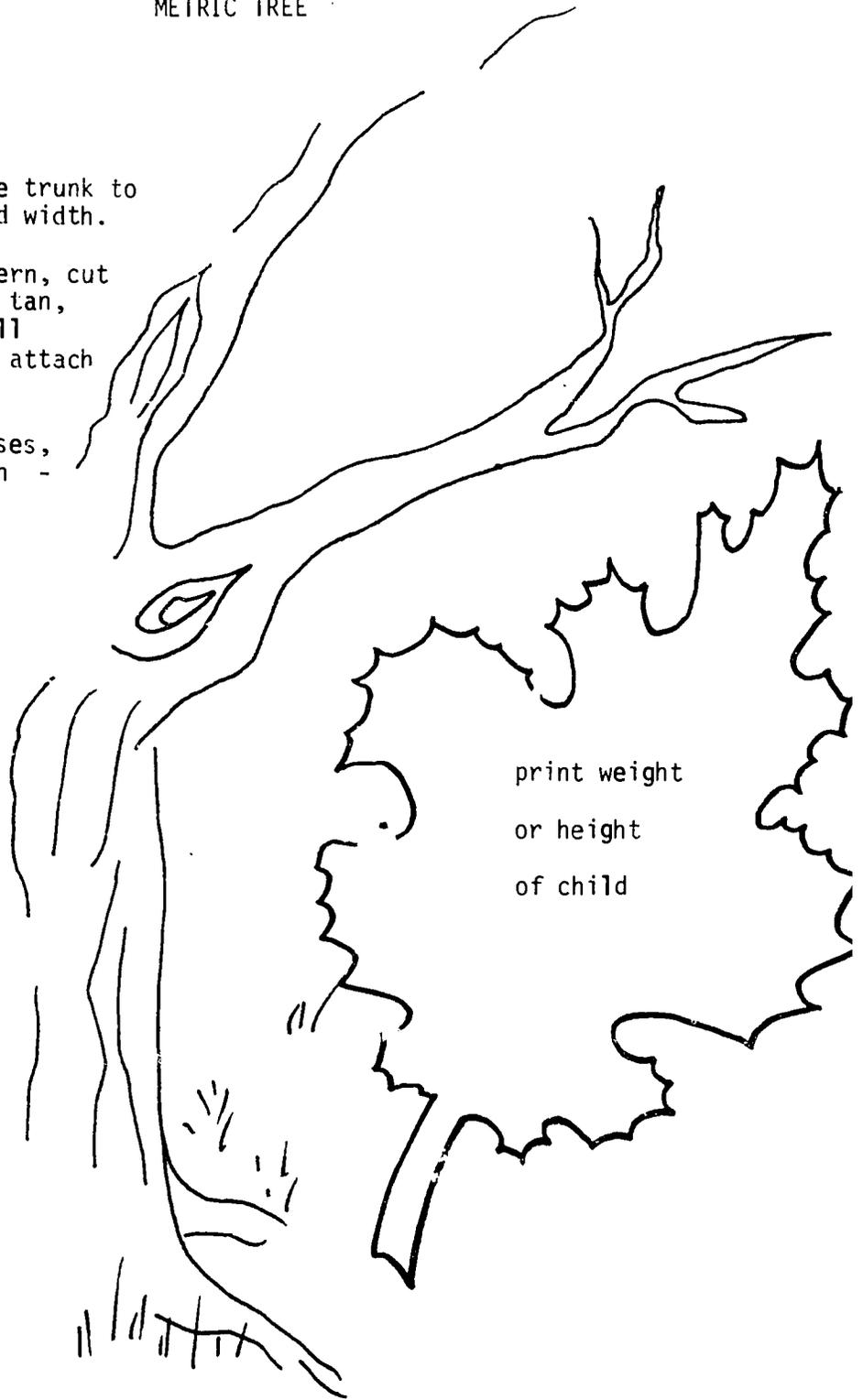
METRIC TREE

TO USE:

Enlarge the tree trunk to desired height and width.

Using leaf pattern, cut leaves from gold, tan, rust and other Fall colors. Children attach leaves to tree.

For Winter classes, substitute Snowman - with snowballs.



- CONCEPTS:
1. Awareness of the metric system
 2. Usefulness of the metric system
 3. Exposure to basic metric terms and tools

OBJECTIVES	SUPPORTIVE LEARNINGS	SAMPLING OF EXPERIENCES & EVALUATION
<p>After the introduction to the metric system, the student will accurately pronounce the term metric and verbally relate it with measuring.</p>	<p>The metric system is a new way to measure things.</p>	<p>Have children stand up in a circle and look around at each other. Are we all the same size? Who is the tallest? Who is the shortest? What must we do to find out how tall or heavy we are?</p>
<p>After discussing the metre, the student will correctly pronounce metre and verbally associate it with measuring length.</p>	<p>When we measure in metrics we use tools that are different from the ones we now use.</p>	<p>Put the word <u>metric</u> on the flannel board and have the children name the letters in the word.</p> <p>Pronounce the word <u>metric</u> together.</p> <p>What tools could we use to measure how tall we are?</p>
<p>After discussing the metre, the student will correctly pronounce metre and verbally associate it with measuring length.</p>	<p>A metre stick measures how tall we are in metres.</p>	<p>Put the word <u>metre</u> on the flannel board and have the children name the letters in the word.</p> <p>Pronounce the word <u>metre</u> together.</p>

OBJECTIVES

SUPPORTIVE LEARNINGS

SAMPLING OF EXPERIENCES & EVALUATION

Having viewed and described the metre stick, the student will identify a metre stick by selecting it from among several measuring devices and stating its correct name.

A metre stick is different than a yardstick in that it is longer and has more numbers.

Show and compare a yardstick and a metre stick. Which is longer? How are the numbers and lines different?

The metre stick measures the length or height of objects.

What are some things in this room that we could measure with this metre stick?

Measure various items with the metre stick.

After completing exercises involving the symbol for metre, the student will select from a group of letters the correct symbol for the term metre.

"m" is the symbol for metre.

Put the symbol m on the flannel board. What letter is this?

Point to the word metre on the flannel board and ask "Do you remember what word this is?"

What letter in this word is the same as the symbol m?

Put several different letters on the flannel board including m's. The children select all the ones that are symbols for metre.

Do you think you weigh more or less than one gram?

Pass various objects around and discuss whether they are heavy or light.

OBJECTIVES

SUPPORTIVE LEARNINGS

SAMPLING OF EXPERIENCES & EVALUATION

After demonstrating the different types of metric scales, the student will match objects with the type of scale on which they could be weighed.

Different types of metric scales are used to weigh things depending on the size and how heavy the items are.

Show and demonstrate a balance scale, platform scale and a bathroom scale. Discuss what type of items could be weighed on each.

Relate balance scale to how a see-saw works.

After completing exercises using the symbol for gram, the student will select from a group of letters the correct symbol for the term gram.

"g" is the symbol for gram.

Put the symbol on the flannel board. What letter is this?

Point to the word gram on the flannel board and ask "Do you remember what word this is?"

Where do we find the letter g in this word?

Put several different letters in a bag. The children will take turns selecting a letter and then telling whether or not it matches the symbol for gram.

Following the discussion on the way to measure weight in the metric system, the student will participate in all the activities relating to the concept of the gram.

Application of basic metric principles to reinforce the above learnings.

The following plans for daily nursery school activities will carry out and review the metric concepts being taught.

Snack time: Graham crackers will be served for snack.

"Gram Crackers!"

OBJECTIVES

SUPPORTIVE LEARNINGS

SAMPLING OF EXPERIENCES & EVALUATION

After explaining the Celsius thermometer, the student will correctly pronounce the word Celsius and verbally associate it with measuring temperature.

Following practice with the Celsius teaching thermometer, the student will set it within three degrees of the outside thermometer reading in degrees Celsius.

After completing exercises involving the symbol for degrees Celsius, the student will select the correct symbol for the term degrees Celsius.

The thermometer outside is a Celsius thermometer and it measures the temperature in degrees Celsius.

The warmer the temperature the higher the red line will be and the colder the temperature the lower the red line will be.

$^{\circ}\text{C}$ is the symbol for degrees Celsius.

What does a thermometer measure?

Put the word Celsius on the flannel board and have the children name the letters in the word.

Pronounce the word Celsius together.

Show and explain the Celsius teaching thermometer and compare it to the one outside.

Allow children to practice setting the teaching thermometer to various hot and cold temperatures.

Put the symbol $^{\circ}\text{C}$ on the flannel board. What letter is this?

Where is this letter found in the word Celsius?

Put several different letters on the flannel board including C and c. Have children select all the ones that are symbols for Celsius. Also review what the m and g are symbols for.

OBJECTIVES

SUPPORTIVE LEARNINGS

SAMPLING OF EXPERIENCES & EVALUATION

Having discussed the way to measure temperature in degrees Celsius, the student will participate in all the activities relating to the concept of degrees Celsius.

Application of basic metric principles to reinforce the learnings on degrees Celsius.

The following plans for daily nursery school activities will carry out and review the metric concepts being taught.

Snack Time: The children will be served an iced drink and a hot dog wrap-up for snack.

Art: The children will construct simple thermometers made from cardboard and ribbon, using pictures instead of numbers to indicate temperature reading.

Science Table: The children will experiment with containers of hot and cold water and thermometers to see when the red line is high or low.

Music: Sing songs about different types of weather and set the teaching thermometer accordingly.

Calendar and Weather: Each day the children will check the outdoor thermometer and set the teaching thermometer to the same reading.

OBJECTIVES

SUPPORTIVE LEARNINGS

SAMPLING OF EXPERIENCES & EVALUATION

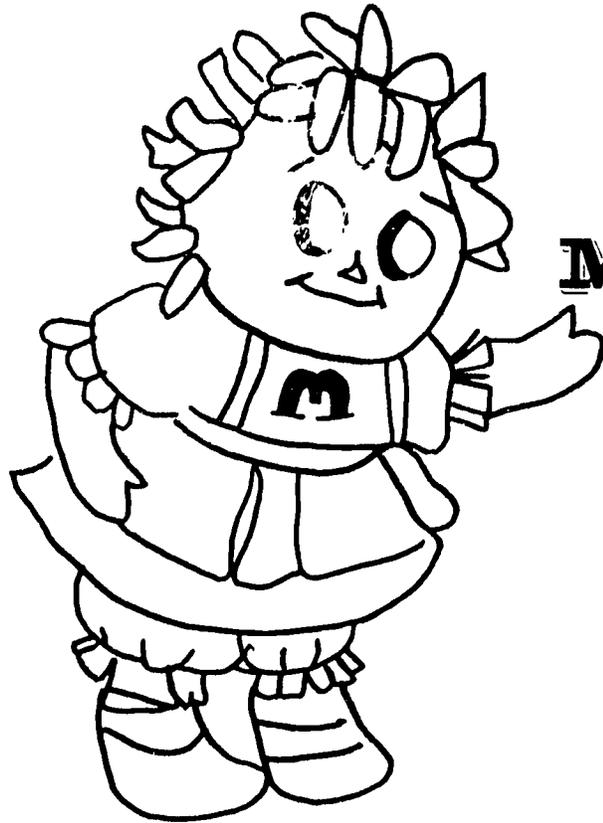
Bulletin Board: Add the character "Silly Celsius" to "Our Metric Helpers" bulletin board.

Story Time: Tell a flannel board story about "Mighty Metre", "Great Gram" and "Silly Celsius".

Symbol Game: Children select a symbol (m, g, or °C) from a box and then tell whether the symbol relates to measuring length, weight, or temperature.

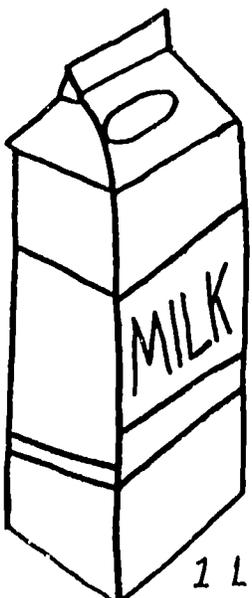
METRIC DOLL

1. Hi! I'm the metric doll. I suppose you want to know why you should metricate. You already know how many tablespoons are in a cup, ounces in a quart, pecks in a bushel, rods in a mile. . .
2. Oh? You don't know all of these? Relax, many people don't. That's why we are switching to the metric system. You'll soon find litres and grams easy to master.
3. The metric system is based on the number ten. Once you master the prefixes, it's simple. Liquids are expressed in litres, distance in metres, mass in grams and temperature in degrees Celsius.
4. You have the idea now! You are ready to communicate with the rest of the world. You see, the United States is one of the few countries not using the metric system at the present time. We will be gradually switching over the next 10 years.
5. Your height will be expressed in centimetres and your weight will be in kilograms. Your figure may measure 95-68-94!

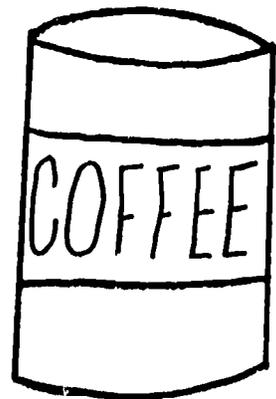


METRIC DOLL

- ___ Tablespoons = 1 Cup
- ___ Ounces = 1 Tablespoon
- ___ Ounces = 1 Quart
- ___ Quarts = 1 Peck
- ___ Quarts = 1 Barrel
- ___ Pounds = 1 Ton
- ___ Feet = 1 Rod
- ___ Rods = 1 Mile



1 LITRE = 1.05 QUARTS



454 GRAMS = 1 POUND



10

1 KILOGRAM = 1000 GRAMS

1 HECTOGRAM = 100 GRAMS

1 DEKAGRAM = 10 GRAMS

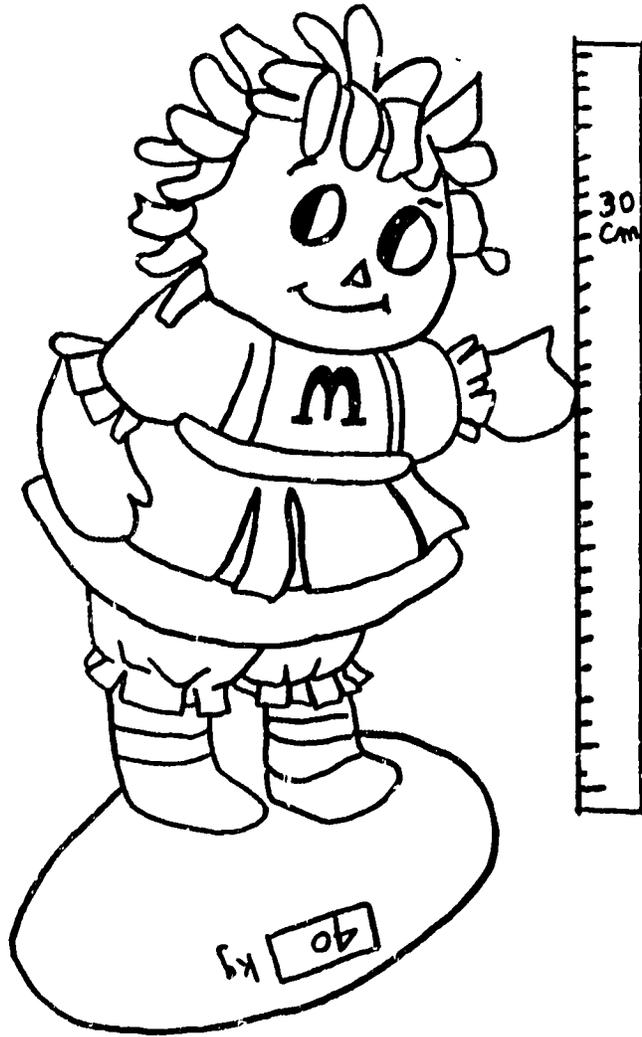
1 GRAM = 1 GRAM

1 DECIGRAM = 0.1 GRAM

1 CENTIGRAM = 0.01 GRAM

1 MILLIGRAM = 0.001 GRAM





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INTRODUCTION TO METRICS

1. The Droop will help you find ways of looking at the metric system. He hopes you will be able to recognize and use metric terms fluently. Because our present system of measurement is so cumbersome and has varying values, he knows you will find metrics very simple.
2. A major advantage of the metric system is its simplicity. The metric system progresses logically in units of 10. T-E-N! T-E-N! Go Ten!
3. The prefixes have the same meaning whether measuring length, area, liquid volume or mass. The basic units, as well as prefixes, are consistent. The names in our customary system - inch, yard, ounce, and pound, give no clue to any relationship.

The larger units are: kilo - 1000 X
 hecto - 100 X
 deka - 10 X

The smaller units are: deci - one tenth (0.1)
 centi - one hundredth (0.01)
 milli - one thousandth (0.001)

There are seven basic units in the metric system. We will take a look at the most common ones.

4. First we have the metre. A metre is used in measuring length. It is a little longer than a yard. Distances will be measured in metres. Clothing sizes will be designated in centimetres.
5. The larger units are: 1000 metres = kilometre
 100 metres = hectometre
 10 metres = dekametre

One metre is equal to: 10 decimetres
 100 centimetres
 1000 millimetres
6. Next is the litre. The litre is used for measuring volume. It is a little larger than a quart. Gasoline, milk and coke are just a few items to be measured in litres. The litre is a derived unit - not a basic unit.
7. The larger units are: 1000 litres = kilolitre
 100 litres = hectolitre
 10 litres = dekalitre

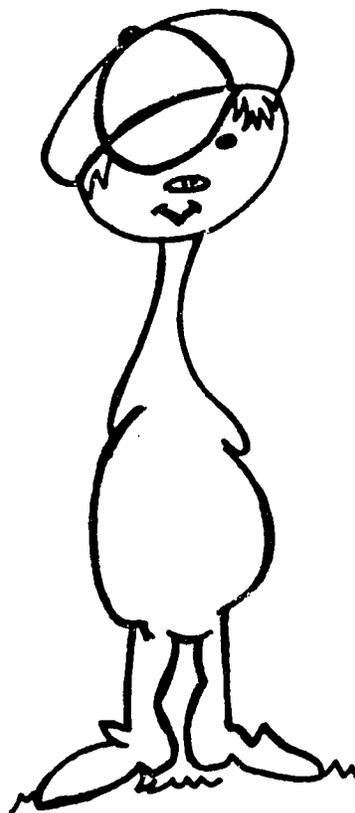
One litre is equal to: 10 decilitres
 100 centilitres
 1000 millilitres

• Which is the largest unit? Which is the smallest unit?

8. A third unit of measurement in the metric system is the kilogram. This is the only basic unit with a prefix. Grams and kilograms are used for measuring weight or mass. One gram is about equal to the weight of a paperclip. Potatoes will be purchased by the kilogram. Your weight will be calculated by kilograms. Flour and sugar will be measured by grams.
9. Larger units of the gram are: 1000 grams = 1 kilogram
 100 grams = 1 hectogram
 10 grams = 1 dekagram
- One gram is equal to: 10 decigrams
 100 centigrams
 1000 milligrams
- Which is the heaviest unit? Which is the smallest?
10. The metric term for temperature is degrees Celsius. Normal body temperature is 37°Celsius, and a comfortable room would be 24°Celsius.
 Water freezes at 0°Celsius, and boils at 100°Celsius.
11. The metric measurement for clothing is expressed in centimetres. A woman's size 12 in ready-to-wear will continue to be size 12, but the measurements will be 87-67-92 centimetres rather than 34-24-36 inches.
12. Major kitchen and home appliances and other large furnishings will be purchased in metric units. Service and replacement parts will be changed in the metrication process (tools, nuts, bolts, screws, etc.)
13. Using the metric system is as easy as using our monetary system. (Read and compare, using transparency).
14. Let's now join the Droop in a review.
 (Review and discuss, using the LENGTH, VOLUME and MASS transparencies with the overlay for prefixes and decimal equivalencies).
15. The metric system is a much simpler way to figure weights and measures. It coordinates measurements of length, area, volume and mass into one decimalized system. We don't have to change inches to feet or feet to yards, nor do we have to change ounces to pounds and pounds to tons. In metric, we just shift the decimal point, as we do in our monetary system. You will find the metric system a convenience.
- So - get with the DROOP - METRICATE.

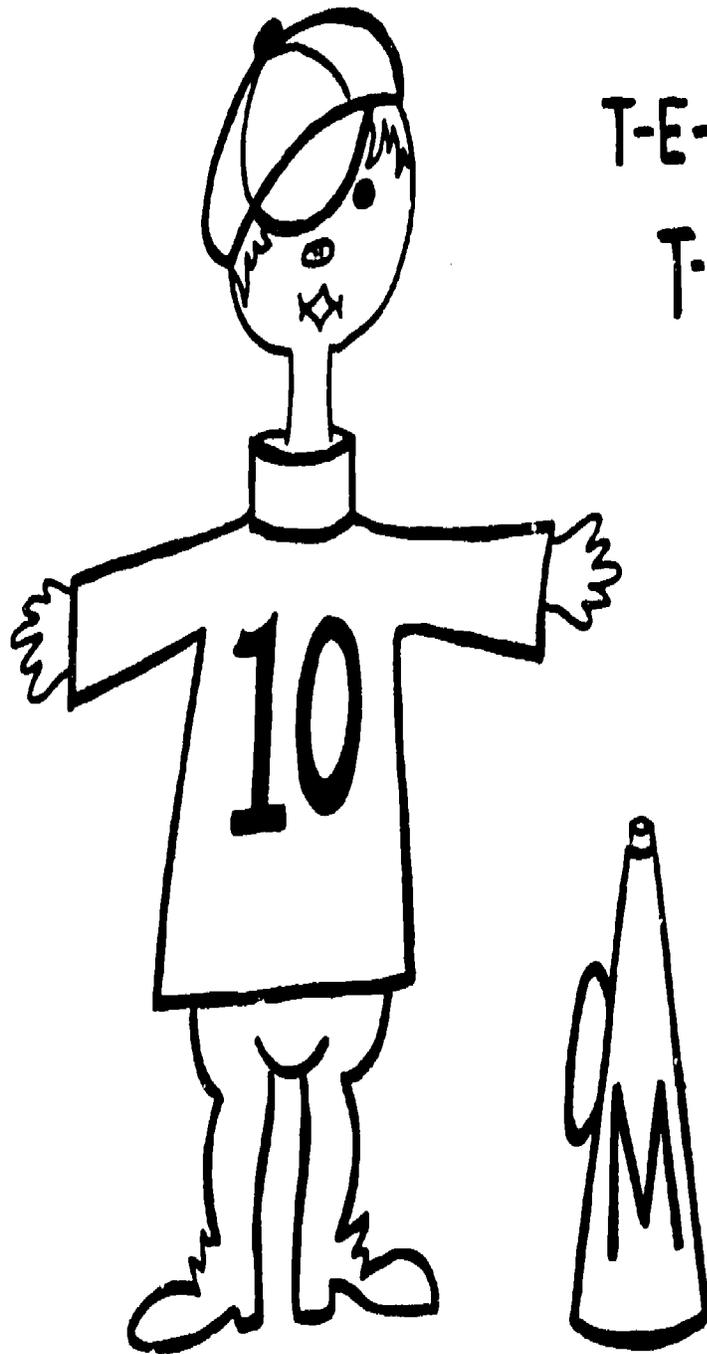
INTRODUCTION
TO
METRICS

This is DROOP.



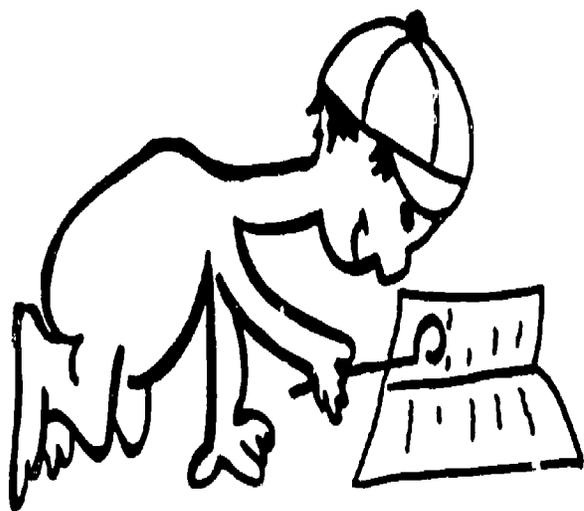
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T-E-N!
T-E-N!

GO
TEN



deci - one tenth (0.1)

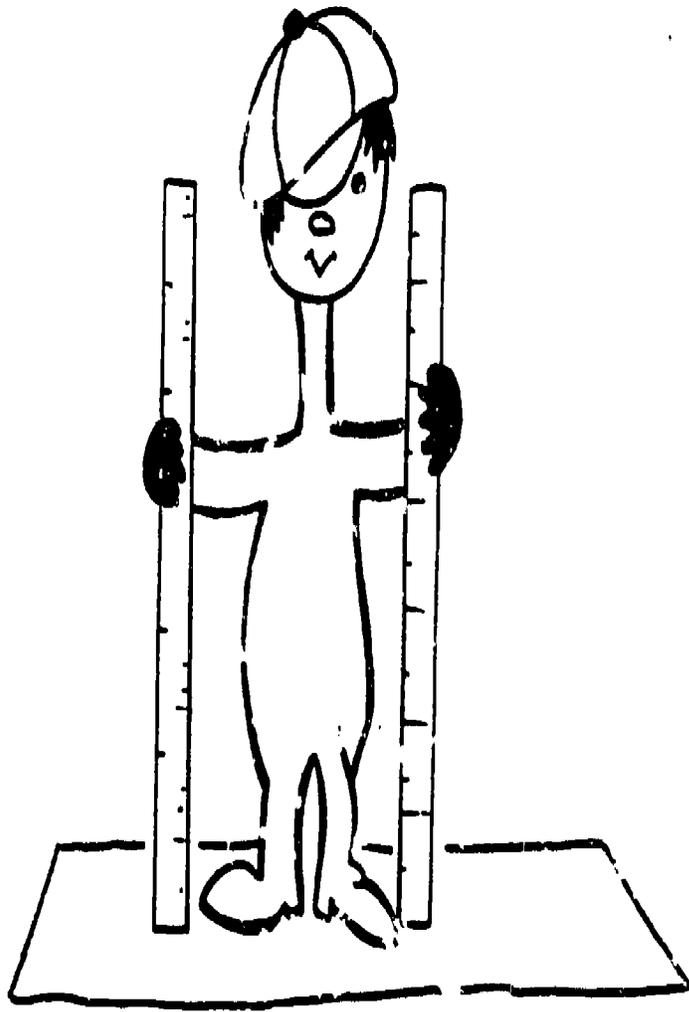
centi - one hundredth (0.01)

milli - one thousandth (0.001)

deka - ten times (10)

hecto - one hundred times (100)

kilo - one thousand times (1000)



This is a metre.

A metre is used for measuring length.
It is a little longer than a yard.

1000 metres = 1 kilometre

100 metres = 1 hectometre

10 metres = 1 dekametre

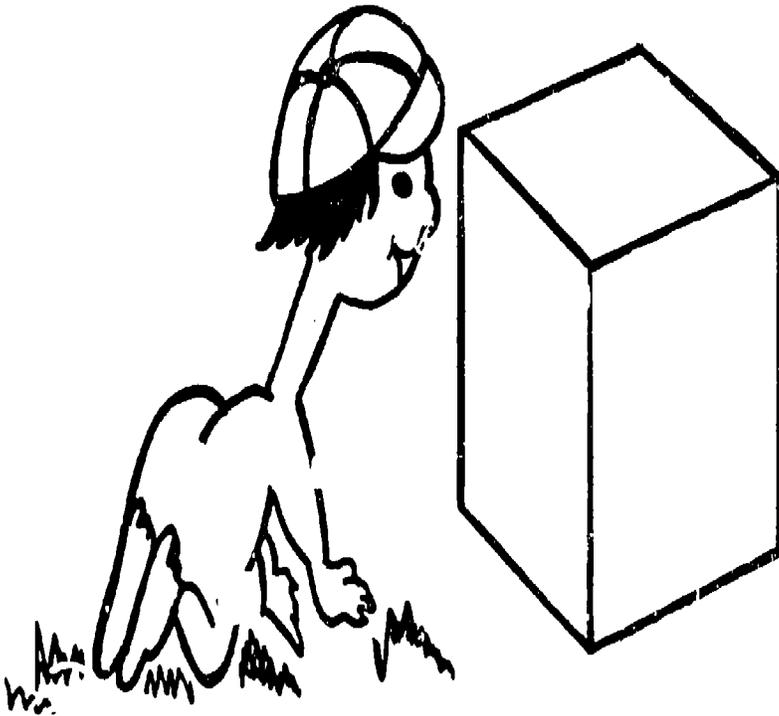
1 metre = 10 decimetres

= 100 centimetres

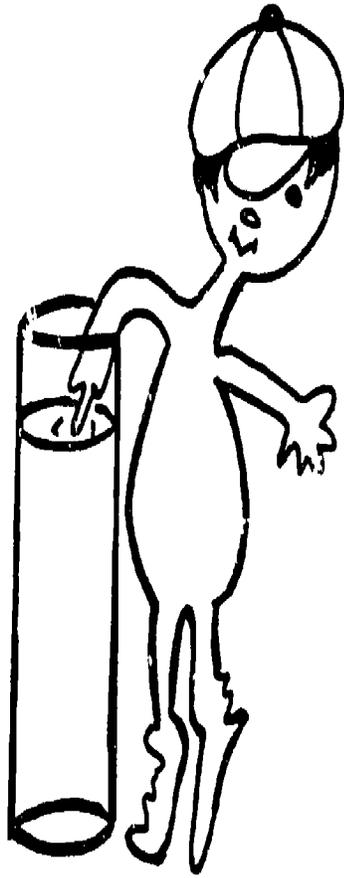
= 1000 millimetres



This is a litre.



A litre is used for measuring volume.
It is a little larger than a quart.

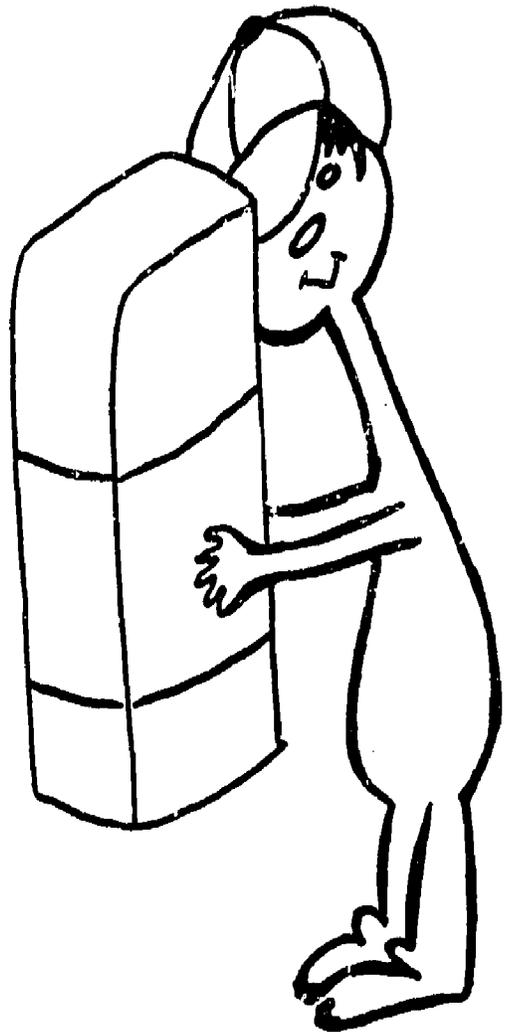


1 litre = 10 decilitres
= 100 centilitres
= 1000 millilitres

10 litres = 1 dekalitre
100 litres = 1 hectolitre
1000 litres = 1 kilolitre

This is a kilogram.

A kilogram
is used for
measuring
weight or mass.



1000 grams = 1 kilogram

100 grams = 1 hectogram

10 grams = 1 dekagram

1 gram = 10 decigrams

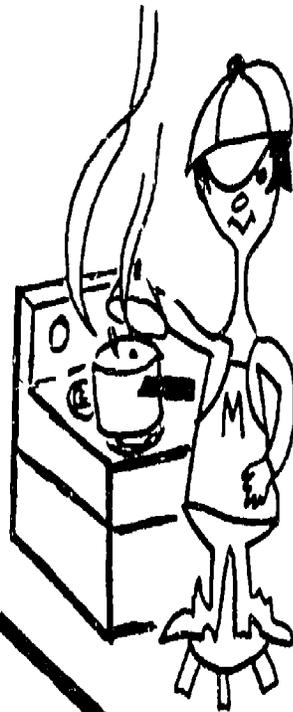
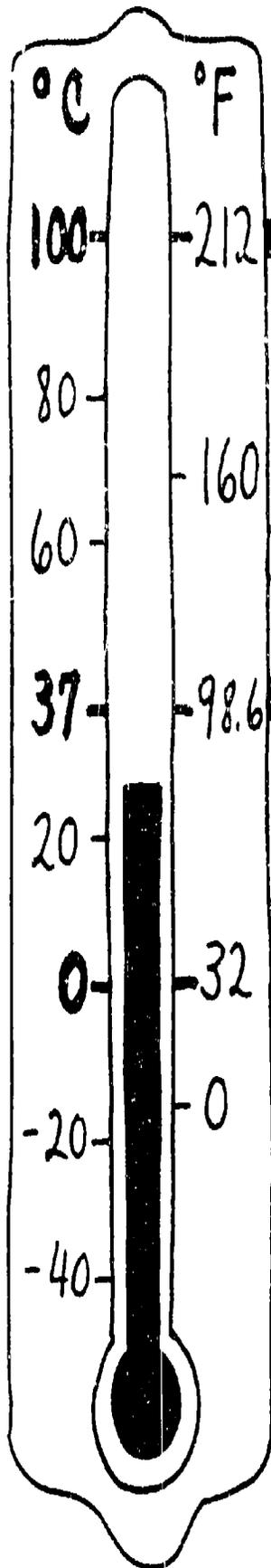
= 100 centigrams

= 1000 milligrams



DEGREES CELSIUS -

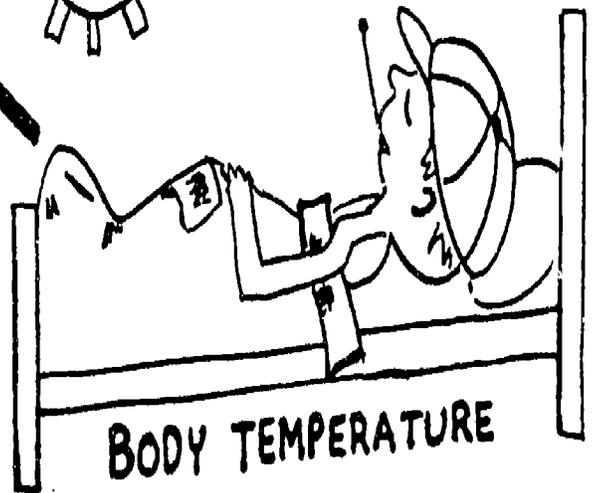
THE METRIC TERM FOR TEMPERATURE



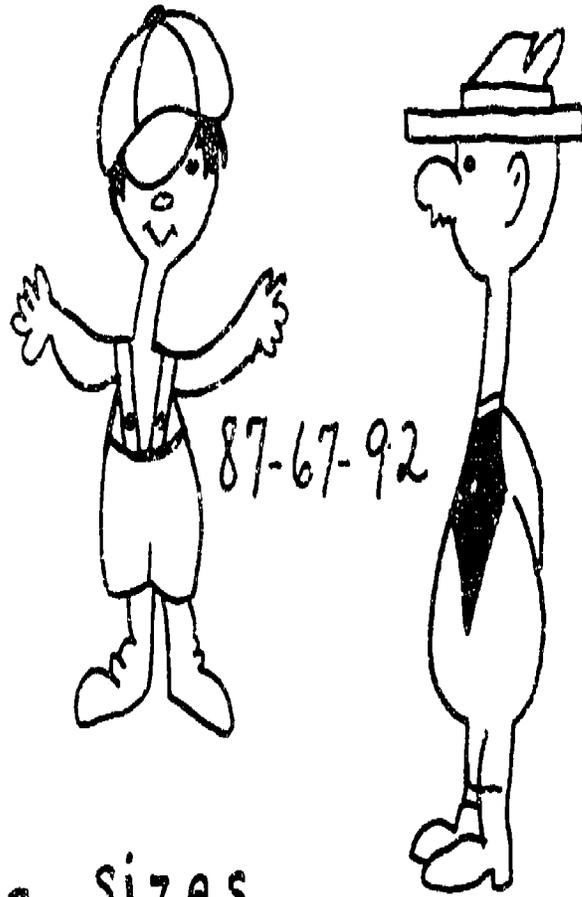
WATER BOILS



WATER FREEZES

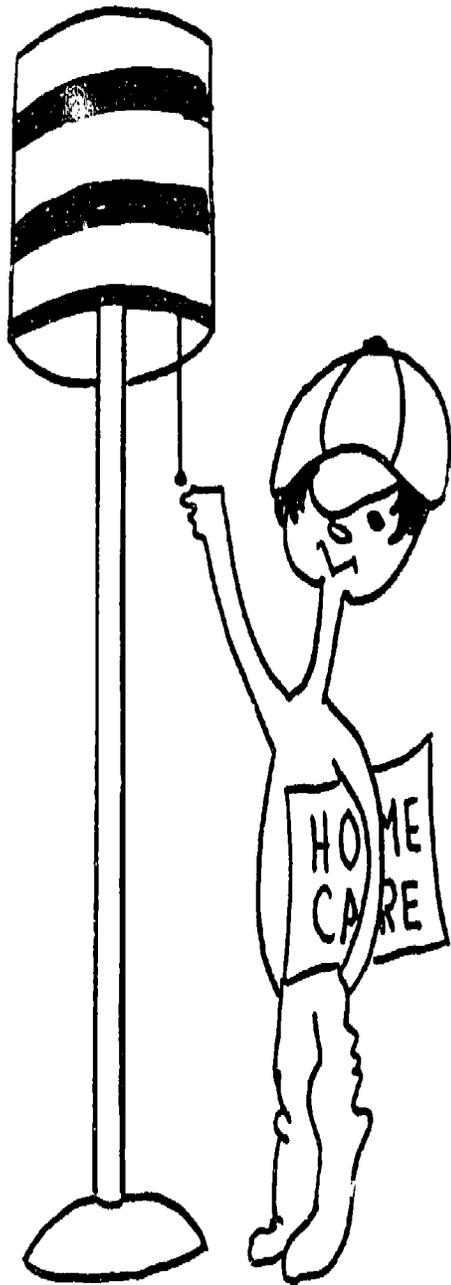


BODY TEMPERATURE

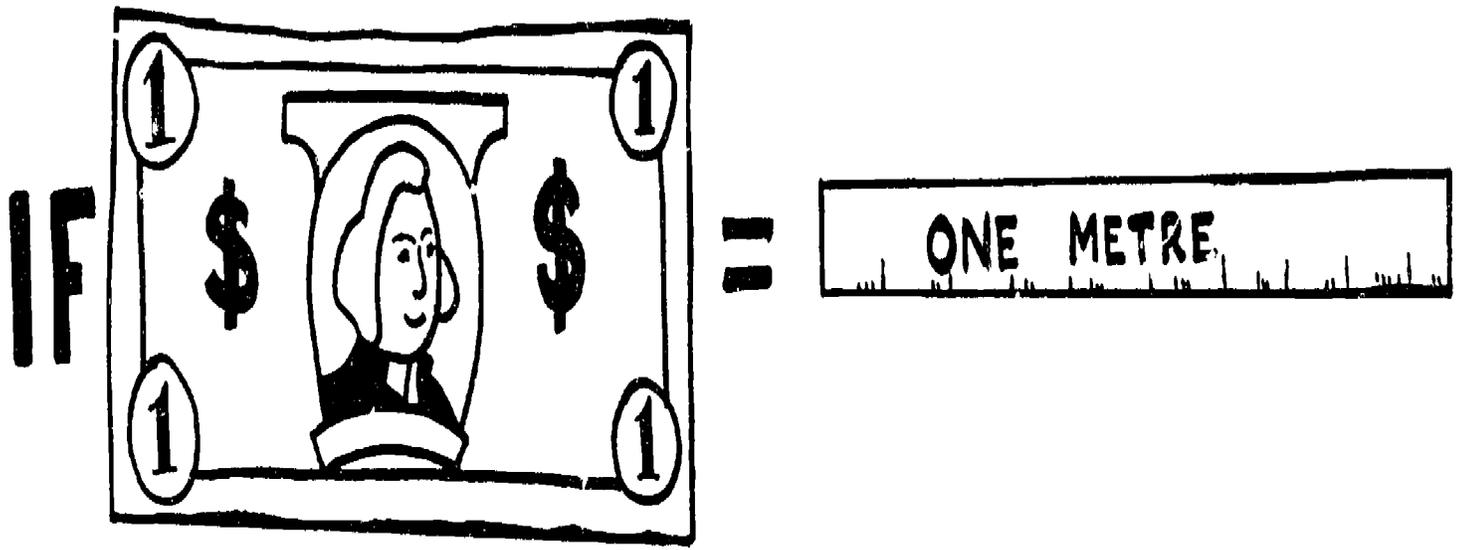


Clothing sizes

will be expressed in centimetres.



Metrics
will be used in
home furnishings,
appliances, and
equipment.



THEN

10 dimes = 10 decimetres

100 cents = 100 centimetres

1000 mills = 1000 millimetres

LENGTH

METRE

METRES

METRE

METRES

METRE

METRES

METRE

METRE

METRE

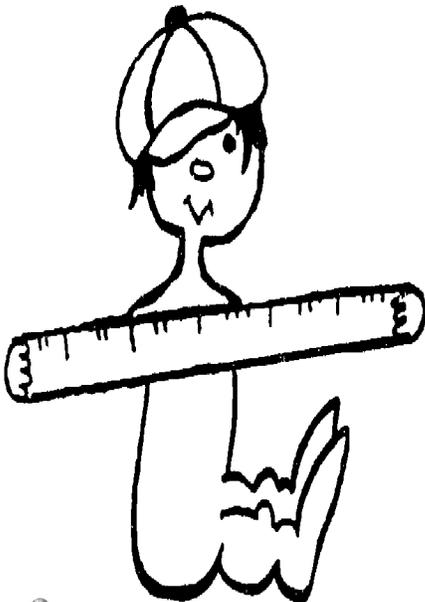
METRE

METRE

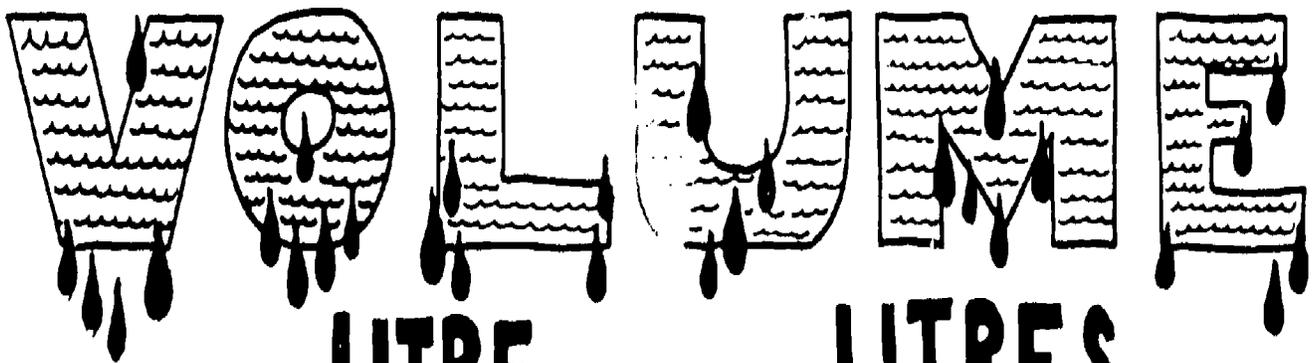
METRE

METRE

METRE



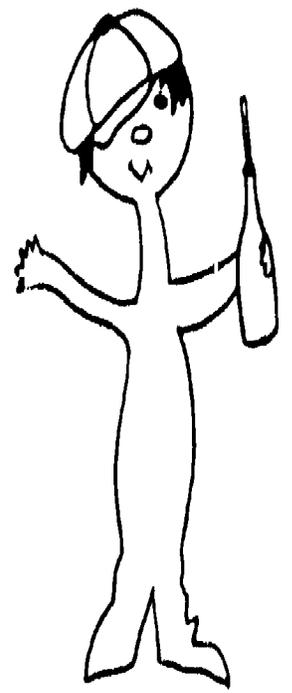
*How many
metres can you
stretch your arms?*



LITRE
LITRE
LITRE
LITRE
LITRE
LITRE
LITRE

LITRES
LITRES
LITRES
LITRE
LITRE
LITRE
LITRE

*How many
litres are in a
bottle of
cake?*



MASS

GRAM

GRAMS

GRAM

GRAMS

GRAM

GRAMS

GRAM

GRAM

GRAM

GRAM

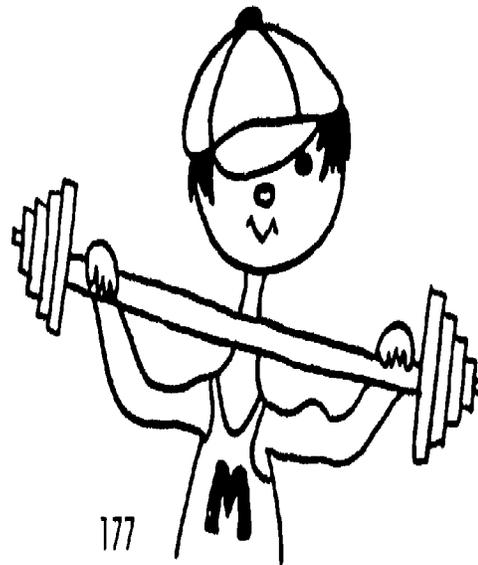
GRAM

GRAM

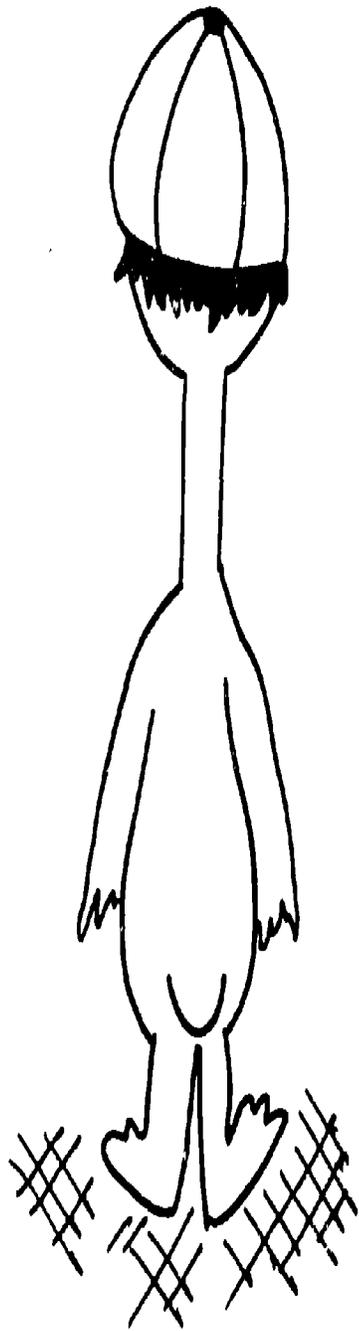
GRAM

GRAM

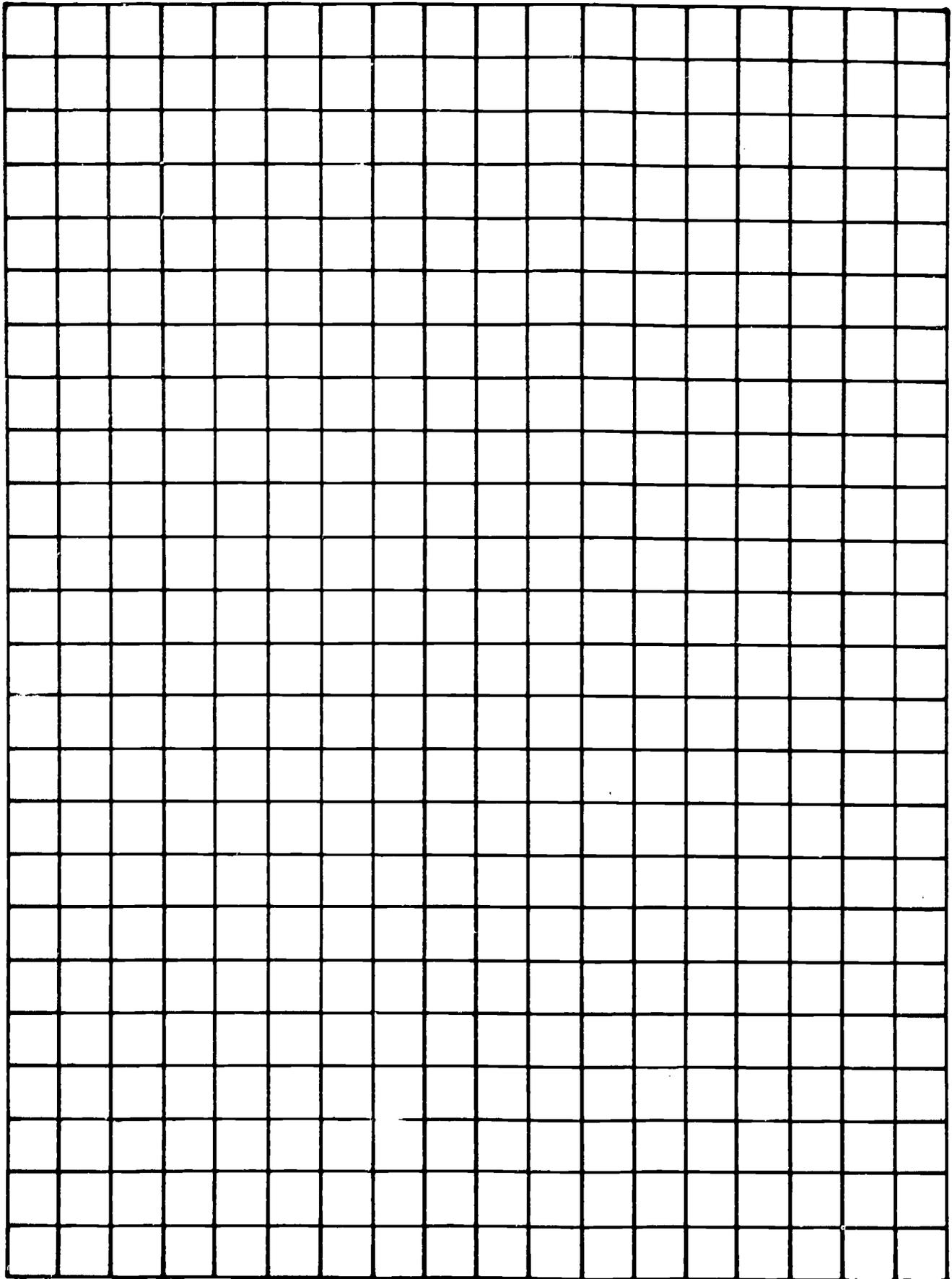
How many kilograms can you lift?



1 kilo	= 1000
1 hecto	= 100
1 deka	= 10
1	= 1
1 deci	= 0.1
1 centi	= 0.01
1 milli	= 0.001



A FINAL WORD... **METRICATION!**



GAMES

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METRE MAID GAME

There are 20 pairs of cards and one picture of the METRE MAID for this game. A pair is two cards which are equivalent in metric value. After shuffling the cards, deal one at a time until all cards are distributed. A person is needed to act as referee, checking each pair for accuracy before the player may put that pair down on the table. After the cards have been dealt, each player is to match as many pairs as possible within the hand.

The dealer draws a card from the player on his right. If it matches with a card in his hand, the pair is placed on the table. The player on the dealer's right then chooses a card from the person on his right and play continues in the same manner.

The game continues until all pairs are matched, leaving one person holding the METRE MAID card. The winner is the person who has the most matched pairs. This person may act as dealer for the next game.

Examples for 20 pairs: (s = symbol)

centimetre (s = cm)	metre= unit of length
hectometre (s = hm)	deka means 10 x
1 metre = 39.37 inches	hecto means 100 x
millimetre (s = mm)	kilo means 1000 x
decimetre (s = dm)	10 dm = 1 m
kilometre (s = km)	1 km = 10 hectometres
metre (s = m)	10 mm = 1 cm
centi means 1/100	10 dam = 100 m
milli means 1/1000	0.001 m = 1 mm
deci means 1/10	0.01 m = 1 cm

NOTE: METRE MAID can be made into decks for learning volume and mass by substituting the equivalent cards to make LITRE MAID or GRAM MAID.

METRIC MILLY CARD GAME

PROCEDURE: Played similar to Old Maid with 2-4 players. After the deck of 53 cards are dealt, the player to the dealer's left begins the game. Each person in turn selects a card from the player on his left and tries to make a pair. The game continues until all cards have been matched and one player is left with the METRIC MILLY card. A referee holds the master list of question and answers to check pairs that are laid down.

OBJECTIVE: Players must match a question card with its correct answer card.

SCORING: Each correct pair that is laid down is scored as 2 points. Player with highest number of points wins the game.

MASTER LIST

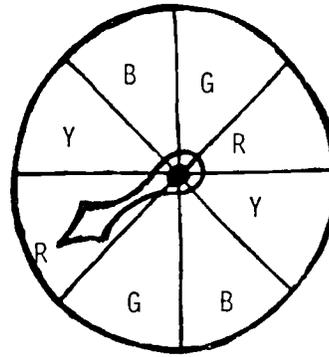
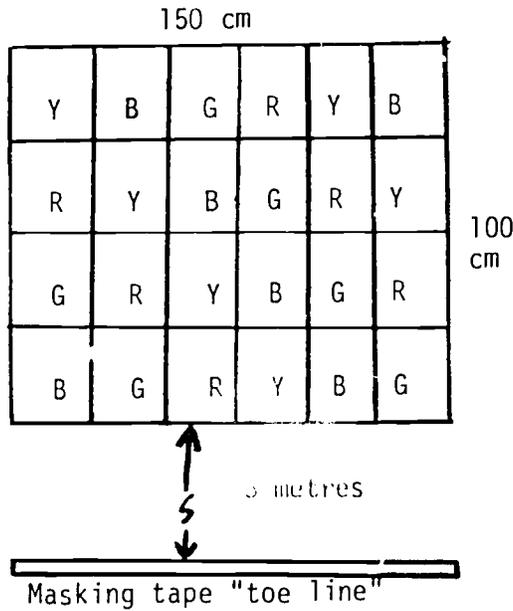
(Each of the following are to be printed on a card to make a deck of 53 cards)

QUESTIONS	ANSWERS
1. A gram is a measure of	weight
2. A litre is a measure of	liquid volume
3. A metre is a measure of	length
4. A centimetre equals	1/100 metre
5. The letter g symbolizes	gram
6. A kg equals	1000 grams
7. A kilogram equals	2.2 pounds
8. A litre equals	1.06 quarts
9. A metre equals	39.37 inches
10. One pound equals	454 grams
11. In the word centimetre, the prefix centi means	1/100 of a metre
12. Celsius is the unit of	temperature
13. Water boils at _____°C	100°C
14. Water freezes at _____°C	0°C
15. One teaspoon equals _____	5 ml
16. One cup equals	250 ml
17. One tablespoon equals	15 ml
18. One inch equals	2.54 cm
19. Deci means	1/10
20. Hecto means	100 times
21. Deka means	10 times
22. Milli means	1/1000
23. Kilo means	1000 times
24. Centi means	1/100
25. A 5/8" seam allowance on a pattern equals	1.5 cm
26. On the Celsius scale, body temperature equals	37°C
27. METRIC MILLY	

MORE DIFFICULT PAIRS

1.2 cm	12 mm	3 cm	30 mm
10 cm	1 dm	50 cm	500 mm
100 cm	1 m	150 cm	1.5 m
125 cm	1.25 m	300 cm	3 m
1000 m	1 km		

METRIC GAME



Make spinner from cardboard.
Cut arrow from side of margarine tub.
Attach arrow with a brass brad.

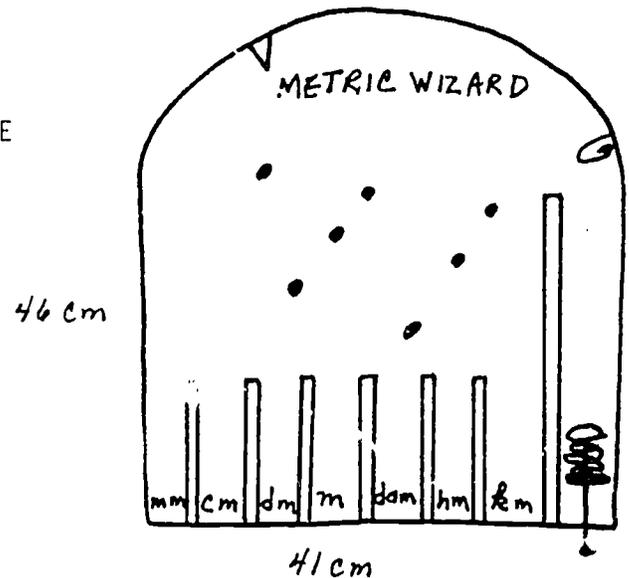
SUPPLIES NEEDED: Spinner with 4 colors on dial face
Crayon-batiked sheet 150 cm x 100 cm
squares are 25 cm x 25 cm
colors arranged as indicated in diagram
Bean bag app. 16 cm x 11 cm
Question cards 8 cm x 13 cm
at least 16 of each color (yellow, green, red, blue)
point system: yellow or green = 5 points
red or blue = 10 points
Masking tape to hold edges of sheet in place on floor
and for "toe strip" for player to stand behind.

OBJECT: Throw bean bag onto colored square on sheet which matches color shown on spinner. Answer metric question with same color-coding for point value shown on card.
Recommended number of players is 4. Points may be tallied individually or as teams (2 players each on two teams).

RULES:

1. Spin dial. Person stands behind tape line 3 m away from sheet.
2. Person throws bean bag attempting to land on corresponding color of square on sheet. Limit of 2 tries per turn.
3. If bean bag lands on corresponding colored square, the person is asked a metric question of the same color. (Another person reads the question aloud, since the answers are marked on question cards.)
4. Person answering metric question correctly receives designated number of points shown on card.

METRIC WIZARD GAME



SUPPLIES:

1. Pinball-type playing board - dowel rods used as bumper pegs
- 7 metric slots in graduated form
- spring-loaded plunger
2. 7 marbles
3. Score pad and pencil

OBJECT:

1. Interpret metric symbols
2. Convert each scored metric symbol to a metric metre decimal on score pad
3. Find the sum (in metres) of the 7 marble scores.

RULES:

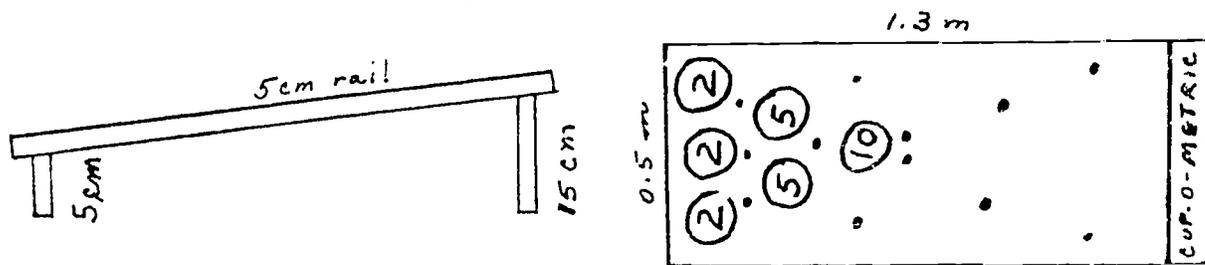
1. Player shoots all seven marbles (one marble at a time).
2. Record the 7 metric symbols in which the marbles land on the tally tab. Each marble represents 1 unit of measure for the appropriate slot.
3. Convert the metric symbols into metric metre decimals.
4. Player then adds the 7 metric metre decimals.

For example, if the seven marbles fall in slots as follows:

- | | | |
|----|------|------|
| 1. | dm = | 0.1 |
| 2. | cm = | 0.01 |
| 3. | cm = | 0.01 |
| 4. | km = | 100 |
| 5. | km = | 1000 |
| 6. | m = | 1 |
| 7. | m = | 1 |
-

The total is 1102.12 metres

Cup-0-Metric Game



SUPPLIES:

1. Table - approximately 1.3 m x 0.5 m
 - six holes (arranged as shown in diagram above) 10 cm diameter
 - 5 cm retainer rail around table
 - dowel rods used as bumper pegs
 - table is mounted on a slant downward toward tubs
2. 6 margarine tubs inserted into table holes (graduated point system: 1 for 10 pt., 2 for 5 pt., 3 for 2 pt.)
3. 4 ping-pong balls
4. assorted metric questions on discs of paper (to be placed in the tubs)
5. scoring pad and pencil

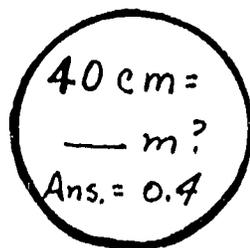
Recommended number of players = 4. Points may be tallied individually or as two teams (2 persons per team).

OBJECT:

Roll ball into a cup. Top question is read from cup in which ball lands. Answer question to receive point value of that cup.

RULES:

1. Player rolls one ball. Another person reads aloud the question from the top card in that particular cup. (Answers are on cards.)
2. If question is answered correctly, person receives score indicated on cup. Card is removed from game.
If question is answered incorrectly, card is placed on the bottom of the cards in that cup.
3. If a cup is depleted of its questions, card discs may be taken from another cup.
4. At no time should the table be bumped or shaken to change the direction of the ball.



cards to fit bottom of margarine tub

SAMPLE QUESTIONS FOR HECTIC METRIC AND CUP-O-METRIC

I. Easier questions: (Yellow)

1. The symbol c stands for which metric prefix? (centi-)
2. Prefix meaning one thousandth. (milli-)
3. What is the metric symbol for the prefix deka? (da)
4. 1 kilogram is how many grams? (1 000)
5. How is 1 decimetre written as a decimal? (0.01 m)
6. The _____ is a measure of length. (metre)
7. A metre equals _____ cm. (100)
8. _____ shall replace inches. (centimetres)
9. The metric base unit for volume is _____ (litre)
10. Temperature is measured in _____ (°Celsius)
11. If 3 metres contain 300 cm, 6 metres contain _____ cm. (600)
12. A mm is the same as _____ (give fraction) of a metre. (1/1 000)
13. How is 1 mm symbolized as a metric decimal? (0.001 m)
14. What is the name given to the metric system you are learning? (SI)
(Systeme International)
15. Which is smaller a centimetre or a decimetre? (centimetre)
16. One litre contains _____ ml. (1 000)

(Green)

1. What is the prefix meaning 1/10 of a metre? (deci-)
2. Hecto- means times _____. (100)
3. k is the symbol for the metric prefix _____. (kilo-)
4. The metre is the unit of measure for _____. (length)
5. A centimetre is what part of a metre? - fraction. (1/100)
6. The metre replaces the _____. (yard)
7. Is there a period after 2 m? (no)
8. _____ shall replace miles. (kilogram)
9. Metric unit for mass? (gram)
10. A decimetre is divided into ten equal parts. Each part is called a _____. (centimetre)
11. Name one item for which the metre would be too long a unit for measuring. (ex.: pencil, scissors, etc.)
12. Dekametre means ten times a _____. (metre)
13. Approximately how wide is your little fingernail? (1 cm)
14. Approximately what is the span of your hand from thumb to little finger expanded? (20 cm)
15. Which is longer, a metre or a yard? (metre)
16. In the metric system, is a pin measured in inches? (no; cm)

II. Harder questions: (Red)

1. How is 24 centimetres written as a decimal with a metric symbol - metres? (0.24 m)
2. Instead of telling the lady in a store that you want 'so many' yards of fabric, you will say 'so many' _____. (metres)
3. A new pencil is approximately _____ cm long. (20 cm)
4. 4 m 2 dm is expressed as _____ m. (4.2)
5. The metric system is written in base _____. (10)
6. To change metres to decimetres which way do you move the decimal? (right)
7. 1.9 cm = _____ mm. (19)
8. 2 kilometres = _____ metres. (2 000)
9. Name one measurement (base unit) which will not change as the U. S. converts to metrics. (ex.: money, time)
10. 1 mm + 1 mm = _____ m. (0.002 m)
11. What is used in place of a comma to show groups of digits when writing 1,000 in metrics? (a space)
12. 0.9 m = _____ cm. (90 cm)
13. 40 cm is _____ metres. (0.4)
14. Which is shorter: 1/2 yd. OR 0.5 m? (1/2 yd.)
15. Name one item, industry, or field in the U. S. which presently uses metrics. (ex.: chemistry, pharmacies, sports, film, etc.)
16. The _____ is used instead of calorie. (Joule)

(Blue)

1. We measure the body in inches; what metric measure is used? (centimetres)
2. 7 m 3 cm is expressed in decimal metric terms as _____ m. (7.03 m)
3. 1 m + 1 dm = _____ m. (1.1)
4. How many dekametres are in a hectometre? (10)
5. Which is longer, a cm or an inch? (inch)
6. 1 dam + 1 dm = _____ m. (10.1)
7. 2 m = _____ mm. (2 000)
8. 4 m = _____ km. (0.004)
9. Helen's poodle weighs 5 kg. If he has doubled his weight since last year, how much did he weigh last year? (2.5 kg)
10. One inch is closest to: 2.5 mm; 2.5 cm; 2.5 dm. (2.5 cm)
11. 1 000 times a metre = _____. (kilometre)
12. 9 mm + 3 mm = _____ cm. (1.2 cm)
13. Should you leave a space between the c and the m when writing cm? (no)
14. Is 45 metres symbolized as 45 ms? (no; 45 m)
15. dam = the da is for _____. (deka)
the m is for _____. (metre)
16. The metric unit used to measure land area is _____. (hectare)

Centi - mental Fun

To measure in metrics is oodles of fun,
We'll begin with a cent to show how it's done.
Let's measure ten pillars. I know you'll agree
They measure a centimetre. It's easy, you see!
The top of the memorial is, you'll find,
Another centimetre to keep in mind.
And now let's measure the man on the face
From shoulder to shoulder, down at the base.
You guessed it already? You weren't surprised?
It seems that you, too, have been "centi-mentized".

GIVE US THIS DAY ...

According to requirements of the Basic Four
Adults need _____ ml of milk or more. (500)

Four servings of fruits and vegetables are fine
If you include _____ ml of citrus when you dine. (125)

The recommended number of grams for meat
Would equal _____ for you to eat. (112 *Woman - 55 grams*)

Four slices of bread, we readily learn,
Provide _____ kilojoules to burn. (1170)

A 58 kilogram woman would, we may say,
Include _____ kilojoules in her diet each day. (300)

BULLETIN BOARD SERIES
(SKETCH FORM)

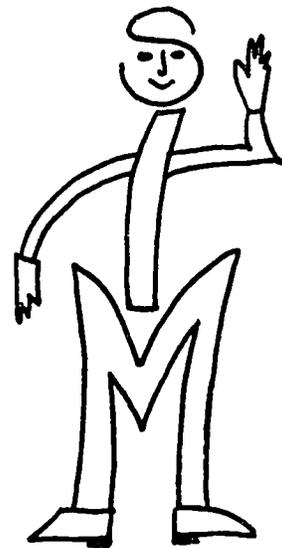
INTRODUCTION TO METRICS

1

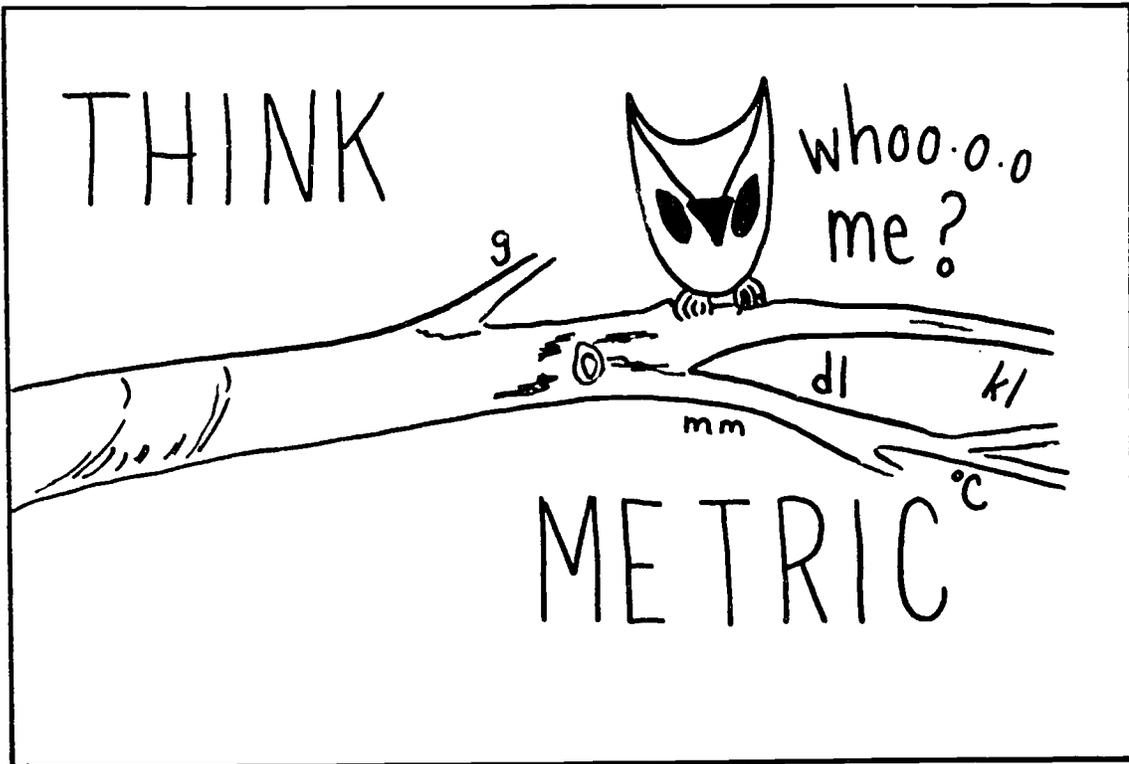
HAVE YOU HEARD . . . ?

Soon we'll measure length in metres,
Buy our juice and milk in litres,
Weigh ourselves and beef and ham
On scales that use the kilogram.

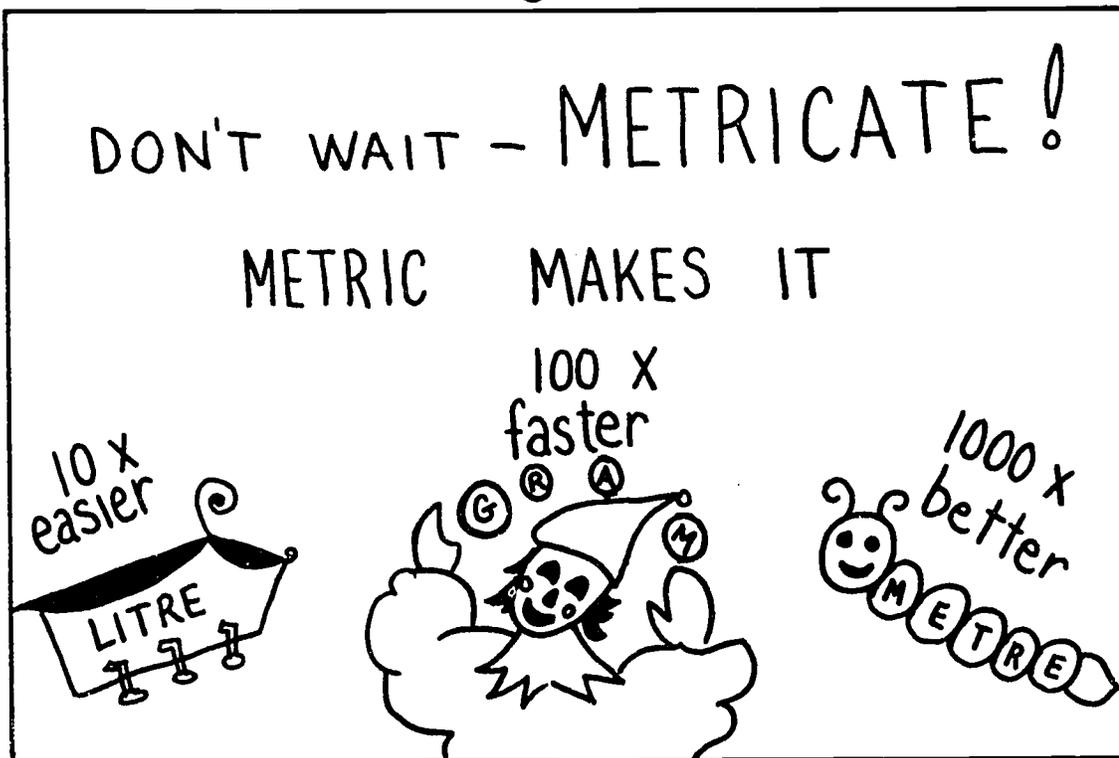
And all the cars' speedometers
Will measure in kilometres.
For any small or large amounts
The metric system is what counts.



2



3



217

195

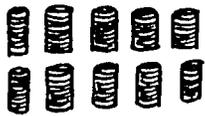
4

IF A DOLLAR EQUALLED A METRE -



THEN

○○○○○ 10 DIMES = 10 DECIMETRES

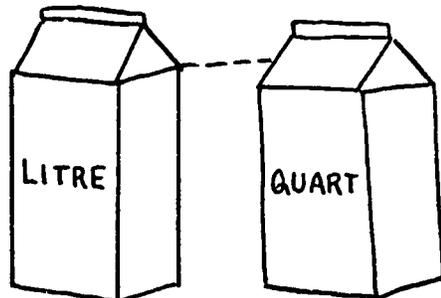
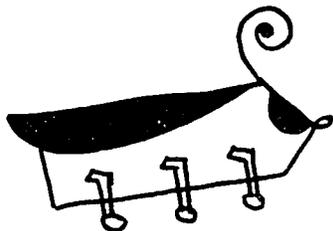
 100 CENTS = 100 CENTIMETRES

 1000 MILLS = 1000 MILLIMETRES

5

BECOME A

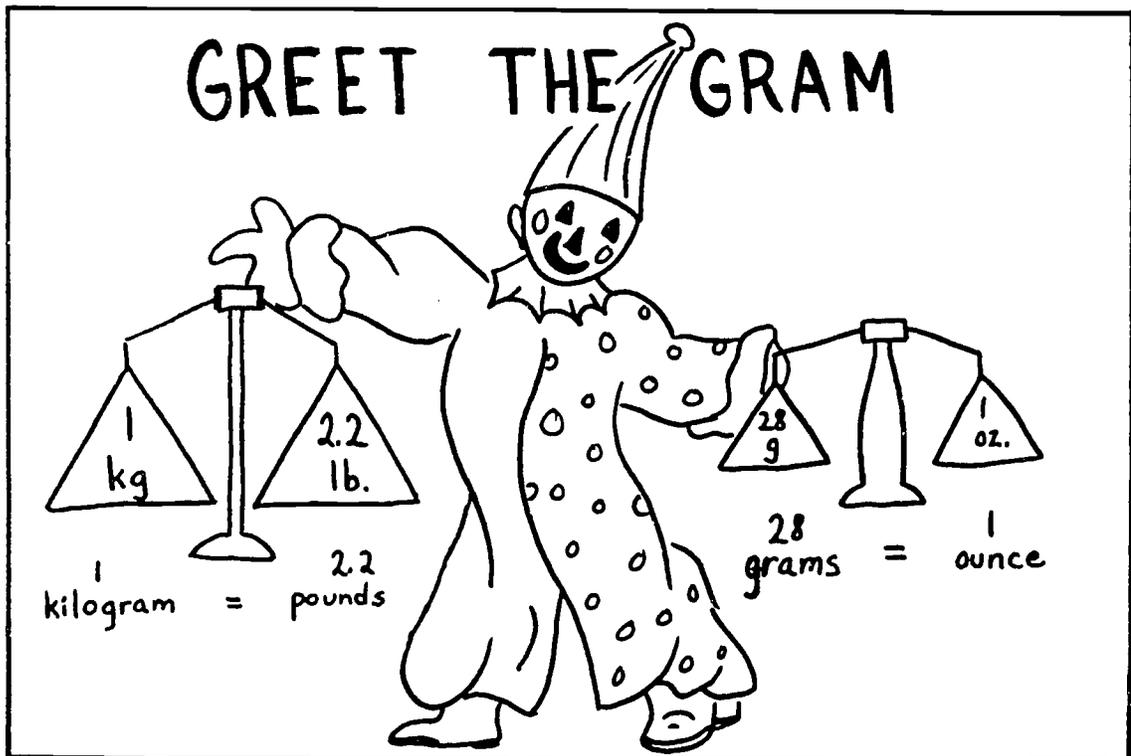
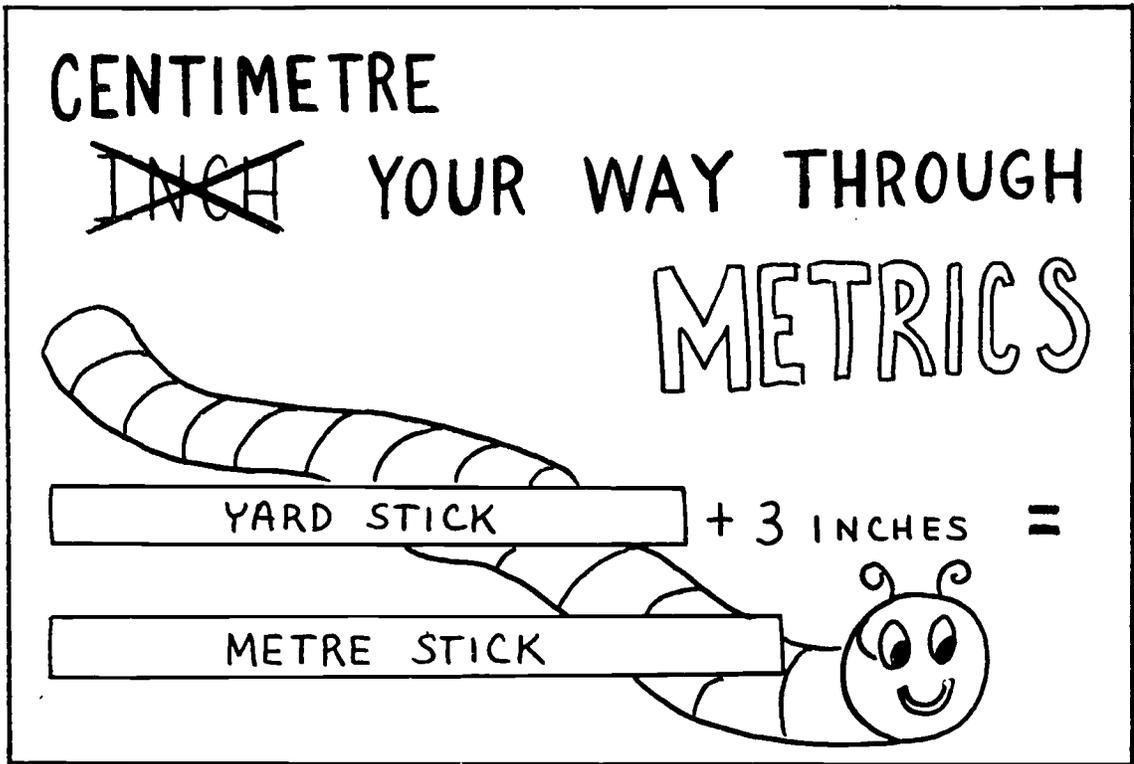
LITRE BUG



1 litre = 1 quart plus $\frac{1}{3}$ cup

218

196

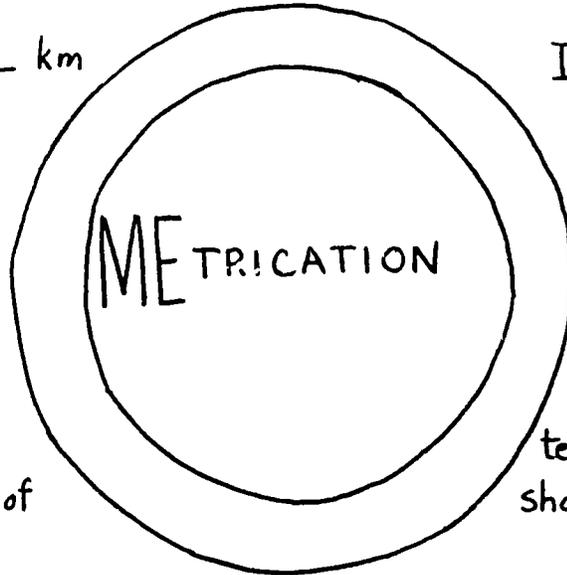


METRICATION BEGINS WITH ME

I live ___ km from school.

I am ___ cm tall.

I weigh ___ kg.

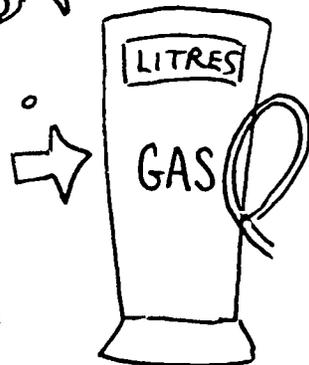
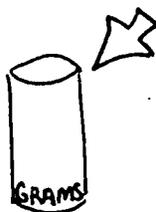
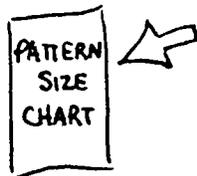


I need to drink ___ ml of milk daily.

My body temperature should be ___ °C.



IT'S COMING . . .



FASTER THAN YOU THINK!

(... AND ETC. SHOWING METRICS AS USED ALREADY.)

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All You Will Need to Know About Metric (For Your Everyday Life). Free
Letter Circular No. 1052
Metric Information Office
National Bureau of Standards
Washington, DC 20234

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126 Folsom Street
San Francisco, CA 94105

"Think Metric" student workbook with practical and novel introduction to metrics for daily use. Humorous, cut-outs for self-study flashcards, making metre sticks and litre cylinders. Evaluation and answers.

"At Home With Metric Measuring," Butterick Publishing Co.
P. O. Box 1945
Altoona, PA 16603

Multi-media package includes filmstrip, cassette tape, guide, activity sheets, 2 wall charts, metric measuring tools. #75.00 plus postage and tax.

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P. O. Box 11845
Santa Ana, CA 92711

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The Modernized Metric System (wall chart: 74 x 114cm, color) is also available
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Complete series of 6 books is available for \$12.00
Student workbook, activity guide, and instructor's manual using "Think Metric" strategy. Designed for elementary in-service teachers, it lists objectives, materials and activities. Self directed and self paced. Adaptable to higher level.

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Chicago, IL 60684

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P. O. Box 47X
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1900 North Narragansett Avenue
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1900 Association Drive
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Mr. Charles Kolak
Executive Assistant for Public & Staff Information
Worcester Public Schools, 20 Irving Street
Worcester, MA 01609

Guide for K-12 includes introduction, history and related changes, objectives in foods, clothing, woodworking, metalworking, mechanical drawing, mechanics, electricity, electronics. Contains background, reference material, and bibliography.

Hunt, Fern E. "Metric System: Boon or Bane," Proceedings of the 19th Annual Conference of the American Council on Consumer Interests, 1973.

The International Metric System and How It Works, \$12.95
Polymetric Services, Inc.
4600 Brewster Drive
Tarzana, CA 91356

The International System of Units (SI). National Bureau of Standards, Pub. 330, 1972, \$.30. (SD Catalog No. C13.10:330/2).

Introducing the Metric System. 1972, 4 filmstrips, 2 audio cassettes or 2 records; set of task cards, \$66.00 with cassettes, Order No. 3T900; \$48.00 with records, Order No 3T800. Items in the kit may be purchased separately: \$8.00 per filmstrip; \$7.00 per cassette; \$5.00 per record; \$6.00 per set of task cards.
BFA Educational Media
2211 Michigan Avenue
Santa Monica, CA 90404

Filmstrips entitled: "The Meaning of Metric," "Measuring Length," "Unit of Volume and Mass," introduce commonly used metric units and show interrelationship of units. Final filmstrip covers advantages and disadvantages of metric system. Activity cards provide practice with metric measurement.

Introducing the Metric System. 1969, 68 p., paper, \$1.50, (Class set of 25 copies, \$30.00)
Coronet Learning Programs
Coronet Films, 65 East South Water Street
Chicago, IL 60601

Field tested programmed textbook.

Jones, Philip G. "Metrics: Schools Will Be Teaching It and You'll Be Living It - Very, Very Soon," The Education Digest, Nov. 1973.

Kelly, Gerard W. Metric System Simplified. 1974, 80 p. \$3.95.
Sterling Publishing Company, Inc.
419 Park Avenue South
New York, NY 10016

Emphasizes everyday use of metrics in kitchen, on cars, and in sports.

Kempf, Albert and Thomas Richards, Exploring the Metric System. 1973, 48 p.,
\$.48 plus shipping, paper
Laidlaw Brothers Publishers
A Division of Doubleday
Thatcher and Madison
River Forest, IL 60305

Workbook for levels 4-6. Exercises on length, perimeter, area, volume, capacity, and mass (weight). Self-administered tests with answers.
Code #1411.

Kempf, Albert F. and Thomas J. Richards, Using the Metric System. 1973, 64 p.
\$.51 plus shipping Code #1412.
Laidlaw Brothers
A Division of Doubleday, Thatcher and Madison
River Forest, IL 60305

Senior high student workbook with word problems, measurement exercises, and conversion.

Kim, Margaret and Hedy Knauer. Metricook. Los Angeles: Gallery Books, 1974,
\$2.95.

Leake, Chauncey D. "Standards of Measurement and Nursery Rhymes," Journal of Home Economics, Vol. 59, No. 2 (Feb. 1967), pp. 116-123.

"Learning How To Use the Metric System," Chevrolet Motor Division General Motors Corporation, 1974.

Massey, Opal. Metrics for Home Use. 1974, 32 p. \$2.50, paper
Willow House Publishers
P. O. Box 129
Stockton, CA 95201

Cherrington-Fearon-Massey Series of Six Metric Books, Book 4: Homemaking.
Complete series of 6 books is available for \$12.00
Workbook in homemaking with questions and activities. Individualized topics include: introduction, home cooking, calories, shopping, cooking utensils, appliances, sewing, fabrics and patterns, furniture, recipes, rules for SI units and decimal multiples and submultiples, area, and volume.

McCully, Helen. "The Metric System. . . plus a Collection of International Recipes," House Beautiful, Jan. 1973, 115 (1), pp. 82-85, 90-92.

McKinley, Clarence P. The Metric System: A Method for Teaching, 1973, 15 p.
\$2.00, paper
Clarence P. McKinley
Wicomico County Board of Education, Long Avenue
Salisbury, MD 21801

Uses five major concepts in teaching the metric system: the U.S. monetary system is based on a decimal system; advantages of metric measurement; simplicity of metric measurement involving structured system of prefixes attached to basic units of length, mass, and volume; need for transitional conversion skills; metric temperature measurement. Includes problems, exercises and hints.

Measurement and the Metric System Science Packet. 2 conversion cards (6.5 x 9.5 cm, 9 x 29 cm); 1 reference card \$3.00, plus \$.50 for postage and handling
Item No. (479-14280)

National Science Teachers Association
1742 Connecticut Avenue, NW
Washington, DC 20009

Kit include 30 cm rulers (2) cm graph paper (2 sheets), decimeter cube and brochure and other instructional aids with activities from many sources. Teacher's Guide includes three lesson plans for package items, section on why metric, and resource list. Module by Xerox contains: objectives, instructional procedures, activities, evaluation, and competency measures for activities.

Measurement With Metric. A Resource Handbook. 1974, 4 p, free, paper

Oregon State Department of Education
942 Lancaster Drive, NE
Salem, OR 97310

Includes rationale for metric education, activities for diagnosis of pre-measurement skills, instructor's guide for planning and conducting workshops, materials for program implementation, and bibliography. "Think Metric" and hands-on strategies employed.

Mechtly, E. A. The International System of Units (SI). Washington, DC: NASA, SP-7012, 1969

Merry Metric. (Game), 1974, \$3.50, Order No. 4129, Gameboard and scoresheets.

Creative Teaching Associates
P. O. Box 293
Fresno, CA 93708

Game that reinforces the meanings of the prefixes kilo-, hecto-, deka-, deci-, centi-, and milli-, and their relationship to metres, litres, and grams.

Meter-Liter-Gram. (Game), Playing Board (39.5 x 46 cm); 10 tokens; 2 dice; examination cards; chance cards; Instruction Book (23 p.), \$9.00

Order No. MG-2
Real-T-Facts
Division of Realty Facts Company
26 Overlook Drive, P. O. Drawer 449
Warwick, NY 10990

Game pieces are cubic centimetres which players advance in response to questions on metric units, symbols, terminology, unit relationships and metric arithmetic. Designed for 2-10 players. Classroom tested. (8 to adult)

Meters, Liters and Kilograms, or How To Weigh Water With a Stick. Metrication Institute of America, Northfield, IL, 1974, 23 min., 16mm, sound, color \$310.

Metrication Institute of America
A Division of Perennial Education, Inc.
P. O. Box 236
Northfield, IL 60093

An introduction to the metric system series: four films available for \$650.00 Both introduction and summary of the content presented in series films "The Meter," "The Liter," and "The Kilogram." Inter-relationship between units is described and extensively illustrated.

"Metric-Cookery Adventures," Recipe Cards

Reid Tool Supply Company
Western Michigan's Metric Center
2233 Temple Street
Mushegan Heights, MI 49444

229

Metri-Kit. \$18.95

Swani Publishing Company
Box 248
Roscoe, IL 61703

Kit of metric training aids developed by Regal Beloit includes set of wall posters, measuring devices, converter; publications: "Preparing Now for a Metric Future," "A Metric America," "USA Goes Metric," and "Discover Why Metrics."

A Metric America Series. (Multimedia Kit), \$120.00 with cassettes, No F1251;
\$90.00 with records, No. F1250

Aims Instructional Media Services, Inc.
P. O. Box 1010
Hollywood, CA 90028

Six sound filmstrips covering principle features of metric system stress decimal relationship between units. Prefixes used with each base explained. Study guide included (Jr. High to adult level).

A Metric America (film), 1973, 16 min., 16mm, color, sound, \$230.00, Order #9345

Aims Instructional Media Services, Inc.
P. O. Box 1010
Hollywood, CA 90028

Animated presentation of the metric system and its advantages. Decimal nature of the metric system is repeatedly stressed. (JR. High to adult)

Metric Match-Ups. Teacher's Guide for Cooking With Metrics. (multimedia kit) \$7.00

Corning Glass Works
Product Information Department
Houghton Park E-1,

Corning, NY 14830

Teacher's lit for secondary homemaking classes. Includes 2 measuring cups 2 wall charts illustrating weight, temperature, volume, and length, teacher's manual with learning activities, 4 overhead transparencies comparing SI and customary system, and 6 spirit masters with recipe suggestions, metric exercises, basic units, and conversions.

Metric Measurement: Activities in Linear Measurement. 1974, 36 p., \$3.95, paper
3-hole punched

The Math Group, Inc.
5625 Girard Avenue South
Minneapolis, MN 55419

Illustrated student activity sheets for making ditto or mimeograph masters. Teacher's guide provides objectives and answers. "Think Metric" strategy.

Metric Posters. 1974, \$5.00, Order No. 61000

Creative Publications
P. O. Box 10328
Palo Alto, CA 94303

Four colorful posters. It's a Metric World shows nations using metric system; Think Metric shows ease of conversion from one metric unit to another; World Records in metric History of Metric System illustrates how metric system fit in the development of measurement in the western world.

Metric Sampler Kit, \$9.00 plus tax

Union Carbide Educational Aids Department
Box 363
Tuxedo, NY 10987

Includes 3 conversion slides, meter tape, 2 wall charts, and 500 ml measuring cup with experiments.

"Metric Study Conference - Consumer Affairs," Journal of Home Economics, May 1971, 63 (5), 345-349.

The Metric System. 1974, 95 p., paper, Student edition #1513, \$1.50.

Teacher edition #1514, \$2.10
Addison-Wesley Publishing Company
School Division National Headquarters
2725 Sand Hill Road,
Menlo Park, CA 94025

Student workbook for introducing the metric system and developing measuring skills through hands-on activities. Teacher's edition includes process and behavior objectives, teaching suggestions, answers, and information about resources.

Metric System - Parts 1 and 2. 16mm film, color, sound, \$150.00 each.

A/V Instruction Systems
P. O. Box 191
Somers, CN 06071

The Metric System and SI Measurements and Systems of Units. Skokie, IL: Sargent-Welch Scientific Co., 1974.

Metrication. (Game), 1973,
Addison-Wesley Publishing Company
School Division National Headquarters
2725 Sand Hill Road
Menlo Park, Ca 94025

Board game for two to four players, ages ten through adult. Metric prefixes appear on metric money. Players attempt to collect at least ten of each type of metric bill. Playing time approximately 1 hour and 20 minutes.

Metrication Masters. 1974, 50 p., \$19.98

Holt, Rinehart and Winston, Inc.
383 Madison Avenue
New York, NY 10017

Non-graded duplicating masters on the metric system. Guided discovery approach.

"Metrics," a special issue of School Shop., April 1974.

"Metrics in the Kitchen," University Bulletin Room, University of Minnesota, St. Paul, MN 55108. Leaflet on thinking metric.

Metricube. Item #A1, \$5.95

Polymetric Services, Inc.
18324 Oxnard Street
Tarzana, CA 91356

One litre volume cardboard cube with six 100cm² surfaces and edges 100mm in length. Moving parts compare U.S. customary system and SI. Built in calculators convert weights and lengths. Defines seven basic SI units.

Miller, Byron S. and Henry B. Trimbo. "Use of Metric Measurements in Food Preparation," Journal of Home Economics, Feb. 1972, 64 (2), 20-25.

Miller, David Monroe, Understanding the Metric System. A Programmed Approach 1973, 74 p., \$2.00, paper Order No. 563715
Allyn and Bacon, Inc.
470 Atlantic Avenue
Boston, MA 02210

Field tested program text for individualized instruction. 345 frames requiring an active response.

Miller, Mary and Toni Richardson. Making Metric Maneuvers, Hayward, CA: Activity Resources Company, Inc., 1974, 106 p., resource guide.

Miller, Mary and Toni Richardson. Merry Metric Cookbook., Hayward, CA: Activity Resources Company, Inc., 1974, \$3.00

Mills, Nancy, "The Metric Revolution," Forecast for Home Economics, Dec. 1969, F 28, 38.

Moving Toward Metric, Kit
Educational Relations
J. C. Penney Company, Inc.
1301 Avenue of the Americas
New York, NY 10019

Kit designed to help consumers accept and understand the basics of metric system. Contents include: learning experiences with the metre, Celsius scale and the kilogram, visuals and aids for understanding metric units, and information on metrics progressing from the simple to the complex. Available also "The Metric Song," 6 min. filmstrip/cassette.

Oppert, Judy. "The Home Economics Teacher and Metrics,"
Illinois Teacher of Home Economics
351 Education Building
University of Illinois
Urbana, IL 61801

Series of 8 journal lessons on learning and teaching metrics published in Illinois Teacher of Home Economics, v8, n2-5, 1974-75, \$7.50 for annual subscription; \$5.00 for students. \$1.75 per single issue. Includes history and trends, length, area, volume, mass, temperature, applications to consumer and home economics subject areas, guidelines and suggested practices for teaching. Objectives self-study, activity-based, lesson evaluations with answers. Pre- and post-tests to be evaluated by correspondence instructor.

"Opportunity to Learn Metrics," The Illinois Teacher of Home Economics, Vol. XVIII, No. 2, Nov./Dec. 1974, pp. 94-125.

Orf, Earl and Diana Hestwood. Metric Measurement: Activities in Capacity, Mass and Temperature, 1974, 36 p. \$3.95, 3 hole-punched paper.
The Math Group, Inc.
5625 Girard Avenue South
Minneapolis, MN 55419

Teacher's guide. Illustrated mimeograph master activity sheets for students and pencil and paper activities on measuring, puzzles, and filling in blanks.
"Think metric" strategy.

- Page, Chester H. and Paul Vigoureux. The International System of Units (SI) 42 p., 1972 edition, \$.30, SD Catalog No. C13.10:330/2, NBS Special Publication 330
Superintendent of Documents
U.S. Government Printing Office
Washington, DC 20402
Defines modernized metric system (SI).
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- Parsons, Elaine Baldwin. "Introducing the Metric System to Your Classroom", Illinois Teacher, May/June 1975: 318-330; Sept./Oct. 1975: 46-52; Nov./Dec. 1975: 111-114.
- Patterson, Joyce, "Think Metric to Meet the Challenge," Forecast for Home Economics, Sept. 1972: F-120-124.
- Perry, H. A. "Inching Toward the Metric System," The American Legion Magazine 1972.
- Ploutz, Paul F. The Metric System: A Programmed Approach. 1972, 122 p., \$2.95 paper, Order No. 9057
Charles E. Merrill Publishing Company
1300 Alum Creek Drive
Columbus, OH 43216
Programmed instruction workbook with answer key.
- Powell, Marcia. "Metrication and Food Preparation," What's New in Home Economics Oct. 1974, p. 49.
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- Purchase, M. E. "Metric Measures: Their Use in the United States and in the Home," Home Economics Research Journal, Dec., 1972, 1 (2), 133-135.
- Reid, Jane Meldrum. Metric: In Everyday Use. Peoria, IL: Charles A. Bennett Co., Inc., 1975, \$2.50
- "Report of the National Metric Study Conference - Consumer Affairs," Journal of Home Economics, May 1971, 63 (5), 345-349.
- Richardson, Toni and Mary Miller. Metric Maneuvers, Hayward, CA: Activity Resources Co., for grades 2-7, \$5.00
- Ritchie-Calder, Loard, "Conversion to the Metric System," Scientific American, Vol. 223, July 1970, 17-25.
- Robenson, B. L. Education, National Bureau of Standards Publications, 345-346, July 1971.

Rothrock, Bruce D., ed. The Consumer. U.S. Metric Study Interim Report. National Bureau of Standards, 1971, 139 p., \$1.25, paper SD Catalog No. C13.10:345-7

Superintendent of Documents
U.S. Government Printing Office
Washington, DC 20402

U. S. Metric Substudy Reports, NBS SP3457, presents information on consumers' knowledge of metric system, attitudes and opinions regarding metrification in the U.S., and effects of worldwide metric usage on selected areas of consumer concern. Papers by experts on areas of consumer interest.

Schlessinger, Phyllis E. and Barbara M. Kennedy, "Metric Measurements in Food Preparation," Journal of Home Economics, Vol. 59, No. 2, Feb. 1967, pp. 116-119 or 120-123.

Sheffield, Susan G. "The Meter Stick," Science and Children, 1973, 10 (6), 22-24

Smith, R. W. The Federal Basis for Weights and Measures. NBS Circular 398, 1958.

Some References on Metric Information. National Bureau of Standards, Publication 389, Dec. 1973, \$.25, SD Catalog No. C13.10:389.

Think Metric (Kit) 1973, \$.50
The Ohio State University
Cooperative Extension Service
1787 Neil Avenue
Columbus, OH 43210

Packet of basic materials for consumers and homemakers. Leader's guide with objectives, lesson outline, activities and problems.

Trueblood, Cecil R. Metric Measurement - Activities and Bulletin Boards, Danville, NY: The Instructor Publications, 1973.

Turner, Rufus P. Metrics for the Millions 1974, 96 p., \$3.50, paper
Howard W. Sams & Company, Inc.
A Subsidiary of ITT
4300 West 62nd Street
Indianapolis, IN 46268

Contains practice exercises with answers.

Understanding the Metric System. (Series 296)
Associated Educational Materials
Glenwood at Hillsboro Street
Raleigh, NC
6 cassettes, student worksheets, mastery tests. \$42.50

Vervoort, Gerardus, "Inching Our Way Toward the Metric System," The Mathematics Teacher, 1973, 66 (4), 297-302.

Wall Chart of the Modernized Metric System. National Bureau of Standards, Publication 304, 1972, \$.55, (SD Catalog No. C13.10:304)

Wallach, Paul. Think Metric, 1974, \$80.00 Order No. MET000

DCA Educational Products
424 Valley Road
Warrington, PA 18976

Twenty multi-color transparencies and 18 overlays. Group I, "Metric Units" includes English units, basic SI units and prefixes; Group II "Conversion Factors," for inches, pounds, and kilometres; Group III "Estimating Weights and Measures," shows common objects with alternate overlays in customary or metric units. Teacher's guide with objectives, script, and activities.

Warning, Margaret. "Start Now To Think Metric," Journal of Home Economics, Dec. 1972, 64 (9), 18-21.

West, Tommie A. "Teaching Metrics to Beginners," Today's Education, Nov/Dec. 1974, pp. 80-82.

What About Metric? Metric in Everyday Use, (26 x 60 cm chart), 1973, Color, printed both sides, Free, CIS-7 Insert
Metric Information Office
National Bureau of Standards
Washington, DC 20234

Three page consumer and homemaking fold-out chart using "Think Metric" illustrations for mass, length, volume and temperature.

What Everyone Should Know About Measurement. 1966, 13 p. \$1.00, paper
Channing L. Bete Company, Inc.
45 Federal Street
Greenfield, MA 01301

Illustrated booklet of measurement.

White, Rose V. "Some Technological Aspects of Metric Conversion - Effects on Consumer and Consumer Products," A Speech at the 63rd Annual Meeting of the American Home Economics Association, June 29, 1972.

Willens, Michele. "U.S. Moving, Inch by 2.54 cm, to Metric System," Mainliner United Airlines Magazine, 1973.

Willert, F. Metric Measurement Manual. Teacher edition \$2.50, 97 p. Student edition \$1.50, 1973
Pauper Press
Box 303
Two Rivers, WI 54214

Witte, Carol and Betty Long. Fun With Metric Measurement, Manhattan Beach CA: Teachers, 1973, \$5.00

Worshtil, Diana et. al. Think Metric: Adapting to the Metric System. 42 p. \$1.00, paper, spiral-bound
Toledo Public Schools
Manhattan & Elm
Toledo, OH 43608
Teacher's guide with activities.

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ABSTRACT

This comparative study was conducted for the Wisconsin Advisory Council on Vocational Education in an effort to identify strengths and weaknesses of program delivery and accomplishments of several States--Illinois, Indiana, Iowa, Michigan, Minnesota, and Ohio--with a view towards making recommendations that would improve Wisconsin's total program approach and delivery. Methodology involved gathering, compiling, and analyzing data from Federal report forms, and from interviews and information gathered from the appropriate State departments. Some of the major goals accomplished by the study were the identification of the clientele and the degree to which they are served by vocational education and placed on jobs in each State; the determination of expenditures for vocational education and the sources of these funds; the identification of State and local structures that accomplish the delivery of vocational education in each State; and the determination of programs and procedures for vocational education personnel development and ways in which vocational education is reaching those in need. Fourteen council recommendations precede the description and discussion of the study, which is presented in six chapters: (1) Background of the Study, (2) Vocational Education Student Enrollments and Placement--Follow-up Activities, (3) Funding For Vocational Education in the Midwest, (4) State and Local Structures Effecting Vocational Education Delivery, (5) Career Education, and (6) Teachers, Teacher Education, and Certification. The appendixes include 40 items about each State's organizational and administrative functions, educational delivery systems, and teacher certification requirements. (HD)

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AN ASSESSMENT OF VOCATIONAL EDUCATION
IN
WISCONSIN - 1976

By
Marion E. Franken, Project Associate
Joan Earnhart, Project Associate

Conducted
for
The Wisconsin Advisory Council on Vocational Education

Wisconsin Vocational Studies Center
University of Wisconsin-Madison
Madison, Wisconsin

U.S. DEPARTMENT OF HEALTH,
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INTRODUCTION

The Wisconsin Advisory Council on Vocational Education, created under the 1968 Vocational Education Amendments and appointed by the Governor of the State of Wisconsin, is required by Federal statute to evaluate vocational education programs, services and activities in Wisconsin and to prepare and submit to the U.S. Commissioner of Education and to the National Advisory Council on Vocational Education through the Wisconsin Board of Vocational, Technical and Adult Education an annual evaluation report. This year, 1976, marks the seventh year that the Wisconsin Advisory Council on Vocational Education has met this objective. The method of evaluation utilized by the Council in the 1976 annual evaluation report is that of comparison, comparing Wisconsin's program of vocational education to each of its neighboring states; namely, Illinois, Indiana, Iowa, Michigan, Minnesota and Ohio. The Advisory Council contracted with the Wisconsin Vocational Studies Center of the University of Wisconsin-Madison to compile the facts and figures and data presented in this report. Information compiled represents the best data available, data secured from Federal report forms and also secured from interviews and information gathered from the appropriate State Departments. This information represents that which was gathered during the Spring of 1976. It represents a moment of time upon which the Wisconsin Advisory Council on Vocational Education draws conclusions, implications, and recommendations to improve vocational education in the State of Wisconsin.

The interest of the Wisconsin Advisory Council in this comparative study was to identify strengths and weaknesses of program delivery and accomplishments of the several states with a view towards making recommendations that would improve Wisconsin's total program approach and delivery. The Council also recognized that such a study could and would reveal Wisconsin's successful practices so that these strengths could be built upon and the citizens of the State could realize a better quality program through the expansion of these successful delivery practices.

The actual goals that were accomplished by this study were: the identification of the clientele and the degree to which they are served by vocational education and placed on jobs in each state; the determination of expenditures for vocational education and the sources of these funds; the identification of state and local structures that accomplish the delivery of vocational education in each state; the identification of roles of various educational institutions in each state as they relate to vocational education delivery; the determination of the emphasis placed on career education from kindergarten through the adult level of instruction; the identification of relevant demographic and economic indicators that express the vitality of each state; and the determination of programs and procedures for vocational education personnel development and ways in which vocational education is reaching those in need.

The Wisconsin Advisory Council on Vocational Education is indeed grateful to Merle E. Strong, Director of the Wisconsin Vocational Studies Center at the University of Wisconsin-Madison, who had primary responsibility for the overall direction of the project. Appreciation is also

expressed to the study staff, Marion E. Franken, who took major responsibility for the compiling and writing of the final report; to Joan Earnhart, who carried out a part of the initial data collection and to the staff of secretaries at the Center who did the necessary typing and other work associated with the study. These researchers join with the Wisconsin Advisory Council on Vocational Education in also expressing gratitude to those members of the State Advisory Councils in the participating states who cooperated with this study and sent the researchers informative materials; the State Directors of Vocational Education who generously gave of their time for purposes of interviews and who responded positively by releasing material to the researchers; and the State Vocational Education staff members who patiently explained their parts in the delivery of vocational education and provided the desired information through interviews and printed materials.

When the data and information were compiled and the study subsequently completed, the Wisconsin Advisory Council on Vocational Education spent considerable time and effort in reviewing the data and developing recommendations for future vocational education development in the State of Wisconsin. Before presenting its recommendations for 1976, the Council wishes to cite two special instances where commendations should be voiced. One instance is to the local property owner who supports post secondary and adult vocational education programs in the State of Wisconsin unparalleled to the other states included in this study. The strong system of post secondary and adult vocational education has survived and indeed flourished because of the resources and input secured from the local level. A second commendation is directed to the Wisconsin Board of Vocational, Technical and Adult Education for the strong teacher certification standards presently in effect for Wisconsin's post secondary vocational education programs. Wisconsin can be justifiably proud of these teacher certification standards and optimistic that the enforcement of these standards will continue to ensure quality vocational education delivery in Wisconsin.

The recommendations of the Wisconsin Advisory Council on Vocational Education which now follow are not intended to detract from the efforts nor the effectiveness of either the Wisconsin Board of Vocational, Technical and Adult Education or the Department of Public Instruction. Both of these State educational agencies are to be commended for the progress made in delivering vocational education programs and services during the last number of years. The Wisconsin Advisory Council on Vocational Education offers in random order the following recommendations cognizant of the fact that quality program development demands continuous evaluation and monitoring.

Recommendation I

That consideration be given by the Department of Public Instruction to establishing regional planning districts for secondary vocational education, which districts would include a population base of sufficient size to deliver adequate and appropriate vocational education programs on the secondary level.

Statement: All other states included in the study have instituted guidelines and/or legislation to enable school districts jointly to at least plan for, if not deliver, vocational education at the high school level. While some joint planning and indeed some joint delivery systems are currently in operation in Wisconsin, it can be described as sparse at best. It would seem the appropriate time to formalize joint planning efforts for the delivery of secondary vocational education, perhaps utilizing existing CESA boundaries or VTAE district boundaries.

Recommendation 2

That the State Board of Vocational, Technical and Adult Education take a more active role in the development of policy and guidelines for vocational education in Wisconsin's high schools.

Statement: Since 1968, the responsibility for administration of the secondary vocational education program in Wisconsin has been delegated to the Department of Public Instruction by the State Board. Forty per cent of Federal VEA dollars has accompanied this delegation. Personnel within DPI have done a commendable job in carrying out this task yet, because of the State Board's ultimate responsibility for dispersing Federal VEA funds and its additional responsibility as the sole state agency submitting the State Plan, it is the perception of the Council that the State Board should take a more active role in determining policy for future program development for vocational education on the high school level in Wisconsin. The intent of this resolution in no way diminishes the role of the DPI in administering the high school programs nor precludes this activity in the future.

Recommendation 3

That the State Board and the Department of Public Instruction devise means to achieve more equal representation of the sexes in vocational education training programs.

Statement: While women constitute 47.4% of the enrollments in vocational education programs in Wisconsin for FY1975, they are underrepresented in the areas of agriculture, trade and industry and technical occupations while men are underrepresented in the more traditional women's programs such as health, office occupations, consumer and homemaking and occupational home economics. With the special emphasis that new Federal legislation is mandating in reducing sex discrimination in job training, the Council calls upon all involved to again make Wisconsin a leader as it relates to reducing sex bias on job training programs.

Recommendation 4

That the current proportion of secondary school students enrolled in vocational education programs in Wisconsin be increased.

Statement: For FY1975, 37.8% of Wisconsin's high school students grades 9-12 were enrolled in vocational education programs. While this percentage of enrollments ranked about average compared to the other six states in the Midwest region, it is the perception of the Council that more students should avail themselves of vocational education opportunities on the high school level. A mix of more secondary level vocational education program offerings, better counseling services and increased cooperative planning with the post secondary institutions will help achieve this goal.

Recommendation 5

That greater State and local resources be funneled into vocational education programs at the secondary level in Wisconsin.

Statement: In comparison to other neighboring states, Wisconsin is deficient in its reported State and local financial contribution for secondary vocational education to its neighboring states. In FY1975, for example, Minnesota reportedly expended from State and local resources approximately \$273 per secondary vocational education enrollee, Michigan approximately \$822 per secondary vocational education enrollee, while Wisconsin reportedly expended \$39 from State and local resources per secondary vocational education enrollee. The Federal VEA monies have had a significant impact on high school vocational education programs in Wisconsin. It's shocking that State and local resources are at such a minimal level.

Recommendation 6

That both State Departments responsible for the administration of vocational education in Wisconsin continue to attract increased enrollments of minority groups into quality vocational education programs.

Statement: It is reassuring to discover that minority group representation in vocational education enrollments is at about the same percentage of the minority population as a whole in Wisconsin. This has been attained by the active recruitment of members of minority groups into vocational education programs. The apparent successes achieved in this area, however, should in no way detract from the resources necessary to continue pursuing increased minority enrollment in vocational education.

Recommendation 7

That the State Board and the Department of Public Instruction take a leadership role toward involving more disadvantaged persons statewide in public and private vocational education programming.

Statement: The overall record of just 6.4% of all vocational education enrollments reported as disadvantaged distresses the membership of the Advisory Council. Congress has made the disadvantaged a special target group of vocational education by requiring 15% of the Federal dollars to be spent on services to these people, raising that percentage to 20% in FY1978. In coordination with other Federal and state programs such as CETA, additional state resources at the secondary level and local resources at the post secondary level must be identified to involve more disadvantaged in vocational education in Wisconsin.

Recommendation 8

That the State Board and the Department of Public Instruction make an increased effort to meet the needs of handicapped citizens in the State of Wisconsin.

Statement: Data gathered for inclusion in this study indicate that 6,939 handicapped persons were enrolled in vocational education in Wisconsin at the secondary, post secondary and adult levels for FY1975 or approximately 2% of the total vocational education enrollments consisted of handicapped persons. This percentage compared favorably with Wisconsin's neighboring states. On the other hand, however, the 1975-79 State Plan for Vocational Education in Wisconsin identifies the fact that 214,400 handicapped persons resided in the State of Wisconsin in 1975. The percentage of handicapped persons served in vocational education programs compared to the population of handicapped persons in Wisconsin is disturbingly inadequate.

Recommendation 9

That the Bureau for Career and Manpower Development within the Department of Public Instruction be accorded divisional status and be directed by an Assistant Superintendent of Public Instruction.

Statement: Organizational structures vary widely in the states represented in this report, yet, it is apparent to the advisory Council that the section within DPI responsible for the administration of vocational education should be elevated to a position equal to the

Division for Handicapped Services and the Division for Library Services. While this organizational change would move the present Bureau out of the Division for Instructional Services and remove it somewhat from companion Bureaus within that Division, nevertheless divisional status would afford closer communication with the Chief State School Officer and other Divisions while enhancing the already existing articulation activities with the other Bureaus.

Recommendation 10

That each VTAE district and each K-12 school district offering vocational education or some combination thereof assume greater responsibility for the orientation of new instructors to their respective systems and for the continued upgrading of their existing staff's competencies.

Statement: Any educational environment exists for the benefit and betterment of the student. The most important interaction in any educational setting is between that student and the instructional staff personnel. It is therefore imperative that instructional personnel are best possibly prepared to enter into that student-teacher interaction. The Advisory Council suggests that each and every local educational agency, be it a VTAE district or a K-12 school district, accept the further professional development of its instructional personnel as one of its highest priorities. One technique that has experienced some mutually rewarding benefits is the strategy of exchanging an instructional staff person from a subject area with an employee from a corresponding industry or business.

Recommendation 11

That the State Board, in conjunction with the State Superintendent and staff at the Department of Public Instruction, review the certification standards of vocational education high school teachers.

Statement: In comparison to certification requirements of high school vocational education instructors in other states, especially as it relates to occupational competence, Wisconsin's high school certification standards are different from those in other states. In keeping with a previous Council recommendation requesting the State Board to take a more active policy role in secondary vocational education, the Council feels teacher certification is one area the State Board might assume more leadership, especially in the light of the fine certification standards promulgated for post secondary instructors.

Recommendation 12

That the State Superintendent of Public Instruction review the administrative rules currently in effect relative to the five-year professional development approval of vocational education teachers in order to rule that such approval not be considered a recertification necessitating the payment of a fee.

Statement: Certification on the secondary level for vocational education teachers currently requires renewal of the license every five years, at which time a fee of \$20.00 is charged for that renewal. The Advisory Council many times in the past has gone on record supporting the professional development of vocational education instructors. However, the requirement of a \$20.00 fee every five years for vocational education teachers seems somewhat unequitable compared to other teachers.

Recommendation 13

That both the State Board and the Department of Public Instruction support the Wisconsin Career Education Model and solicit the allocation of more State and local resources for continued implementation of the model.

Statement: Wisconsin's Career Education Model is sound, incorporating relevant concepts of basis education which should be promoted more actively by both State Departments. The past four years have seen great progress in this area disproportionate to the low amount of State and local resources dedicated to this effort. Rather than a concept supported mostly by Federal leadership and the Federal dollar, the concept will only come to real fruition when there is more active support on the State and local levels.

Recommendation 14

That more effort be exerted to improve the quality of information received in follow-up studies of post secondary vocational education students.

Statement: For FY1974, the status of 28.2% of the post secondary program completers after training was unknown. Only one other state neighboring Wisconsin had a worse record; all the other neighboring states had considerably better records. While the follow-up statistics for 72.8% of completers whose status was known, these statistics are indeed clouded by the fact that there were so many for whom information was not available.

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CHAPTER I

BACKGROUND OF THE STUDY

Brief descriptive data is provided on each of the seven states considered in this study, namely: Illinois, Indiana, Iowa, Michigan, Minnesota, Ohio and Wisconsin, as background for understanding the content of the educational setting.

Description of the States

Important to the vitality and progress of a state is its size, chorography, population distribution and the kinds of people who make up the population as they create the vitality within their state. A description of these characteristics follows for each of the seven states considered in this study.

Illinois

The area of Illinois is 560,400 square miles. The terrain consists of flat rather monotonous prairies which are drained by more than 500 streams emptying into either the Mississippi or St. Lawrence River systems, the latter through Lake Michigan.

Sixty-three percent of Illinois population is crowded into the Chicago Metropolitan area. The largest percent of those remaining live in what is termed "downstate". The rich black soil of the central and northern areas of Illinois are unusually rich contributing to a quality of agriculture which is among the finest in the world. The soil of the southern third of the state is less suited for farming.

Illinois can be separated into three regions that differ markedly in their economic and social characteristics. The northern third of the state consists of a highly urbanized band with extensive farming areas between, reaching across the state in the north from Chicago to the Rock Island-Moline complex on the Mississippi and includes the counties of Kankakee, Joliet and Rockford. The central third of the state is a highly developed agricultural area. Some cities like Peoria support large industries such as farm machinery and construction equipment. Other parts are institution centered as is the state government complex in Springfield and Champaign, and Urbana where the University of Illinois is located. However, the character of the people in this region remain rural and small town with a highly developed sense of tradition and history. This area is losing people with the exception of the Bloomington-Normal area which is the site of two large universities. The southern third of Illinois has unique features such as coal mines, oil wells, and the Shawnee National Forest which covers parts of ten counties. This region is considered southern-mountain

in character and the pace of living is slightly slower because of less cities and a somewhat depressed economy. Rapidly growing, Southern Illinois University in Carbondale has provided this region with considerable economic and culture stimulation.

After the French and Indian War when most of the French population had left Illinois they were replaced by colonists of the Anglo-Saxon stock from Virginia, Tennessee, Kentucky and the New England area. In the 1840's large numbers of Germans and Irish settled in northern Illinois and from the 1880's to 1917 immigrants came from Poland, Hungary, Italy, Norway, Sweden, Austria, and Russia. More recent immigrants particularly to the Chicago area came from Greece, Persia, Poland, Spain and Czechoslovakia. Smaller stable communities of Japanese, Chinese, Filipino, Puerto Rican and Mexican people also made their home in Chicago. By 1870, Negroes numbered 28,000. By 1910 migrant blacks had settled in southern counties and totaled 110,000. After World War I there was a steady influx of blacks into major industrial centers so that by 1970 there were more than 1,400,000 blacks in Illinois making up some 13% of the states population, almost all of them living in the Chicago area. Also searching for the higher paying employment opportunities were whites from the poverty stricken areas of Appalachia, American Indians and Puerto Ricans.

The religious diversity in Illinois is reflected in the various origins of the people. The Roman Catholic archdiocese of Chicago is the worlds largest in membership. Other religions are represented by scores of Eastern Orthodox, Protestant churches and Jewish synagogues.

The 1970 census revealed population characteristics similar to that of the nation as a whole. Briefly, the state grew by approximately 10% in the last decade; cities lost whites to suburban areas; numbers and percentages of blacks within cities increased; young people migrated from rural areas and small towns contributing in the loss of populations in those sections. More whites left Illinois in the 1960's than moved in. The immigration of blacks did not offset the trend toward net loss population by migration. The expected population of Illinois in 1980 is 12 million people. About 1/2 are expected to be living in suburban areas and only 1/4 in central cities.

Indiana

Of all the northern states Indiana is considered to be the most southern in character. This is a reflection of the early settlement of the region by immigrants from the southern hills who carried the institution of slavery with them. Indiana covers 36,291 square miles. Except for Hawaii it is the smallest state west of the Appalachian mountains. The 1970 census reported a population of 5,193,696, seven percent of which were of black decent. Sixty-five percent of the total population live in urban areas.

The northern half of Indiana lies in the mainstream of the main industrial belt reaching from Pennsylvania and New York state toward Chicago, Illinois.

Although it is considered basically a manufacturing state because

of its northern region, the southern portion of the state contributes a central plain with an extremely fertile agricultural belt with large farms. The terrain of the land is essentially rolling with the highest elevation being 1200 feet.

The three major regions of Indiana can be considered the flat northern regions which supports industry and truck gardening; the fertile central plains and the large southern region which is forested and less fertile than the central region which is a sight of caves and limestone quarries. These quarries supply some eighty percent of the nation's need for limestone. Indianapolis and South Bend and northwestern lake country have significant black population reaching over fifty percent in the Gary area and around twenty-five percent in East Chicago. The largest ethnic group in the South Bend area is the Polish, followed by the Hungarian, Belgium, Italian and Mexican groups. A few Amish are found in the northeast portion of the state around the cities of Middlebury, Nappanee and Goshen. A few Mennonites are also found in this area.

Considerably above the national average is the percent of Protestants found in Indiana which is seventy percent. Catholics make up less than fifteen percent of the total state population. Jews comprise one percent and live exclusively in urban centers. In the decade from 1960 to 1970 Indiana experienced an eleven percent growth caused entirely by excess birth over death. Emigration exceeded immigration by about 66,000. Marriage and divorce rates were found to be above the national average. The majority of people live in 42 cities with populations between 10,000 and 100,000. Twenty percent of the people are concentrated in the Indianapolis area, another twelve percent are found in the Gary-Hammond -East Chicago complexes. As the rest of the nation, central cities are being deserted for the suburbs throughout the state. Of the fifteen counties which lost population, ten were in the south which suggests a continued south to north migration.

Iowa

The gently rolling terrain of Iowa stretches from the Mississippi which borders the state on the east forming a bridge between the forests of the east and the grasslands of the high prairies to the west. It is bounded on the north by Minnesota and on the east by Wisconsin and Illinois and on the south by Missouri: on the west by Nebraska and South Dakota. The total area of the state is 56,290 square miles which supports a population of 2,824,376 as of the 1970 census.

Inhabitants of Iowa are rather evenly disbursed. Concentrations of people are in the Des Moines area which has just over 200,000 citizens; Sioux City (86,000) and Council Bluffs (60,000) are the large population centers in the western part of the state. Cedar Rapids (111,000) and Waterloo (76,000) are in the east as are the Mississippi cities of Davenport (98,000) and Bettendorf (22,000) which with Rock Island and Moline, Ill. comprise a quad city complex. The remainder of the population of Iowa are scattered rather evenly in small towns or in disbursed farmsteads. the greatest resource Iowa has is that 95% of its land is cultivable. It is a major bread basket of the U.S. and of the world ranking second only to California in combined

agricultural output. The major crop is corn and the major livestock animal is the hog. Industry in the state is directly related to the farming sector of the economy so that the population is somewhat equally divided between rural and urban areas.

Originally Iowa was settled by people migrating from states directly to the east and from northwestern Europe. The most numerous group came from Germany but Britain and Ireland were well represented. In the latter years of the 19th Century, Scandinavians settled in large proportions in the western and central parts of the state. In the early part of the 20th Century the southern part of Iowa accepted Austro-Hungarians and Italians in the coal fields and the Dutch near Pell. The larger cities on the Mississippi attracted a larger variety of ethnic groups. In the 19th Century the blacks immigrated to the large urban centers. In 1970 5.7% and 8.7% of the population of Des Moines and Waterloo were non-white.

Most of the population of Iowa is Protestant due to the immigration of the northwestern Europeans to this state. Catholics are found in the northeastern portion and in the Dubuque area and in the larger cities. The conservative Fundamentalists group is found in southern Iowa. This group had social ramifications for the state. Of note was the reapportionment of the legislature in the 1960's which considerably weakened the conservative rural political strength.

Michigan

Unique to the United States is Michigan in that it is the only state of the 49 continental states divided into two large land segments. The state consists of the upper peninsula which lies north of the state of Wisconsin, bordered by Wisconsin to the south and located between Lakes Superior and Michigan. The lower peninsula lies east of Lake Michigan and is bordered by Indiana and Ohio to the south. The total land mass measures 58,216 square miles.

The major portion of the population is located in the lower peninsula and nearly 70% of the 8,375,083 persons are concentrated in the industrial centers of Detroit, Grand Rapids, Flint and Warren.

Michigan's upper peninsula is colder in climate than the lower peninsula making the growing season shorter. Within this region there is an abundance of copper and iron ore which makes the area economically dependent on the extraction industries. Better known cities in this area are Calumet, Hancock, Houghton and Marquette. While agriculture has little significance in the upper peninsula it has great tourist and recreational potential which contributes to the diversity of the state's economy. The area known as "northern Michigan", found in the lower peninsula contains much soil with adequate moisture to yield an abundance of potatoes and grain crops. The warming effect of Lake Michigan's waters to the west, allows the growing of fruit in this region. Fertile claylike soils are found in the south which support the growth of grains.

The ethnic stock of Michigan is diverse. Germans settled in both rural and urban areas and are a part of the state's history. Irish farmers came to southern Michigan while Dutch influences are observable in the

western counties. People from Finland generally settled in the upper peninsula. Early Polish immigrants settled in the rural areas but tended to concentrate in the Detroit area after the 1890's.

The first settlers to the Detroit area were Roman Catholics from Europe. Later immigrants of that faith who settled here were of Irish, Italian and Polish decent. The archdiocese was created in 1937. Protestantism is represented by the Lutheran, Methodist, Baptist and Dutch Reformed Churches. The first Jewish immigrants were of German background who established a synagogue in Detroit as early as 1851. Today synagogues are found throughout the state.

Michigan has experienced a far greater immigration than emmigration. The population of the state has been found to be younger than the national average. The influx of the black population into Michigan is considered a phenomenon of the 20th Century. As of 1970, there were 1,000,000 blacks in Michigan, two-thirds of which lived in Detroit, making the composition of that city 45% black.

Minnesota

The 84,068 square miles of the state of Minnesota is bounded on the east by Lake Superior and Wisconsin, on the north by the Canadian provinces of Manitoba and Ontario, on the west by North and South Dakota and on the south by the state of Iowa. Unique to this state is the single large metropolitan area known as the Twin Cities, which are comprised of Minneapolis and St. Paul. Of the more than 3,800,000 inhabitants, one-half of them reside in this metropolitan complex.

The land features of Minnesota were formed by the glaciers, the remnants of which form some 10,809 lakes of more than 25 acres each. The largest lakes are found in the northern half of the state. The northeastern area of Minnesota is composed of clear lakes, stream valleys and bare rock. The extreme southeastern portion of Minnesota is unglaciated, revealing layers of limestone cut away by streams for thousands of years forming steep, rocky bluffs that rise 500 foot or more above the valleys. Minnesota is a state which shows sharp contrast in its natural vegetation which may be divided into three general categories: needle-leaf forests are found in the northeastern third of the state, hardwood forests extending from southeastern Minnesota to the Canadian border passing through the Twin City area. The tall grass prairie lies south and west of these hardwood forests and have the most fertile soil found in the state.

The primary natural resources of Minnesota include agriculture, minerals, and timber. Seven percent of the people are engaged in agriculture which is more than twice the national average. The once high-grade ores found in northern Minnesota are depleted, however, Minnesota does supply the nation with some 40 to 50% of its iron ore needs from lowgrade processed ores. Sand, gravel, granite and limestone quarrying comprise Minnesota's other mining activities.

The first settlers to Minnesota were businessmen and lumbermen who came to the state from New England and helped establish the institutions and traditions that remain important to that state today. The first groups of immigrants arrived in Minnesota in the latter half

of the 19th Century from Germany, Sweden and Norway. These people were primarily farmers and tradesmen. The Germans essentially settled in the central and south/central parts of the state; the Norwegians settled mainly in the west/central portion of the state while the Swedish settled in a few of the counties immediately north of the Twin City area. Other ethnic groups including those people of Bohemian, Dutch, Flemish, Icelandic, Danish and Swiss descent scattered in various pockets throughout the state.

Roman Catholics of German, Polish, and Bohemian descent live for the most part in south/central Minnesota. The major Protestant religion found among the Norwegians and Swedish descendants is Lutheran. The native American Indians of the Chippewa tribe numbering 23,000 live in the state. Half live in urban Twin Cities neighborhoods. Less than 1% of the population are black and over 90% of these live in the Twin City area as well.

While Minnesota has experienced a population increase, out migration is a trend. The metropolitan area of the Twin Cities has been growing due to the natural increase in immigration from rural areas and surrounding states. It's growth rate was third in the nation, contributing to the population of the nation's 15th largest metropolitan area. The scenic portions and the lake regions are also experiencing an increasing number of permanent year-round positions.

Ohio

lying in the heart of the United States is the 41,222 square miles which comprises the area of the state of Ohio. Ohio is bounded by the lower peninsula of Michigan and Lake Erie to the north, by the states of Pennsylvania and West Virginia to the east and southeast, by Kentucky to the southwest and by Indiana to the west. Ranking 35th in size among the states it is the smallest after Hawaii and Indiana located west of the Appalachian mountains. It ranks 6th in population having 10,500,000 residents as of the 1970 census. While the national average is just over 50, Ohio shows 260 persons per square mile in five counties surrounding the major cities of Cleveland, Columbus, Cincinnati, Toledo and the Akron/Canton complex.

With the exception of the thin and heavily eroded hilly areas of the southeast portion of the state, Ohio's soils are well suited to agriculture. Central and northeastern portions of Ohio are good pastures while the great plains and particularly the lake plains are most productive in agricultural products.

Contributing to the mineral resources of Ohio are the stone and clay quarries and mineral fuels such as coal, petroleum and natural gas. A good quality coal is found in 32 eastern and southeastern counties with an abundance remaining estimated to be in the area of 42 billion tons. More than half of the coal is retrieved by strip mining procedures. Ohio leads the nation in sandstone production accounting for about two-thirds of the nation's building sandstone. It is also third in sand and gravel production. The abundance of surface clays, plastic fire clays, shales and some gypsum and peat allow Ohio to be a leader in the manufacture of ceramic products. The manufacturers of soda-ash and quarrying industries rely on the resources of salt

found both in natural brine and rock-salt mines. While much of the oil and natural gas discovered in 1860 experienced decline, new oil and gas deposits were discovered in 1960 which revived that industry. In 1970 there were 21,000 wells producing gas and oil. The climate and soil of Ohio is conducive to the production of hardwood and the natural ground water supply furnishing water for countless industries.

The foundations of Ohio were layed by the peoples of English ancestry coming from the seaboard states. About 1830, pioneers came from European nations. Settling in the east/central area were Germans and Swiss immigrating from the state of Pennsylvania. The principal racial stock in 1850 was the Scotch-Irish, although German and English also contributed large numbers of people. In 1880 immigrants appeared from eastern and southern Europe. By 1920 large numbers of Italians, Poles, Hungarians, Russians and others came to populate the major cities of Ohio. In 1883 the black population was 25,000 and in 1970 it increased to 970,000. Most of the blacks are found in the major cities.

The inhabitants of Ohio are supportive of the more popular Christian religions: Roman Catholic, Eastern Orthodox, Protestant faiths as well as Judaism.

Wisconsin

Lying central to the states being considered in this study is Wisconsin, bordered by Lake Michigan on the east, the upper peninsula of Michigan to the north, Minnesota and Iowa to the west and southwest respectively, and Illinois to the south. Its more than 4,400,000 inhabitants occupy an area of 56,154 square miles.

Approximately one-third of the state's population resides south of a line extending from Milwaukee to Madison, Wisconsin. The population concentration, particularly in the southeast portion of Wisconsin reflects the growing position of manufacturing in the state. On the whole, 65% of the total population of Wisconsin lives in urban areas.

The effects of glaciers upon the state has made the terrain somewhat irregular. In the extreme north is located the Superior lowland and the narrow plain dropping abruptly from the northern highland stretching across the state and underland with granitic bedrock. The terrain gives way southward to a central plain, a crescent-shaped underland with sandstone beds. To the southwest is the picturesque western upland edged with ridges and valleys by streams that have cut through limestone and sandstone. Southeastern ridges and lowlands are formed in three broad parallel limestone ridges, running in a north/south direction and separated by wide and shallow lowlands. The entire state is covered with a thick glacial deposit, with the exception of the southwest portion. Northern Wisconsin, along with its neighboring state of Minnesota, has one of the three or four greatest concentrations of lakes in the world. Wisconsin is unique in that essentially all drainage is outflowing.

Early in its history, agriculture developed in essentially the southern two-thirds of the state, the speciality being dairying and since 1920, Wisconsin has ranked first in the country in dairying. In the 1870's commercial lumbering devastated the north woodland area which is now recovering through the regrowth of timber and the

establishment of tourist-recreation industry. In the 1880's iron mining began in the north which contributed a million tons of ore to this nation before the area was closed in the 1960's. Manufacturing began on a small-scale essentially processing raw materials, but later turned to metal fabrication, contributing to the population increase in the south-east and serving expanding markets.

Wisconsin is a state which has experienced great ethnic diversity, yet it is populated predominately by descendants of northern Europeans. Most numerous were the immigrants coming from Germany followed by those from Poland, Scandinavia (primarily Norwegian) and British. The highest concentration of Germans live in the Milwaukee area. Polish descendants live mainly in Milwaukee and the Stevens Point area, while Norwegians are most numerous in the west and south and Swedes toward the north and northwest. Today, few persons are foreign born and the majority of the inhabitants of the state have become a blend of different ancestries. During the 1960's the black population increased 72%, totaling approximately 130,000 by the year 1970. Most of the blacks live in the southeastern lakeshore cities with more than four-fifths concentrated in Milwaukee making up 15% of that city's population. Other cities realizing appreciable numbers of blacks are Madison and Beloit, however, blacks live in 70 of the 72 counties in Wisconsin. Some 19,000 American Indians reside in the state, most of them in Menominee county and smaller northern localities.

The religions practiced in the state reflect the religions of Europe, mainly the Roman Catholicism and Protestantism.

In the last decade, Wisconsin has realized a natural population increase, however, in the 1960's birthrate fell dramatically. The overall growth rate was below the national average but above the average for the north/central states. The ratio of males to females continued in a downward trend. Over half the population is under the age of 25, there is about a tenth of the population being over 65.

There are approximately 70 persons per square mile but 70 percent of the people live in the southeast and only 20% of the states' total area. While the state experienced emmigration since the 1930's this trend was reversed in the 1960's with a slight increase in immigration. The population of Milwaukee has decreased while its surrounding area experienced the states greatest increases. There is no longer the migration from the north and west to the southeast portions of the state.

Demography of the States

As can be seen in Table 1, the north/central midwestern states considered in this study are predominately inhabited by Caucasians; the range being from 87% to 97%. Of the other minority groups considered, blacks predominate in a range from .1 to .13%. The highest percent of blacks occur in the states of Illinois, Michigan, and Ohio. People speaking the Spanish language were found to be the highest in Michigan. (2.0%) and Indiana (1.3%). Native American Indian population still inhabiting all of the seven states range from .1% to .9% of the states

Table 1: State Demographic Data

States	Illinois	Indiana	Iowa	Michigan	Minnesota	Ohio	Wisconsin
<u>Race & Persons of Spanish Language</u>							
White	86.0	92.9	93.6	83.4	90.8	90.0	90.3
Black	12.3	6.7	4.1	11.2	7.9	9.4	12.9
Indian	.1	.1	.1	.1	.0	.1	.4
Japanese	.2	.0	.0	.1	.1	.1	.1
Chinese	.1	.0	.0	.1	.1	.1	.1
Filipino	.1	.0	.0	.0	.0	.0	.0
Korean	.0	.0	.0	.0	.0	.0	.0
All other races	.1	.0	.6	.1	.1	.1	.1
Persons of Spanish Language	.3	1.3	.6	2.0	.1	.9	1.0

Selected Education Information

Population Age Groups

16 and over	69.6	68.5	69.1	67.4	67.7	68.8	68.1
16 years and older with no high school diploma	32.5	32.1	28.6	31.6	28.3	NA	30.3
16-24	14.7	15.5	14.8	15.5	15.3	15.2	15.3
16-24 not enrolled in school, no high school diploma	2.4	2.7	1.5	2.4	1.2	2.3	1.5
20+ with less than completion of high school	27.5	26.6	23.4	26.0	23.0	25.0	25.0

Selected Education Information of Persons 25 and Older

Population 24 Years & Older

Male	25.7	24.1	25.8	24.8	25.2	25.2	25.3
Female	25.1	27.7	28.8	26.9	27.1	28.3	27.4

School Years Completed

Percentage who have completed high school	52.6	52.9	56.1	52.8	57.6	53.2	54.5
Total Percentage with less than high school	47.4	47.1	43.9	47.2	42.4	46.8	45.5
Males	47.1	47.1	49.5	48.8	45.6	47.6	47.9
Females	47.7	47.0	38.2	45.8	39.5	46.0	43.3
Percentage who completed 5 or less years of school	5.7	4.6	2.8	5.2	3.3	5.1	4.5

Median School Years Completed

Male							
White	12.2	12.1	12.2	12.1	12.1	12.1	12.1
Black	10.5	10.2	10.8	10.2	12.1	10.3	10.0
Spanish	9.4	10.6	12.1	10.4	12.3	11.3	10.2
Female							
White	12.1	12.1	12.3	12.2	12.3	12.1	12.2
Black	10.8	10.8	11.0	10.9	12.0	10.8	10.7
Spanish	9.0	10.5	12.1	10.7	12.2	11.2	10.7

Median Family Income by Dollars

	10,957	9,966	9,017	11,029	9,928	10,309	10,065
Range by Congressional District	7,501-16,576	8,557-10,785	8,338-9,594	7,770-13,627	7,089-13,248	7,894-13,427	8,424-12,479

Percentage of Employed Persons by Occupation

White collar workers	49.1	42.1	42.9	44.9	48.6	45.4	43.3
Service worker	11.8	12.2	13.7	12.8	13.4	12.0	13.4
Blue collar worker	36.7	42.7	30.9	40.8	30.9	40.9	37.3
Farm workers	2.4	3.0	12.5	1.5	7.1	1.7	6.0

1970 State Population 14-15 Employed Full-Time

	45,601	22,811	18,475	38,039	24,646	39,983	23,185
% of population 14-15 employed full-time	.41	.44	.65	.43	.65	.38	.52
Males	65.0	67.0	64.0	69.0	62.0	73.0	71.0
Females	35.0	33.0	36.0	31.0	38.0	27.0	29.0

Note: a Marquis Academic Media, 1970 Census. Yearbook of Adult and Continuing Education, 1975-76, 1st edition. Chicago: Marquis Who's Who Inc., 1975., p.p. 97-147. (Percents represent actual percents presented and transformation of numerical data into percents.)

population.

Population age groups are quite consistent among the states in that those sixteen and over vary only 2% from 68% to 70% of the population. In the age group 25 and over the variation is from 25% of the population to 29% with a 4% difference. Females exceed males by some 2% on the average among the states in this age group.

Considering the total population of each of the states, over 50% of the population has completed high school. Males slightly more than females tend to have less than a high school education, this range considering both sexes is from 38% to 50% having less than a high school education.

Whites tend to complete high school as their median schooling while blacks tend to drop out one to two years before graduation with the exception of the black population in Minnesota which tend to complete high school. Following these groups of people are the Spanish speaking who tend to drop out from three years before graduation in the state of Illinois to those completing twelve years of schooling in the states of Iowa and Minnesota. In descending order, farm workers are found to be the most prevalent in Iowa (12.5%), Minnesota (7.1%), and Wisconsin (6.0%). The smallest number of farm workers are found in Indiana (3.0%) and Michigan (1.5%). Among the states white collar workers range from 42% in Indiana to 49% in Illinois and Minnesota. Service workers lie in a range from 12% to approximately 14% in Iowa, blue collar workers are found most prevalent in Indiana (42.7%) and least prevalent in Minnesota (30.9%).

The average median family income ranges roughly \$7,000 to \$16,000. The average low is approximately \$7,500 while the average high is approximately \$13,000. The greatest range in any one state is from \$7,500 to \$16,500 in the state of Indiana.

In descending order Table 2 shows Illinois to be the most populated of the seven states considered in this study followed by Ohio, Michigan, Indiana, Wisconsin, Minnesota and Iowa. Michigan and Minnesota show 22% of their population to be within the age ranges of 5 to 17 while Indiana, Iowa, Ohio and Wisconsin show 25% and Illinois 24%.

Indiana had the highest number of enrollees in grades 9-12 followed by Illinois, Ohio, Michigan, Wisconsin, Minnesota and Iowa. The majority of students attending grades 9-12 were found in public educational institutions, the range being from 94% in Minnesota to 89% in Illinois and Indiana. Of these, secondary students enrolled in high school classes, vocational educational enrollments varied to some degree. In descending order they are Illinois 65.6%, Minnesota 42.8%, Wisconsin 37.8%, Iowa 34.7% Michigan 34.4%, Ohio 30.6% and Indiana 12.7%.

Post-secondary vocational education was found to be the strongest in Wisconsin with an enrollment of 3% of the population 18-64 years of age followed by Minnesota 1.8%, Michigan 1.7%, Illinois and Iowa 1.5% and Indiana and Ohio .004%.

Iowa had the largest percent enrollment in the adult education area, 9.1% followed by 6.5% of the population in Minnesota, 5.2% in Wisconsin, 3.9% in Ohio, 2.0% in Michigan, 1.5% in Indiana and .008% in Illinois.

Table 2: State Populations and School Enrollments

States	Illinois	Indiana	Iowa	Michigan	Minnesota	Ohio	Wisconsin
Population ^a							
States Resident Population	11,131,000	5,330,000	2,855,000	9,098,000	3,917,000	10,737,000	4,566,000
Population Ages 5-17 Years	2,695,000	1,322,000	702,000	2,323,000	1,003,000	2,636,000	1,164,000
Population Ages 18-64 Years	6,436,000	3,053,000	1,587,000	5,231,000	2,191,000	6,207,000	2,564,000
Secondary Enrollments							
School Enrollments in Grades 9-12 ^b	809,885	884,780	214,132	702,540	323,824	778,210	361,665
Public	720,170	790,446	197,314	649,418	305,346	708,187	332,413
%	89.0	89.3	92.0	92.0	94.0	91.0	92.0
Non-Public	89,715	94,334	16,818	53,122	18,478	70,023	29,252
Vocational Education Enrollments ^c							
Grades 9-12	531,077	112,586	74,204	241,973	138,676	238,462	136,808
%	65.6	12.7	34.7	34.4	42.8	30.6	37.8
Post Secondary and Adult Enrollments ^c							
Post Secondary Education	95,912	11,000	23,198	89,190	40,279	24,827	76,509
%	1.5	.004	1.5	1.7	1.8	.004	2.98
Adult Education	54,082	47,314	144,018	102,588	141,440	239,084	133,730
%	.008	1.5	9.1	2.0	6.5	3.9	5.22

Note. ^a Population Estimates and Projections, U.S. Department of Commerce: Washington, D.C., January, 1975.

^b State departments.

^c Federal 346-3 reports for FY '75.

Economy of the States

Another contributor reflecting the vitality of the states is the annual personal income of the people generated through industry. The annual personal incomes from the seven states considered in the study comprise 29% of the national personal income, 29% of personal incomes derived from farming and 23% of personal incomes derived from industry. (For specific data referred to in this discussion, see Tables 3 and 4)

Illinois

Illinois has a total population in excess of 11 million people making it the largest of the states considered in population and personal income being approximately 75 billion dollars. The over 250 industrial parks scattered throughout the state, but mainly concentrated in the Chicago area, make the manufacturing industry the greatest contributor to the annual personal income for Illinois residents. The income from this one source exceeds 16.8 billion annually and is 30.6% of the non-farm income. Illinois leads the nation in the manufacture of non-electrical machinery and the fabrication of metals. It places second in the processing of food products and in printing and publishing. It is considered third in the manufacture of electrical machinery. Illinois is also a major automotive center employing some 550 thousand persons in the assembly and the use of motor vehicles.

The rich coal mines in the southern part of the state have the highest man-day production in the country. These mines and the more than 40 coal seams found in the state rank Illinois fourth nationally in coal production. These mines and the lead, zinc, limestone and silica used in the glass and steel industries provide an annual personal income of 4.6 million dollars or 0.8% of the total private industry's contribution to the income of the state's inhabitants. The production of petroleum as a natural resource is also a factor contributing to personal income.

Wholesale and retail trade accounts for over 10 billion dollars of the state's annual personal income which is 18.4% of the total private non-farm industries contribution. This is followed by the services industry with over 8.8 billion dollars or 16.1% from this source.

Note.

^a Discussion in this section includes information from the Encyclopedia Britanica contrasted with information in sources referred to in Tables 3 and 4.

Illinois is an agricultural state which derives 4.2% or 2.4 billion dollars as annual personal income from this source. About 2.3 billion dollars of this amount constitute proprietary incomes. Ninety-nine percent of the farms and 97% of the farmland is family-owned. The average size farm in Illinois is about 240 acres as compared to the national average which is about 378 acres.

Finance, insurance and real estate account for 5.9% or over 3.2 billion dollars of the annual personal income. The state has the largest number of independent banks second only to the state of Texas and is a major insurance center headquartering two of the largest automobile insurers in the world. The city of Chicago is the seat of the seventh district of the Federal Reserve Bank, the Mid-west stock Exchange and the Chicago Board of Trade.

Government as an industry accounts for over 7.9 billion dollars of the annual personal income in the state. The more than 6 billion dollars derived from state and local sources is about 70% of the total amount through government.

Per capita income is in excess of 6.7 billion dollars annually with an average weekly income of \$233.06. About 4.5 million persons are found to be employed in non-farming industry with a total unemployment of roughly 203 thousand at an unemployment rate of 5.3%.

Indiana

Due to its location within 800 miles of 40 of the 50 largest consumer and industrial markets and the passage of legislation 12 years ago that became the major source of personal income for more than 40% of Indiana's labor force. Manufacturing provides more than 9.3 billion dollars annually or more than 41.7% of the annual personal income. Major components to manufacturing are the steel industry located in the Hammond/Gary area. Not to be excluded is Elkharts' production of 70% of Americas band instruments and Fort Wayne's diamond tool industry that also contributes to wholesale and retail trade providing 3.5 billion dollars or 15.8% to resident income.

The service industry provides the next major portion of the personal income with 2.7 billion dollars or 12% of the 23.6 billion dollars earned by labor and proprietors. Also important to the economy of Indiana is farming which provides 2.4 billion dollars or 19.1% of the total labor and proprietors income. Although farm acreages are considered smaller than the national average and the total number of farms are decreasing, technology has provided changes that have resulted in increases per acre, per animal and per worker giving Indiana near top ranking nationally in cash receipts from farm marketing. Major crops raised are corn, soy beans, and wheat with tomatoes being one of their principal vegetable crops. The chief animal product is the hog while cattle, sheep, and poultry are becoming increasingly important.

Some 2.9 billion dollars or 12.5% of the annual personal income is derived through government, 73.2% or 2.2 billion dollars are earned at the state and local levels. Personal incomes within the state amounts to 29.7 billion dollars with a per capita income of \$5,887. Of the 5,330,000

inhabitants there is a total of 1,965,700 employed in non-agricultural industry. Total unemployment is approximately 1% of 47,900 with the unemployment rate being 2.8%.

Iowa

Although Iowa is generally thought of as a state where agriculture predominates this is not entirely true. The manufacturing industry accounts for 29.2% of the annual personal income. Manufacturing here consists mainly of food processing and the fabrication of agricultural machinery. Some other manufacturing not related to agriculture does exist and this is mainly in the production of electronic materials in Cedar Rapids, home appliances in Newton, refrigeration equipment in Amana, tires in Des Moines, writing instruments in Fort Madison and rolled aluminum in Bettendorf. These industries are reflected in the second source of the personal incomes of the state residents which is that of wholesale and retail trade which supplies 2.175 billion dollars or 2.5% of the non-farm personal income for the state.

Some 2.43 billion dollars or 19.1% of the total labor and proprietors income of 12.8 billion dollars comes from the farming industry. Farming and the unusually high incomes provided through this means of industry has been the cause of Iowa's per capita income rising above the national average of \$5,834 to a figure of \$5,899. Agriculture in the state consists mainly of the feeding and selling of livestock. In the late 1960's Iowa ranked first in hogs, second in cattle and calves and third in sheep and lambs. It alternates with the state of Illinois in being ranked first in the annual production of corn. Other important crops include soybeans, oats and hay.

Government as an industry contributes 1.6 billion dollars to the resident annual personal income, 5.4 billion or 83% coming from state and local sources.

Of the more than 2.8 million residents, 36% are employed in non-farm industry. Total unemployment accounts for 23,200 persons with the rate of unemployment being 2.8 which is the lowest rate of unemployment found in the seven states under consideration in this study with the exception of Indiana which shows the same rate of unemployment.

Michigan

The greatest contributor to manufacturing in Michigan is the automotive industry which places this state first in manufacturing among the states considered in this study with 42.4% of its annual personal income being derived from this source. Manufacturing is followed by wholesale and retail trade (15.3%) and services (13.0%). Viewing industry in a different way, it can be said that Michigan's second largest industry is that of tourist industry. It is estimated that over 18 million people visit the state annually spending in excess of 1.3 billion dollars. It is interesting to note that tourism employs 155 thousand persons directly and about 400 thousand indirectly.

Farming provides 1.4% of the annual personal income on the state level and 1.9% on the national level. Michigan farms are found to be on the average 153 acres in size as compared to 378 acre farms which are the national average.

Government contributes 6.5 billion dollars to the annual personal income in the state. Of this amount 5.4 billion or 83% are provided by the state and local levels of government.

Of the more than 9 million residents of Michigan about 4.5 million are employed in non-farm industry, 167,400 are unemployed giving that state an unemployment rate of 6.1% which is the highest found in the states considered in this study.

The annual personal income of its residents is 57 billion dollars with a per capita income of 6.2 billion. Average weekly earnings are \$262.96.

Minnesota

Wisconsin's neighbor to the northwest is Minnesota having a total population of 3.9 million people making it the second smallest population of the states considered in this study. Total labor and proprietors income amounts to 17.4 billion dollars annually. Minnesota's major industry is manufacturing contributing 4.0 billion dollars or 25.4% to the annual personal income. Although fewer than a quarter of the working force is engaged in manufacturing, over half of these people are employed in the Twin Cities area. The state does exceed the national average in manufacturing growth, but this is not tied to its national resources.

Wholesale and retail trade amount to 3.2 billion dollars or 20.3% of the annual personal income. This may be accounted for partly because Minnesota is an exporter of agricultural commodities, iron ores, and manufactured goods derived from natural resources such as meat, dairy, and grain products, paper and pulp. Services as an industry provide 2.5 billion dollars or 15.9% of the annual personal income while farming contributes 1.6 billion dollars or 9% of the total labor and proprietors income.

Government as an industry provides 2.7 billion dollars or 15.4% of the total labor and proprietors income. The state and local levels contribute 80.6% of this income. Personal income amounts to 22.6 billion dollars while the per capita income is \$5,754.

Approximately 1.5 million people are employed in non-agricultural labor while 45,000 are unemployed giving a 3.3% rate of unemployment.

Ohio

Second highest in population among the states considered in this study is the state of Ohio with more than 10.7 million people. This

total labor and proprietors income amounts to 49.5 billion dollars annually. Manufacturing in Ohio contributes 18.8 billion dollars or 38.8% of the annual personal income. This places it second to Michigan in manufacturing among the states considered in this study. Of all the states in the northeast to Mid-west manufacturing belt that stretches through Ohio, this state leads all others in the diversity of manufacturing for it is well known in the production of non-electrical machinery, automobiles, and aircraft. In addition, it produces rubber products, porcelain ware, plumbing equipment and steam shovels. Over 4.1 million people are employed in non-agricultural endeavors. The state shows 125,000 people unemployed with an unemployment rate of 3.3%.

personal income of the state is 63.6 billion dollars annually with a per capita income of \$5,883.

Ohio obtains less than a billion dollars annually from its agriculture or 4.5 of the total labor and proprietors income but nevertheless is ranked near the top in agricultural production. In recent years farming acreage and the number of farms have decreased, however, more than 60% of Ohio is still considered farmland. The trend in this state is that farms are becoming larger, they are supplying more food with less man hours thorough the application of science and technology. Ohio remains one of the leading states in the production of corn, oats and hay. It maintains large market inventories in the selling of fruit, feed and vegetables as well as livestock and poultry.

Following services as an industry is government which provides 6.4 billion dollars or 13% of the total labor and proprietors income, 72.9% or 4.7 billion dollars are earned as a result of state and local government.

Wisconsin

Since one of the purposes of this study is to compare and contrast Wisconsin with the other states considered in this study, all ranking referred to, unless otherwise specified, refers to Wisconsin's rank to surrounding states.

With a population of 4.6 million people and a total labor and proprietors income of 19.3 billion dollars annually, Wisconsin ranks 5th among the states. Although often thought of as an agricultural state, it nevertheless follows industrial trends found to be similar in the surrounding states.

Most important to the source of personal income is the manufacturing industry. This industry provides 6.8 billion dollars annually or 37% of the annual personal income to the states' residents. This is followed by wholesale and retail trade amounting to 3.1 billion dollars or 17% of the total income. Manufacturing for the most part is concentrated in the southeastern portion of the state where machinery and metal products are produced. Other manufacturing throughout the state consists of metal goods such as marine engines and aluminum products. The processing of agricultural and forest products adds to the total manufacturing picture. Its

wholesale and retail trade and services industries are major components to the personal income of the residents. There are two factors which contribute to this later type of income, one being the tourist business and the second being the fact that raw materials are imported and processed within the state and exported as manufactured products to other states and foreign countries. It remains one of the major beer producing states in the nation.

Wisconsin is tied with Ohio in ranking fourth in agriculture as seen through annual income statistics. Almost one billion dollars or 4.5% of the labor and proprietors income is received through the farming industry; 85% of this income is derived from livestock and livestock products while 56% comes from dairy products. This state produces 15% of the nations milk supply and about 45% of all cheese produced in the nation. It is also well known for its meat processing and packing plants.

Wisconsin ranks fifth in its income derived through government industry while 2.9 million dollars or 14.8% of the labor and proprietors income is derived through government. Approximately 2.4 billion dollars or 84.2% of the total income derived from government is found at the state and local level. This places Wisconsin first among its surrounding states in income derived from this source. It is tied with Indiana, Iowa, Minnesota, and Ohio in that it has approximately 1% unemployment showing a figure of 62,600 unemployed. Its rate of unemployment is 3.9%. The total employment in non-agricultural industry reaches a figure of 1.7 million persons. The personal income annually is 25.9 billion dollars ranking it 6th among its neighboring states. Personal income on the state level is a function of the population which makes it rank among the states less significant. Per capita income has reached \$5,627 per year placing Wisconsin 6th in this category. Average weekly earnings are \$236.16. This figure puts it above the national average of \$233.59.

Governmental Administration of the States

An important influence to the delivery of education is the structure of state and local government. A short description of the governmental structures focusing on the states concerned to this study follows.

Illinois

Since its admission to the Union in 1818, the state of Illinois has adopted four constitutions, the last in 1970. This constitution added 2 concepts to the Illinois Bill of Rights promoting a more healthy environment within the state by declaring such things as discrimination and employment and property rental on the basis of race, creed, color, ancestry, sex and disability as being unlawful.

In addition the 1970 legislation included provisions for; larger cities and counties to tax, license and incur debt; to recognize state government and line veto legislation; the judiciary to be elected; and

the House of Representatives to be made up of three representatives from each district.

There are three levels of local government in Illinois: county, which includes the township and non-township, township and municipality, in addition to the "special" district of which Cook County, containing Chicago and suburbs is the chief example. The 84 township counties are governed by an elected board of commissioners; the seventeen non-township counties are governed by three member boards elected at large. Cook County is governed by a 15 member board. Townships are generally characterized by annual township meetings which is a vestige of earlier government. These townships act primarily as road-maintenance and general assistance units. Municipal government is usually of the mayor-council type, although other forms of municipal government are permitted in the state.

The 6500 units of local government result in overlapping administration in education, park provision, fire control, sanitary sewage, drainage and other special districts. Major local support for schools and other services come from real estate taxes.

Indiana

Indiana's executive branch of government is headed by an elected governor who may serve a four-year term but, who cannot succeed himself in office. The ratifications of this type of term usually results in a weakening of his influence with the general assembly during the second half of his administration. While he has veto powers they can easily be overridden by a majority vote. The governor has authority to appoint and remove heads of all departments, commissions, and governing boards of institutions.

Indiana has a bicameral legislative system made up of 50 senators serving four-year terms and 100 representatives serving two-year terms. These elected officials may succeed themselves if reelected.

The judicial system provides a supreme court composed of five elected judges who serve six-year terms. Other courts are provided by the legislature as needed. These are the appellate courts made up of eight judges, circuit, county and various other courts.

Local government consists of overlapping functions and activities of county, township, town, and civil cities.

Iowa

Iowa is governed under the constitution drafted and ratified in 1957 which provides for three governmental bodies, namely the executive, legislative and judicial.

The governor, lieutenant-governor, secretary of state, auditors, treasurer, secretary of agriculture and attorney general are elected for two-year terms to the executive branch of government. The governor has the power to make appointments to a number of executive positions, to commissions, boards and departments. Most state employees are hired under a civil service system.

The judicial branch in Iowa is the supreme court composed of a nine member body who elect their own chief justice. All justices are appointed by the governor subject to conformation by popular vote one year after their appointment. After serving an 8-year term, justices may declare their candidacy for another term. There are 18 lower judicial districts within the state. The number of judges vary according to the population and case load within the 18 districts. Many of the larger cities have municipal courts while others have police and mayor's courts. In townships that lack municipal courts, justices of the peace are elected.

Authority for government at the local level is vested in a board of supervisors. Serving under the board of supervisors are elected officials such as auditor, sheriff, reporter, treasurer, clerk of district court and county attorney. These local governments are in power to collect municipal, county, school and state taxes; manage welfare and operate the road system with cooperation of the state highway commission. Small towns have a mayor-council form of government while the larger cities have a council, manager or commissioner administration.

Michigan

In an effort to be responsive to the problems of a modern industrial and urban society Michigan ratified a new constitution in 1963.

The executive branch is headed by the governor who is elected to a four-year term. Members of administrative and advisory commissions are appointed by the governor.

The legislative branch of government is composed of 38 senators each elected for four-year terms and a house of representatives composed of 110 members elected for two-year terms.

The judicial branch is headed by a seven member state supreme court. Other courts within the state are appeals, circuit court, probate court, and courts of limited jurisdiction that are specified by the legislature.

There are more than 2900 local governmental units included in counties, municipalities, townships, school districts, and special districts. The majority of counties are governed by a board of supervisors, however, the home-rule privilege allow larger counties to entrust management to the county commissioners. The privileges of home-rule are authorized for cities as well.

Minnesota

Minnesota's constitution was adopted in 1858. The constitution provides for an executive branch of government consisting of elected members who serve four-year terms. It includes a governor, lieutenant-governor, secretary of state, auditor, treasurer, and attorney general. The governor appoints administrative agency heads.

Not unlike the other states considered in this study, Minnesota has a bicameral legislature composed of a house of representatives comprised of 135 members elected for two-year terms and a senate composed of 67 members elected for four-year terms. Legislators are divided into either liberal or conservative caucuses although they are elected without party designation.

The judicial system is headed by the supreme court and is comprised of a chief justice and 6 associates who are elected for 6-year terms. The minor court system includes district courts, probate courts, municipal courts and justices of the peace.

Most of the local government services are provided by counties and municipalities. Township government is limited to certain welfare services and maintenance of local road systems. These local governments have been having difficulty in recent years in providing equitable services for their people although all local governments have traditionally taxed themselves at a high rate to obtain such needed public services. As recently as 1971, legislation was passed which stipulated that state funds rather than local property taxes were to be used for local school districts operation.

Minnesota remains a vibrant political state in that it is involved in visible public issues on a state as well as national level. It is considered as having a balanced political system in which neither party is dominant within the state for long periods of time.

Ohio

The governmental structure in Ohio is not dissimilar to other states in the Union.

The executive branch includes elected officials and is headed by the governor. It also includes the heads of 22 agencies serving as the executive cabinet.

The legislature is comprised of a senate and a house of representatives having the power to formulate policies and appropriate monies.

The judiciary is composed of a court system headed by the supreme court that includes 10 courts of appeals, courts of common pleas and a probate court in each of 88 counties of the state. Other lesser courts may be established by the legislature. Judges who sit on the courts are elected for six-year terms. Local government is an extension of the state form of government and is considered a quasi-municipal court corporation but, without the authority for self governing autonomy. Larger cities tend to operate under charters that permit them to choose the form of government needed in their immediate location. The mayor-council type is most common. Township government in Ohio is diminishing as townships are being annexed to municipalities at an increasing rate.

Wisconsin

The basic constitution of Wisconsin was adopted in 1848. Presently Wisconsin is governed under the amendment of that constitution created in 1970 which provides for five constitutional officers each of which are elected for four-year terms. They include the governor, lieutenant-

governor, attorney general, secretaries of the state and treasury and the superintendent of public instruction.

The legislative branch of the state government consists of 33 senators elected for four-year terms and 100 assembly members who serve -year terms of office.

The supreme court is the highest appellate court in the state composed of seven judges elected for ten-year terms. Other minor courts are the courts of original jurisdiction to be found in 70 county courts and 26 circuit courts.

Local government is found at the county, town, city and village level. Counties are governed by an elected board of supervisors who act as agents for both the state and the locality in which they serve. Each county is organized into towns which coincide with six square mile townships. A town meeting is held once annually which provides an opportunity for qualified voters to make policy decisions that are carried out locally by the three-member town board.

The department of public instruction has the responsibility to carry out the statutes regarding the K-12 education in the state. Local boards of education oversee local district education at this level. In 1976 there was a consolidation of the K-12 system which decreased the number of districts from 7,739 existing in 1922 to 457 K-12 districts in the state.

Table 3: Annual Personal Income by Major Sources in Millions of Dollars, 1975

States	Illinois	Indiana	Iowa	Michigan	Minnesota	Ohio	Wisconsin	U.S.A. Total								
<u>Income by Place of Work</u>	%	%	%	%	%	%	%	%								
Total Labor and Proprietors Income^b																
by Type	57,527	6.1	23,569	2.5	12,774	1.4	44,287	4.7	17,482	1.9	49,452	5.3	19,299	2.1	941,099	
Wage and Salary Disbursements	48,456		19,134		8,815		36,643		14,055		41,896		16,012		793,829	
Other Labor Income	3,356		1,857		627		4,763		942		3,917		1,309		57,675	
Proprietors Income	5,715	9.9	2,578	10.9	3,332	26.1	2,882	6.5	2,486	14.2	3,638	7.4	1,977	10.2	89,595	9.5
Farm	2,297	40.2	1,106	42.9	2,298	69.0	498	17.3	1,450	58.3	738	20.3	735	3.8	27,100	30.2
Non Farm	3,418	59.8	1,472	57.1	1,034	31.0	2,384	82.7	1,036	41.7	2,900	79.7	1,242	6.4	62,495	69.8
<u>By Industry</u>																
Farm	2,446	4.2	1,208	5.1	2,434	19.1	603	1.4	1,565	9.0	847	1.7	862	4.5	32,957	3.5
Non Farm	55,101	95.8	22,361	94.9	10,340	80.9	43,684	98.6	15,917	91.0	48,605	98.3	18,437	95.5	908,542	96.5
Private	49,571	86.2	20,621	87.5	11,133	87.2	37,748	85.2	14,784	84.6	43,027	87.0	16,449	85.2	769,612	81.8
Manufacturing	16,855	30.6	9,327	41.7	3,015	29.2	18,542	42.4	4,043	25.4	18,881	38.8	6,835	37.1	242,090	25.7
Durables	c		7,289		1,892		15,614		2,361		13,786		4,624		152,914	
Non Durables	c		2,038		1,124		2,928		1,683		5,095		2,212		89,176	
Mining	460	0.8	127	0.6	34	0.3	214	0.5	231	1.5	463	1.0	37	0.2	12,214	1.3
Contract Construction	3,027	5.5	1,284	5.7	707	6.8	1,691	3.9	998	6.3	2,433	5.0	908	4.9	51,749	5.5
Wholesale and Retail Trade	10,129	18.4	3,522	15.8	2,115	20.5	6,689	15.3	3,229	20.3	7,947	16.4	3,142	17.0	158,015	16.8
Finance, Insurance and Real Estate	3,270	5.9	975	4.4	547	5.3	1,603	3.7	864	5.4	2,022	4.2	833	4.5	50,707	5.4
Transportation, Communications & Public Utilities	4,392	8.0	1,458	6.5	753	7.3	2,309	5.3	1,283	8.1	3,299	6.8	1,104	6.0	67,449	7.2
Services	8,897	16.1	2,681	12.0	1,477	14.3	6,017	13.8	2,527	15.9	7,033	14.5	2,676	14.5	151,449	16.1
Other Industries	115	0.2	39	0.2	51	0.5	80	0.2	44	0.3	103	0.2	52	0.3	3,079	0.3
Government	7,956	13.8	2,948	12.5	1,641	12.8	6,539	14.8	2,698	15.4	6,425	13.0	2,850	14.8	171,487	18.2
Federal, Civilian	1,383		572		257		855		433		1,399		359		41,118	
Federal, Military	520		218		55		263		91		339		93		20,630	
State and Local	6,053		2,159		1,328		5,420		2,174		4,687		2,399		109,739	
Personal Income by Place of Residence	75,230		29,673		16,931		57,142		22,591		63,290		25,927		1,263,313	
Per Capita Income (as read)	6,750		5,587		5,899		6,240		5,754		5,883		5,627		5,814	

Note: ^a Preliminary Quarterly and Annual Personal Income by Major Sources, (U.S. Department of Commerce, Bureau of Economic Analysis, 1975).
^b Percents calculated.

^c Consists of wage and salary disbursements, other labor income, and proprietor's income.

^d Not shown to avoid disclosure of confidential information. Data are included in totals.

Table 4: Economic Conditions of the States as of November 1975

States	Illinois	Indiana	Iowa	Michigan	Minnesota	Ohio	Wisconsin
<u>Measures of Manpower Utilization</u>							
Civilian Labor Force ^a	4,651,500	2,013,600	1,049,900	3,377,400	1,545,000	4,262,800	1,789,400
Total Employment ^b	4,448,200	1,965,700	1,026,700	3,210,000	1,499,700	4,137,500	1,726,800
Unemployment ^c	203,300	47,900	23,200	167,400	45,300	125,300	62,600
<u>Measures of Consumer Income</u>							
Personal Income by Place of Residence (Annual) in Billions	75,230	29,673	16,931	57,142	22,591	63,290	25,922
Average Weekly Earnings ^c	\$230.06	\$227.53	\$221.35	\$262.96	\$209.35	\$216.35	\$223.59

Note.

^a Obtained by adding total employment to total unemployment.

^b Employees on non agricultural payrolls, pp. 90-99 and earnings of production workers on manufacturing payrolls, p. 125 (U.S. Department of Labor, Bureau of Labor Statistics. Employment and Earnings, Vol. 22, No. 8,

^c Insured unemployment under State Programs, p. 132 (U.S. Department of Labor, Bureau of Labor Statistics. Employment and Earnings, Vol. 22, No. 7.

CHAPTER II

VOCATIONAL EDUCATION STUDENT ENROLLMENTS AND PLACEMENT -- FOLLOW-UP ACTIVITIES

This chapter reports the status of enrollments of students by level, program area and type in addition to existing placement and follow-up activities by state.

Placement and Follow-Up Activities

The brief description of the placement and follow-up activities accomplished by individual states which follows is important as it relates to one of the possible benefits attained through vocational education by program participants, namely employment.

Illinois

Presently there are no state guidelines in Illinois relating to placement activities and follow-up of students at the secondary, post-secondary or adult levels. To the present time responsibility for placement existed at the local district level and in some area vocational centers.

State vocational personnel indicate that a comprehensive guidance program should include a placement service for employment or future training as well as for collecting follow-up data to determine the effectiveness of occupational programs and guidance services.

Placement and follow-up activities are a concern at the state level. A model placement project through Trenton College, funded in FY 1975, will be field tested in a variety of locations within Illinois during the 1976 fiscal year. The project was designed as part of the Tri-County Industrial-Education-Labor Council to provide a link between education, industry and labor in the counties of Peoria, Woodford, and Pezwell. This council now provides 29 school districts with materials and resources to assist them in bringing education, industry and labor closer together. The goal of the project is to conduct activities to improve occupational education at the local level through the development of innovative programs and techniques. Part of this project is to study and to develop a model placement center system that can be adapted and be used by community colleges and high schools throughout Illinois. An intensive review of the current status of placement both at the national and state level will assist the project staff in preparing a model placement system to be used by these community colleges and secondary schools. (Annual Descriptive Report, 1975, p. 81).

Indiana

In June of 1974, the U.S. Commissioner of Education funded a project in Indiana which focused on diverse approaches to placement and follow-up in vocational education. That project was entitled; "Implementation of a Statewide Guidance Program With Emphasis on Counseling, Placement and Follow-up for Selected Target Groups." The state board of vocational education in turn funded seven sub-projects to local educational agencies across the state.

The primary objectives of the project were: 1) to provide a coordinated statewide system for developing and disseminating products, 2) to identify effective concepts and practices in placement services, 3) to develop effective graduate follow-up techniques and materials, and 4) to provide a cost-effectiveness model for planning and evaluating programs.

The seven sub-projects were planned to provide adaptability to both secondary and post-secondary schools throughout the state. They are:

EAST CHICAGO AND WHITING PUBLIC SCHOOLS: AREA VOCATIONAL DISTRICT I - STUDENT CENTERED APPROACH TO VOCATIONAL CHOICE
Product: A data and information bank to serve as a basis for a placement component in an area vocational education center!

EVANSVILLE - VANDERBURG SCHOOL CORPORATION - PLAN TO GUIDE STUDENTS TO MEANINGFUL CAREERS
Product: A longitudinal in-school and out-of-school data system! The data system, ranging from seventh grade to ten years after graduation, will provide a model information bank for guidance and placement programs.

INDIANAPOLIS PUBLIC SCHOOLS - SYSTEMS APPROACH TO "LEAVE-SCHOOL STUDENT DATA"
Product: A manual for conducting follow-up studies! The manual will provide a model for conducting and using follow-up studies and will include study cost guidelines.

INDIANA UNIVERSITY - COST EFFECTIVE HANDBOOK FOR LOCAL HIGH SCHOOL PROGRAMS
Product: A handbook for conducting cost effectiveness studies of local vocational education programs! The handbook will provide the materials to allow vocational administration to conduct school based studies.

INDIANA UNIVERSITY - IDENTIFICATION OF EFFECTIVE PRACTICES IN PLACEMENT AND FOLLOW-UP
Product: A document providing results of a national review of exemplary post-secondary and secondary placement and follow-up practices! The study will identify common successful procedures.

VINCENNES UNIVERSITY - FOLLOW-UP ON NO-SHOWS AND DROPOUTS
OF POST-SECONDARY STUDENTS

Product: Follow-up materials and guidelines appropriate for conducting the follow-up studies of post-secondary school vocational education dropouts! The model will include computerized techniques for processing data.

PURDUE RESEARCH FOUNDATION - STATEWIDE SYSTEM OF FOLLOW-UP FOR VOCATIONAL GRADUATES

Product: A standardized follow-up instrument and a system for data interpretations! The instruments and procedures will provide the potential for a uniform state follow-up program (Indiana Vocational Education Communique, 1975).

The follow-up information is designed in such a way that it conforms to federal reports and is easy to retrieve since data are computerized. The placement and follow-up project has not yet been adapted by the state of Indiana; however, five schools are participants in the placement activities and follow-up project and these activities may be continued for another year. (Communique, 8th Issue, 1975, p.2)

Iowa

Follow-up studies have existed for the past five or six years. The students who participate in approved offerings in a career education program either at the secondary schools or area community colleges are surveyed. Data on these students are collected annually and computerized.

Areas of interest in this type of follow-up study include: a number of secondary and post-secondary students who completed approved career education programs, the employment status of these people, the weekly wages they receive, the primary reasons for non-employment of these students, those going on into some type of further education into military status, the number of secondary and post-secondary students with special needs who completed the career education programs, students completing in the various service areas of the comprehensive secondary and post-secondary programs and their status regarding employment.

While the follow-up study was entered into with some reluctance in the beginning, local areas recognized the importance of knowing such data in that it assisted them in curriculum development. There is an annual follow-up study of all high school graduates. The state is concerned in knowing what graduates are doing as far as job placement one year after high school graduation.

There is an annual dropout survey which lists the dropouts at state, county, area and local district levels. This information is useful to curriculum developers as well as in determining program needs. Concern is for having proper programs so that jobs are available to the people completing those programs.

As part of the guidance program, spoken to at the state level, it includes vocational placement, educational placement and social placement, but to many, this is interpreted as having a primary focus on job placement activities. At present, there is no statewide placement activity;

however, a significant effort has been made in the Des Moines area in that a project has been funded by the state to establish a placement center, which is now housed at the vocational-technical school in Des Moines. The project is concerned with job placement both on a part-time basis, as well as, for those individuals who have completed programs within the area. This included all schools in the Des Moines area. Because of its favorable acceptance in this district, it has been suggested that a statewide effort be made in the area of placement activities.

The placement activities that do occur become the responsibility of the local guidance department within the school district in conjunction with the vocational educators. There is no cooperation at the state level between the state employment agency and the employment of students coming out of approved career education or vocational education curriculums. Some cooperation however, may occur at the local level.

The state vocational education staff stands ready to assist area community colleges through their student services activities. Each area community college has a coordinator of placement who deals directly with agencies in the community such as the Veteran's Administration and the local Office of Employment Security. The Department of Vocational Rehabilitation provides personnel to the local community college and they collect data on placement for disabled individuals.

In this era of accountability counselors are becoming more visible. Presently, research is being conducted at the University of Iowa, to determine how to better educate counselors. Past emphasis in their training has focused on their ability to assist students in educational placement and social placement perhaps to the neglect of job placement and follow-up.

Michigan

During the 1974-75 school year, of the 135,509 secondary graduates there were 53,000 vocational education graduates. All 89,000 graduates including all vocational education graduates were vocational graduates followed up. Vocational graduates gave a 65% return and non-vocational gave a 53% return. This is quite an improvement over the 48% return of the 1973-74 graduates.

There are no official state guidelines for placement in Michigan however, placement activities have been conducted in the state since 1970. At the present time, Michigan personnel are studying the types of people who seem to deliver placement services most effectively for the purpose of building training programs to develop effective placement competencies. Presently, local personnel with the responsibility for placement are fulltime area center placement personnel, part-time counselors, co-op coordinators, and school principals. During the 1970-71 school year, 9 placement projects generated base information for further development of placement programs. As a result of these projects, a committee composed of educators, labor and industry representatives and placement personnel was organized to produce a placement guide for school-based placement in Michigan.

In the placement guide, school-based placement is defined. "School-based placement services cover the entire range of assistance offered by a school to help the student develop and implement his or her career plan. These services help students to choose and successfully reach placement goals consistent with their aptitudes, interests, and abilities."^{aa}

In relation to availability of services, the authors of the guide say that "a placement program should serve students on a 12-month basis and provide services for at least one year after they leave school."^{bb}

In March, 1975, legislation was introduced to establish placement services and procedures in Michigan school districts. The State House of Representatives passed the legislation; however, because of fiscal implications, the Senate is continuing to consider the house bill. At the same time the Michigan State Board of Education formulated a position paper on placement that was printed in April, 1975.

Solution guidelines for area placement were disseminated in November, 1974 to Michigan secondary schools to promote coordination of local districts in the development and financial support of projects. Consequently, eighteen placement projects were funded with \$590,000 of Part B funds. Of the 529 school districts in Michigan, 274 are involved in the eighteen placement projects and the majority of students being served are vocational students.

Minnesota

Since 1970 a systematic post-secondary follow-up has been conducted in Minnesota. The University of Minnesota was awarded the initial project to develop the follow-up instruments, procedure and analysis. Until 1975 all follow-up activities were carried on through this project by the University of Minnesota. In 1976 a private organization, the National Computer System, financed by the Minnesota vocational division to conduct the project. Their follow-up system involves sending questionnaires to graduates and their employers one year after completion of the vocational program. Three major categories of information were collected: 1) biographical information, 2) termination information, and 3) graduate follow-up information. If the first questionnaire is not filled out and returned, a second questionnaire is mailed. If the second questionnaire is not returned, people are contacted by telephone. The follow-up effort must achieve at least an 80% response rate.

At the secondary level, follow-up instruments and procedures were developed by the University of Minnesota Research Coordinating Unit. Individual secondary school districts are not required to participate in follow-up studies because of the non-vocational student enrollment. Financial support of follow-up is mainly the responsibility of the secondary school.

In relation to placement, Minnesota vocational instructors have the primary responsibility for the placement of students; however, a few of the large area vocational technical institutions employ placement specialists. Instructors are considered to be important participants in placement activities so that the instructors may check the relevancy and validity of course content.

The state vocational division has developed guidelines for program performance in relation to placement. If these established standards are not realized in a vocational program, state staff investigate possible problems. Generally, if the standards listed below are not achieved for two successive years, the vocational program is discontinued.

- 1) At least 51% of the graduates must be employed in related jobs during the two years after graduation.

- 2) The percentage of dropouts should not exceed the state average by more than 20%.
- 3) Employers' evaluations of graduates should not fall below the state average by more than 15%.

Presently four Minnesota high schools are involved in a pilot project, Secondary Placement and Counseling Effort, (SPACE). The project is designed to provide a comprehensive approach to counsel 12th grade students to prepare for a goal after graduation. Project funds support a placement specialist and a part-time counselor in each participating school. The project includes an assessment of students to find out their goals upon graduation and to survey their job seeking and school application skills. State employment agencies are cooperating with SPACE.

Ohio

Ohio vocational education personnel conduct annual follow-up studies of graduates one year after completion of funded vocational programs. Standardized questions are included on the questionnaire to meet the reporting requirements of the federal government. However, the local district may develop a more detailed follow-up study system for their own use. In fiscal year 1978 an in-depth study of the follow-up system will be conducted. Meanwhile, a computerized follow-up study through federal income tax returns of 1970 graduates are being explored.

In Ohio there is a philosophical conflict concerning who should be responsible for providing placement services. Vocational state personnel are now being pressured to set up job placement systems in Ohio schools; however, with a 95 percent placement rate, they do not feel that a new system is needed. Vocational personnel do not see a need to duplicate the processes of employment agencies. Ohio vocational state staff view teachers as having primary responsibility for placement of students, for this process promotes an orderly curriculum change.

Since 1965 local districts could substitute a placement supervisor for a vocational guidance counselor if the placement supervisor met the supervisory requirements in one of the service areas in vocational education. However, school districts have employed vocational guidance counselors instead of placement coordinators.

At the present time the state standard ratio of one counselor to 400 students is being met. One of the nine functions of the vocational guidance counselor in Ohio is to provide placement services. Generally these counselors place those students who are difficult to place. If the counselors perform all of their functions well, state department personnel see absolutely no need to form a cadre of placement personnel.

Since 1965 state vocational education personnel have funded summer workshops followed by seminars to make it possible for guidance counselors to become certified vocational guidance counselors. In fiscal year 1976, 1,794,095 million dollars of vocational funds were budgeted to support workshops for vocational guidance counselors and to reimburse \$5,000 to \$5,500 of each vocational guidance counselor's salary. Over 2,000 counselors have participated in these two to three week programs at an annual cost of \$150,000 to \$200,000. University faculties have not altered their programs to meet this educational need, so vocational education monies continue to support the effort.

According to Ohio State Vocational personnel the deficiency of Ohio's placement system is in the area of job development. In the 1950's local vocational directors were part of the employment community; however, in the 1970's the vocational director plays an administrative role. As directors gave up their job development role, job development became a major problem in Ohio. To reestablish job development activities Ohio state personnel funded a project with special needs monies. Project staff were responsible for establishing rapport and communication with community employers for placement of students with special needs. Another method of meeting the job development needs was to employ business and industry coordinators in local districts. Fifty-percent of the salary was paid with state funds. These coordinators were non-educators with the responsibility of working through development groups to attract business to the community. Four business and industry coordinators are now employed in the state. In addition, Ohio state personnel have explored the possibility of placing employment service personnel in vocational school centers.

Wisconsin

Each year the Wisconsin Board of Vocational, Technical and Adult Education conducts a Student Follow-Up Study of former full-time students who have been enrolled in programs offered in each of Wisconsin's sixteen post-secondary VTAE districts. This statewide follow-up study fulfills Department of Health, Education and Welfare requirements for follow-up in programs receiving Federal funds for vocational education.

Follow-up data is obtained through a questionnaire survey administered by each VTAE district. Each district surveys former full-time, post-secondary students who were enrolled in VTAE programs during the previous fiscal year. These former students are classified as "Completer," "Non-completer," "Withdrawal" or "Other," depending upon their percentage of completion of course work toward a degree or diploma. Information collected in the survey relates to nature of each student's placement (type, relationship to VTAE training, pay, location); a report of the student's satisfaction with VTAE training programs; and present and future employment or educational plans.

Results of the follow-up are used in future program planning and evaluations, and in assisting currently enrolled students with their post-school planning. The follow-up study of 1975 was conducted in cooperation with the Wisconsin Vocational Studies Center. The 11,431 former students who responded to the questionnaire represented 63 percent of all the regional students surveyed.

At the high school level, Wisconsin vocational "CAPSTONE" students are followed-up in the first year after graduation to determine their post-school status. The information requested by the Wisconsin Department of Public Instruction fulfills the follow-up requirement under the Federal Act. Information requested in the follow-up covers: nature of employment status (part-time, full-time); nature of continued education (college, vocational-technical, on-the-job training); relationship to preparation received in high school, and "setting." Approximately 20,000 "CAPSTONE" students are followed-up annually after completing Wisconsin high school vocational programs.

In addition to the regular follow-up study, placement has been the focus of research and pilot programs in Wisconsin during 1974-76. The Wisconsin Vocational Studies Center, under a grant from the U.S. Office of Education, Bureau of Vocational and Adult Education, conducted a placement survey of current and former students at both the high school and post-secondary, vocational-technical school levels. This study sought to determine placement needs of students making transition from school into further education/training or jobs. Providers of placement services-- e.g. counselors vocational class instructors, and placement specialists-- were also surveyed. Resulting from the analysis of the survey data, a model "Career Placement Delivery System" was developed for school-based placement programs. The model is described as a comprehensive program of instruction, guidance, and referral systems involving coordination of school and community resources.

Pilot placement programs, based upon the model Career Placement Delivery System developed in 56 Wisconsin public high school districts during the 1975-76 school year. These pilot projects represented a consortium arrangement of joint financing and administration between the Wisconsin Department of Public Instruction (Bureau for Career and Manpower Development) and the Job Service Wisconsin. Through working agreements between a field office of the Job Service and one or more schools, an employed Job Service placement specialist was stationed at participating schools. Each specialist provided job placement assistance to students seeking employment. The success of these pilot programs has stimulated many new projects for the next school year. Nearly one-fourth of Wisconsin's public high schools may be participating in this consortium arrangement in 1976-77.

Presently guidelines and regulations related to placement have not been established at the post-secondary level. Rather each district autonomously determines their own placement activities. As an example, one district conducts its placement activities through its program advisory committees and course instructors, while another district utilizes a full-time placement director who handles all aspects of placement including job development within the community. However, the VTAE fully supports the philosophy and necessity of job placement and is open to what ever will assist in these efforts.

Data Relating to Follow-Up Activities

Table 5 provides follow up information on the numbers of students who completed program requirements in secondary vocational education for the fiscal year 1974 in each of the seven states. The percentages range from 16.9 to 35.9% who were not available for placement. In terms of students who were available for placement the percentages range from 27.5% for the state of Michigan to 74.2% for the state of Ohio. The Michigan percentage is obviously very low, however, because they show 55.6% in the status unknown category which really indicates that the follow-up has been incomplete, not accounting for a majority of their students. It can be noted that the status unknown percentages for the other states is much smaller.

The table also displays the percentage of students placed in the field trained or a related field in fulltime positions. It is seen that no state indicated their placement at less than 50% and it ranged to a high of 81.2% for Minnesota. There is considerable range in the un-

Table 5: Follow-up of Secondary Vocational Education Students - FY 1974

States	Illinois	Indiana	Iowa	Michigan	Minnesota	Ohio	Wisconsin
Grade 9-12 enrollments	809,885	884,780	214,132	702,540	323,824	778,210	361,665
Completed Program Requirements	85,433	16,346	7,173	56,124	28,752	44,462	18,669
Not Available for Placement	30,640	4,745	1,662	9,469	9,488	8,875	5,990
%	35.9	29.0	23.2	16.9	33.0	20.0	32.1
Continuing Education at Higher Level	24,851	2,565	1,375	6,015	9,142	4,647	4,342
%	31.1	54.1	82.7	63.5	96.4	52.4	72.5
Other Reasons	5,789	2,180	287	3,454	346	4,228	1,648
%	18.9	45.9	17.3	36.5	3.6	47.6	17.5
Available for Placement	40,488	10,247	5,086	15,428	16,436	32,986	11,014
%	47.4	62.7	70.9	27.5	57.2	74.2	44.4
Employed in Field Trained or Related (Full-Time)	22,907	7,989	3,768	7,845	13,350	24,632	8,775
%	56.6	78.0	74.1	50.8	81.2	74.7	73.0
Unemployed	3,685	435	88	1,490	673	2,476	560
%	9.1	4.2	1.7	9.7	4.1	7.5	4.7
Other Employment	13,896	1,823	1,230	6,093	2,413	5,878	2,686
%	34.3	17.8	24.2	39.5	14.7	17.8	22.3
Status Unknown	14,305	1,354	425	31,227	2,828	2,601	660
%	16.7	8.3	5.9	55.6	9.8	5.8	3.5

Note: ^a State's Federal 346 - 4 reports for FY '74.

employment percentage with a low of 1.7% for Iowa to a high of 9.7% for Michigan.

The follow-up results for post-secondary students in vocational education for the fiscal year 1974 is shown in Table 6. The range in percent of students available for placement is from 41% to 90%. The 41% figure in Michigan may be distorted since they report the status of 43% of the students to be unknown. It can be seen that the percentages of post-secondary students available for employment is quite high. It can also be seen that very large percentages ranging from 70.6% to 94% of those available for employment are placed in the field in which they were trained or in a related field. The unemployment rate while it varied among the states is relatively low, ranging from 1.4% for Iowa to a high of 5.9% for Indiana. In comparing unemployment ratios of high school graduates and post-secondary students there does not seem to be a consistent pattern. The comparison of Tables 5 and 6 show that in some states high school vocational graduates have a lower rate of unemployment than post high school graduates and in other states just the opposite is true.

Enrollments by Level

As can be seen in Table 7, females predominate in their attendance in Vocational Education courses at both the secondary and post-secondary levels. This might be expected since females slightly outnumber males in the general population. Two exceptions to this case are noted in Minnesota and Wisconsin where 61.4% and 52.6% respectively are males.

At the secondary level females outnumber males in enrollment in the states of Illinois (78%), Indiana (66.6%), Michigan (55.8%), and Ohio (51.5%). The opposite is true in the states of Iowa, Minnesota, and Wisconsin. Wisconsin enrollments at the secondary level are predominately male (60.5%), in Iowa (56.1%), and in Minnesota (54.9%).

At the post-secondary level enrollments are obviously predominately male. The female enrollment is the lowest with 4.6% enrolled at this level in Ohio to 22% in Wisconsin.

Adult level enrollments range from 48.3% female in Iowa to a low of 7.9% in the state of Illinois. When considering persons in preparation at the adult level these are either not noted or are predominately male showing the highest enrollment of females in Illinois 40.1% to a low of 7.5% in Ohio. A very high enrollment of males is also noted in the apprenticeship program at the adult level where the highest enrollment of females occurs in Michigan 9.2% to a low of 1% in the state of Iowa. The supplemental programs at the adult level reflect high enrollments of females in all states considered in this study. They range from 54.9% in Illinois to 99% in Iowa.

Enrollments by Program

Since the highest percents of farm income are seen in Iowa, Ohio, Minnesota and Indiana, it might be expected that the highest enrollments in the area of agriculture would occur in these states. Agriculture enrollments for these states are: Indiana (15.3%), Iowa (14.1%), and Minnesota (13.6%). Enrollments in this area are predominantly male

Table 6: Follow-up of Post-Secondary Vocational Education by Students - FY 1974^a

States	Illinois	Indiana	Iowa	Michigan	Minnesota	Ohio	Wisconsin
Completed Program Requirements	18,648	3,079	7,834	19,377	21,886	6,681	10,315
Not Available for Placement	2,804	225	555	3,028	1,572	583	496
%	15.0	7.3	7.1	15.6	7.2	10.2	4.8
Continuing Education at Higher Level	2,167	182	312	1,208	620	469	310
%	77.3	80.4	55.9	30.0	39.4	68.7	62.5
Other Reasons	637	43	246	1,820	952	214	186
%	22.7	19.1	44.1	60.1	60.6	31.3	37.5
Available for Placement	13,404	2,772	6,305	7,959	19,241	6,318	6,907
%	71.9	90.0	83.5	41.1	87.9	79.6	67.0
Employed in Field Trained or Related (Full-Time)	11,349	2,520	5,728	6,005	15,741	4,998	4,875
%	84.7	90.9	90.8	75.4	81.8	79.0	70.6
Unemployed	459	164	91	264	1,014	143	350
%	3.4	5.9	1.4	3.3	5.3	2.7	5.1
Other Employment	1,596	88	486	1,690	2,488	177	1,682
%	11.9	3.2	7.7	21.2	12.9	3.3	24.4
Status Unknown	2,440	82	971	8,390	1,075	680	2,912
%	13.1	2.7	12.4	43.3	4.9	10.2	28.2

Note. ^aSource: Federal 314 reports for FY '74.

Table 7: Vocational Education Enrollment by Level and Sex

States	Illinois	Indiana	Iowa	Michigan	Minnesota	Ohio	Wisconsin
Grand Total Vocational Enrollments (Unduplicated)	681,071	174,698	297,877	433,751	331,090	544,396	347,303
Total Female (Unduplicated)	NA	89,233	160,598	225,947	127,643	280,623	164,805
%		51.1	53.9	52.1	38.6	51.5	47.4
Secondary	531,977	116,384	130,661	241,973	149,371	280,485	137,124
%	78.0	66.6	43.9	55.8	45.1	51.5	39.5
Post-Secondary	95,912	11,000	23,198	89,190	40,279	24,827	76,509
%	14.1	6.3	7.8	20.6	12.2	4.6	22.0
Adult ^d	54,082	47,314	144,018	102,588	141,440	239,084	133,730
%	7.9	27.1	48.3	23.7	42.7	43.9	38.5
Preparatory	21,688	11,841		36,301		17,997	22,172
%	40.1	25.0		35.4		7.5	16.6
Supplemental	29,713	28,598	142,550	56,831	130,827	211,247	105,393
%	54.0	61.2	99.0	55.4	92.5	88.4	78.8
Apprenticeship	2,681	6,515	1,468	9,456	10,613	9,840	6,165
%	5.0	13.8	1.0	9.2	7.5	4.1	4.6

Note. ^a Source: Federal 346-3 reports for FY '75.

^b Percents of grand total vocational enrollments are recorded for female, secondary, post-secondary and adult students.

^c Grade 9-12 enrollments in the six major program areas of Agriculture, Distribution, Health, Home Economics, Office and Trade & Industry and special programs.

^d Percents under the adult categories of preparatory, supplemental, and apprenticeship are percents of total adult enrollment.

Table 8: Vocational Education Enrollment at Secondary, Post-Secondary and Adult Levels

States	Illinois		Indiana		Iowa		Michigan		Minnesota		Ohio		Wisconsin	
	Total	Female	Total	Female	Total	Female	Total	Female	Total	Female	Total	Female	Total	Female
Grand Total (Unduplicated)	1,604,889	NA	174,698	89,233	297,877	160,598	433,751 ^a 384,828 ^b	225,947 ^a 200,507 ^b	331,090	127,643	698,959	357,220	347,363	164,805
%				51.1		53.9		42.1		38.6		51.1		47.4
Agriculture	31,116		26,729	2,434	41,895	3,384	15,766	7,277	45,116	6,875	40,027	6,070	12,981	3,169
%	1.9		15.3	9.1	14.1	8.1	4.1	3.3	13.6	15.2	5.7	15.2	9.5	9.6
Distribution	38,452		7,261	3,828	7,463	3,094	40,415	16,443	21,105	9,697	82,720	43,768	19,233	8,215
%	2.4		4.2	52.7	2.5	41.5	10.5	8.2	6.4	45.9	11.8	52.9	5.5	42.7
Health	25,079		5,299	1,748	45,967	39,246	29,564	26,269	13,856	10,899	31,353	15,240	17,152	15,086
%	1.6		3.0	33.0	15.4	85.4	7.7	13.1	4.2	78.7	4.5	48.6	4.9	88.0
Consumer and Hmkg	30,181		67,284	61,215	70,862	60,222	90,023	74,913	69,971	53,843	144,454	121,997	59,531	52,279
%	1.9		38.5	91.0	23.8	85.0	23.4	37.4	21.1	77.0	20.7	84.5	17.1	87.8
Occupational H.E.	67,488		1,926	1,518	5,126	4,671	12,824	9,307	12,518	8,747	16,067	13,585	11,029	8,469
%	4.2		1.1	78.8	1.7	91.1	3.3	4.6	3.8	69.9	2.3	84.6	3.2	76.8
Office	238,039		16,789	12,886	22,723	16,544	63,335	47,709	38,167	31,996	67,169	53,350	88,349	62,460
%	14.8		9.6	76.8	7.6	72.8	16.5	23.8	11.5	83.8	9.6	79.4	25.4	70.7
Technical	14,598		1,232	95	2,538	209	20,631	2,977	8,538	717	7,229	309	11,993	1,333
%	.009		.01	7.7	.009	8.2	5.4	1.5	2.6	8.4	1.0	4.3	3.5	11.3
Trade and Industry	217,386		44,380	4,271	39,425	5,084	112,270	20,202	84,604	4,869	106,196	12,339	104,309	12,568
%	13.5		25.4	9.6	13.2	12.9	29.2	10.1	25.6	5.8	15.2	11.6	30.0	12.0
Other	942,550		3,798	1,334	61,878	28,154	33,250 ^c	17,290 ^c	37,215		203,744	90,562	2,786	1,226
%	58.7		2.2	35.1	20.8	45.5			11.2		29.1	44.4	.008	44.0

^aSource: Federal 346-3 reports for FY '75.

^bMichigan's total for regular students only.

^cEnrollment count in Michigan's "other" programs is a duplicate count of the program enrollments.

Program area percents were calculated using grand total enrollment figures.

with the highest percentages of female enrollments occurring in the states of Minnesota and Ohio which both show 15.2%. (See Table 8).

Enrollments in the area of distribution are the highest in Ohio with 11.8% and Michigan with 10.5%; lowest in this area is the state of Iowa with 2.5%. Distribution enrollments tend to be predominantly female in the states of Indiana and Ohio while Minnesota, Wisconsin and Iowa show slightly less than half of their enrollments to be female. Male enrollments predominate in the state of Michigan in the area of distribution showing female enrollments to be 8.2%.

Iowa leads the seven states in its percentage of health enrollees with 15.4%. Lowest in enrollments of the states is Indiana with 3% enrolled in health. Enrollments in the health area are predominantly female in Wisconsin with 88%, Iowa 85.4% and Minnesota 78.7%.

As might be expected enrollments in the area of consumer homemaking is predominantly females. Enrollments from 91% females in Indiana to a low of 77% female in Minnesota. When considering total enrollments, Indiana ranks highest with 38.5% and Illinois the lowest with 1.9% in consumer homemaking.

Occupational home economics is participated in by as high as 4.2% vocational education enrollees in Illinois and as low as 1.1% in Indiana. Enrollments in this occupational area are second lowest only to the technical area which shows a range of percent enrollment from .01% in the states of Illinois, Indiana and Iowa to a high of 5.4% in Michigan.

Enrollments in the area of office, range from 25.4% in Wisconsin to a low of 7.6% in Iowa. This area is dominated by female students with the exception of Michigan showing a total enrollment of 16.5% enrolled in this area, 23.8% of them being female.

Trade and industry enrollments reach a high of 30% in Wisconsin to a low of 13.2% in Iowa. Males dominate the trade and industry area with Minnesota showing the highest percent of males and Iowa with the least highest percent of males.

Enrollments of the Disadvantaged

Table 9 shows that each of the seven states is serving a substantial number of disadvantaged in the vocational, technical education programs. The percentage of disadvantaged served ranges from a low of 3.1% for Michigan to a high of 17.1% for Ohio as a part of the total number served in vocational and technical education. Data were not available from several of the states on sex; however, it is shown that 68.2% of the disadvantaged were female for Iowa, 52% in Michigan, 50.6% in Wisconsin and 32.5% for Ohio.

There is considerable variation among the states in the percent of handicapped students served at each level. Approximately 75% or greater of the number of disadvantaged being served, are served at the secondary level in the states of Ohio, Michigan, Minnesota, Indiana and Illinois. In Wisconsin the percentage is 38%. The percent served at the post-secondary ranges from 2.7% in Ohio to 32.8% in Wisconsin. Likewise there is considerable variation in terms of degree to which adults are served. Again it ranges from 2.9% of those being served to 29.2%.

Three states, Illinois, Indiana, and Michigan serve 91% or more of

Table 9: A Comparison of General Vocational Enrollments and Disadvantaged Enrollments by Level - FY 1975

States	Illinois	Indiana	Iowa	Michigan	Minnesota	Ohio	Wisconsin
Grand Total Vocational Enrollments	681,071	179,698	297,877	433,751	331,090	544,396	347,363
Grand Total Disadvantaged Enrollments (Unduplicated)	116,010	11,707	51,103	13,204	26,697	92,897	22,302
%	17.0	6.7	17.2	3.1	8.1	17.1	6.4
Total Female (Unduplicated)	NA	NA	34,849	6,866	NA	30,153	11,280
%			68.2	52.0		32.5	50.6
Secondary	99,874	10,817	27,933	11,218	19,982	74,068	5,487
%	86.1	92.4	54.7	85.0	74.8	79.8	38.1
Post-Secondary	12,746		11,796	1,271	5,860	2,539	7,313
%	11.0		23.1	9.6	22.0	2.7	32.8
Adult	3,390	890	11,374	715	855	16,220	6,502
%	2.9	7.6	22.3	5.4	3.2	17.5	29.2
Preparatory	3,144	810		715		3,767	609
%	92.7	91.0		100.0		23.2	9.4
Supplemental	246	80	11,374		855	12,418	5,464
%	7.3	9.0	100.0		100.0	76.6	84.0
Apprenticeship						35	429
%						.002	6.6

Note. ^a Source: Federal 346-3 reports for FY '75.

^b Percents of female enrollees are percents of the grand total disadvantaged enrollment.

^c Percents under the adult categories of preparatory, supplemental, and apprenticeship are percents of total adult enrollments.

the handicapped adults served in preparatory type of programs. Iowa, Minnesota, Ohio and Wisconsin serve the majority of those being served in supplemental type programs. Only two states - Ohio and Wisconsin reported serving any handicapped persons in apprenticeship.

Enrollments of the Handicapped

While the handicapped populations within the seven states considered are not known, handicapped enrollments in vocational education have been reported. Handicapped persons being served by the vocational educational systems within the states range from 0.9% in Michigan to 3.1% in Illinois. The average percent being served is 2% across the states. Female handicapped individuals are being served more than males in the states of Indiana, Michigan and Wisconsin while males are served more often than females in the states of Iowa and Ohio.

The percent of handicapped students being served at the secondary level are highest in Indiana (100%), Ohio (96.2%), Michigan (90.4%) and Illinois (70.4%). Less than half of the handicapped are being served at the secondary level in Minnesota (49.4%), Wisconsin (41%) and Iowa (29.4%).

At the post-secondary level the largest percentage of handicapped individuals being served are found in the states of Iowa (70.6%) and Minnesota (46%).

At the adult level handicapped enrollees are being served mainly in the states of Illinois and Wisconsin. Illinois has indicated 23.4% of their handicapped population are enrolled in adult courses, 98.9% of these enrollees are in preparatory programs and 1.0% are in supplemental programs. Wisconsin shows 42% of their vocational education is directed toward the adult enrollees of which 28.8% are in preparatory programs and approximately 71% are in supplemental programs (see Table 10).

Enrollments of Minority Groups

Four states provided information concerning minority enrollments in vocational education as can be seen in Table 11.

The highest enrollment of minority groups occurs in the states of Michigan and Ohio showing 18.1% and 18.7% respectively. The highest percent of American Indian enrollees occurs in the state of Wisconsin showing 14.1% enrollment followed by Iowa with 7.3%. All states considered in this table show blacks to predominate as the major minority group. The highest percent of black population occurs in Ohio with 93.5% and while the lowest black enrollment is found in Wisconsin with 57.3%.

Persons of the Spanish background showing a high of 28.8% enrollment in Wisconsin and a low of 5.1% in Ohio. Asians or Pacific Islanders occur as enrollees the least, they range from 6.7% in Wisconsin to a low of 0.8% in Ohio.

Table 10: A Comparison of General Vocational Education Enrollments and Handicapped Enrollments by Level

States	Illinois	Indiana	Iowa	Michigan	Minnesota	Ohio	Wisconsin
Grand Total Vocational Enrollments	681,071	174,698	297,877	433,751	331,090	544,396	347,363
Grand Total Handicapped Enrollments (Unduplicated)	20,983	3,331	5,317	3,815	6,537	13,285	6,939
%	3.1	1.9	1.8	0.9	2.0	2.4	2.0
Total Female (Unduplicated)	NA	1,174	2,128	1,984	NA	2,429	4,237
%		53.3	40.0	52.0		18.3	61.1
Secondary	14,780	3,331	1,564	3,447	3,228	12,780	2,843
%	70.4	100.0	29.4	90.4	49.4	96.2	41.0
Post-Secondary	1,297		3,753	350	3,009	232	1,175
%	6.2		70.6	9.2	46.0	1.7	16.9
Adult	4,906			18	300	273	2,921
%	23.4			.005	4.6	2.1	4.1
Preparatory	4,852			18		105	842
%	98.9			100.0		38.5	28.8
Supplemental	54				100	168	2,072
%	1.0					61.5	70.9
Apprenticeship							7
%							.002

Note. ^aSource: Federal 346-3 reports for FY '75.

Percents recorded for female, secondary, post-secondary and adult students reflect percentages of the grand total enrollment for each state. Percents recorded for adult categories: preparatory, supplemental, and apprenticeship reflect percentages of each state's total adult enrollment.

Table 11: Minority Enrollments in Vocational Education at all Levels

States	Illinois	Indiana	Iowa	Michigan	Minnesota	Ohio	Wisconsin
Grand Total Vocational Enrollments (Unduplicated)	NA	NA	297,877	433,751	331,090	698,959	347,363
Grand Total Minority Enrollments	NA	NA	6,502	78,320		130,887	18,346
%			2.2	18.1		18.7	5.3
American Indian or Alaskan Native			474	2,327		781	2,605
%			7.3	3.0		0.6	14.1
Black, Not of Hispanic Origin			4,390	69,425		127,386	10,573
%			67.5	88.6		94.5	57.3
Asian or Pacific Islander			392	1,633		1,092	1,235
%			6.0	2.1		0.8	6.7
Hispanic			1,246	4,935		5,623	4,023
%			19.2	6.3		5.1	21.8
White, Not of Hispanic Origin			291,375	355,431		568,072	328,927
%			97.8	81.9		81.3	94.7

Note. ^aSource: Federal 346-1 reports for FY '75.

^b(NA) Data Incomplete for Illinois, Indiana and Minnesota.

CHAPTER III
FUNDING FOR VOCATIONAL EDUCATION
IN THE MIDWEST REGION

Important to the appraisal and understanding of vocational education in the states being considered is the level of funding and method through which funds are made available.

Funding Activities by States

In this section a brief description is provided for each state on the method used to allocate and distribute vocational education funds. An attempt is made to discuss federal, state and local funds and to provide some indication for the magnitude of each. Funding and method of allocation is discussed also by level including high school, post-high school and adult.

Illinois

In general secondary occupational orientation programs and secondary, post-secondary and adult occupational experience programs are supported by federal, state and local funds. Special contractual activities are supported by federal and local funds.

Specifically, the Division of Vocational and Technical Education of Illinois has prepared a listing of approved occupational programs. The listing includes the U.S. Office of Education code number, the occupational program titles, and a column entitled "funding priority." These are in three categories: A, B and C. By referring to their standard reimbursement chart it is possible to calculate the amount of reimbursement by taking into consideration the code, the base for the particular level of instruction, plus a factor, plus an ability to pay factor. (See Figure 1).

IV. Allocation of Funds

A. Basic Funding

Funds will be allocated to local educational agencies based on one of the three following means:

- * Secondary and Post-Secondary credit programs will be reimbursed per units of credit.
- * Adult non-credit occupational programs will be reimbursed on student contact hours.

Figure 1:

REIMBURSEMENT CHART

DIVISION OF VOCATIONAL AND TECHNICAL EDUCATION

CODE	BASE	FACTOR	ABILITY TO PAY FACTOR								
			0%	10%	20%	30%	40%	50%	60%	70%	80%
4	ELEMENTARY BASE		\$.75	\$.82	\$.90	\$.97	\$ 1.05	\$ 1.12	\$ 1.20	\$ 1.27	\$ 1.35
1-A	SECONDARY BASE		\$50.00	\$55.00	\$60.00	\$65.00	\$70.00	\$75.00	\$80.00	\$85.00	\$90.00
1-B			30.00	33.00	36.00	39.00	42.00	45.00	48.00	51.00	54.00
1-C			15.00	16.50	18.00	19.50	21.00	22.50	24.00	25.50	27.00
3			10.00	11.00	12.00	13.00	14.00	15.00	16.00	17.00	18.00
1-A		30%	\$50.00 + \$15.00	\$70.00	\$75.00	\$80.00	\$85.00	\$90.00	\$95.00	\$100.00	\$105.00
1-B			30.00 + 9.00	42.00	45.00	48.00	51.00	54.00	57.00	60.00	63.00
1-C			15.00 + 4.50	21.00	22.50	24.00	25.50	27.00	28.50	30.00	31.50
3			10.00 + 3.00	13.00	14.00	15.00	16.00	17.00	18.00	19.00	20.00
1-A		50%	\$50.00 + \$25.00	\$75.00	\$80.00	\$85.00	\$90.00	\$95.00	\$100.00	\$105.00	\$110.00
1-B			30.00 + 15.00	45.00	48.00	51.00	54.00	57.00	60.00	63.00	66.00
1-C			15.00 + 7.50	22.50	24.00	25.50	27.00	28.50	30.00	31.50	33.00
3			10.00 + 5.00	15.00	16.00	17.00	18.00	19.00	20.00	21.00	22.00
1-A		30% + 50%	\$50.00 + \$15.00 + \$25.00	\$90.00	\$95.00	\$100.00	\$105.00	\$110.00	\$115.00	\$120.00	\$125.00
1-B			30.00 + 9.00 + 15.00	54.00	57.00	60.00	63.00	66.00	69.00	72.00	75.00
1-C			15.00 + 4.50 + 7.50	27.00	28.50	30.00	31.50	33.00	34.50	36.00	37.50
3			10.00 + 3.00 + 5.00	19.00	19.00	20.00	21.00	22.00	23.00	24.00	25.00
1-A	ADULT BASE		\$.30	\$.33	\$.36	\$.39	\$.42	\$.45	\$.48	\$.51	\$.54
1-B			.18	.20	.22	.23	.25	.27	.29	.31	.32
1-C			.09	.10	.11	.12	.12	.14	.14	.15	.16
1-A		30%	\$.30 + \$.09	\$.39	\$.48	\$.57	\$.66	\$.75	\$.84	\$.93	\$ 1.02
1-B			.18 + .054	.23	.29	.34	.40	.45	.50	.56	.61
1-C			.09 + .027	.12	.14	.17	.20	.22	.24	.27	.31
1-A		50%	\$.30 + \$.15	\$.45	\$.60	\$.75	\$.90	\$ 1.05	\$ 1.20	\$ 1.35	\$ 1.50
1-B			.18 + .09	.27	.36	.45	.54	.63	.72	.81	.90
1-C			.09 + .054	.14	.19	.24	.31	.36	.41	.47	.52
1-A		30% + 50%	\$.30 + \$.09 + \$.15	\$.54	\$.78	\$ 1.02	\$ 1.26	\$ 1.50	\$ 1.74	\$ 2.00	\$ 2.25
1-B			.18 + .054 + .09	.32	.47	.61	.75	.89	1.03	1.17	1.31
1-C			.09 + .027 + .054	.17	.25	.33	.41	.49	.57	.65	.73

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1. Ability to Pay factor applicable to all formula Endries.
2. 30% or 3 factor applicable to Local Organizational Structure and/or Local Organizational Structure.
3. 50% or 5 factor applicable to Handicapped and/or In-advantaged Factor.
4. 50%: Program priorities based on manpower needs and relative costs.
 4. Elementary - Occupational Introduction.
 3. Typically 9th and 10th Grade - Occupational Orientation.
 - 1-A, 1-B, 1-C: Occupational Training.



CODE	BASE	FACTOR	ABILITY TO PAY FACTOR								
			0%	10%	20%	30%	40%	50%	60%	70%	80%
COMMUNITY COLLEGE BASE											
Semester Credit											
1-A	\$ 7.50		\$ 7.50	\$ 8.25	\$ 9.00	\$ 9.75	\$10.50	\$11.25	\$12.00	\$12.75	\$13.50
1-B	4.50		4.50	4.95	5.40	5.85	6.30	6.75	7.20	7.65	8.10
1-C	2.25		2.25	2.47	2.70	2.92	3.15	3.37	3.60	3.82	4.05
30											
1-A	\$ 7.50	+ \$ 2.25	\$ 9.75	\$10.50	\$11.25	\$12.00	\$12.75	\$13.50	\$14.25	\$15.00	\$15.75
1-B	4.50	+ 1.35	5.85	6.30	6.75	7.20	7.65	8.10	8.55	9.00	9.45
1-C	2.25	+ .675	2.92	3.15	3.37	3.60	3.82	4.05	4.27	4.50	4.72
50											
1-A	\$ 7.50	+ \$ 3.75	\$11.25	\$12.00	\$12.75	\$13.50	\$14.25	\$15.00	\$15.75	\$16.50	\$17.25
1-B	4.50	+ 2.25	6.75	7.20	7.65	8.10	8.55	9.00	9.45	9.90	10.35
1-C	2.25	+ 1.125	3.37	3.60	3.82	4.05	4.27	4.50	4.72	4.95	5.17
30 + 50											
1-A	\$ 7.50 + \$ 2.25 + \$ 3.75		\$13.50	\$14.25	\$15.00	\$15.75	\$16.50	\$17.25	\$18.00	\$18.75	\$19.50
1-B	4.50 + 1.35 + 2.25		8.10	8.55	9.00	9.45	9.90	10.35	10.80	11.25	11.70
1-C	2.25 + .675 + 1.125		4.05	4.27	4.50	4.72	4.95	5.17	5.40	5.62	5.85
Quarter Credit											
1-A	\$ 5.00		\$ 5.00	\$ 5.50	\$ 6.00	\$ 6.50	\$ 7.00	\$ 7.50	\$ 8.00	\$ 8.50	\$ 9.00
1-B	3.00		3.00	3.30	3.60	3.90	4.20	4.50	4.80	5.10	5.40
1-C	1.50		1.50	1.65	1.80	1.95	2.10	2.25	2.40	2.55	2.70
30											
1-A	\$ 5.00	+ \$ 1.50	\$ 6.50	\$ 7.00	\$ 7.50	\$ 8.00	\$ 8.50	\$ 9.00	\$ 9.50	\$10.00	\$10.50
1-B	3.00	+ .90	3.90	4.20	4.50	4.80	5.10	5.40	5.70	6.00	6.30
1-C	1.50	+ .45	1.95	2.10	2.25	2.40	2.55	2.70	2.85	3.00	3.15
50											
1-A	\$ 5.00	+ \$ 2.50	\$ 7.50	\$ 8.00	\$ 8.50	\$ 9.00	\$ 9.50	\$10.00	\$10.50	\$11.00	\$11.50
1-B	3.00	+ 1.50	4.50	4.80	5.10	5.40	5.70	6.00	6.30	6.60	6.90
1-C	1.50	+ .75	2.25	2.40	2.55	2.70	2.85	3.00	3.15	3.30	3.45
30 + 50											
1-A	\$ 5.00 + \$ 1.50 + \$ 2.50		\$ 9.00	\$ 9.50	\$10.00	\$10.50	\$11.00	\$11.50	\$12.00	\$12.50	\$13.00
1-B	3.00 + .90 + 1.50		5.40	5.70	6.00	6.30	6.60	6.90	7.20	7.50	7.80
1-C	1.50 + .45 + .75		2.70	2.85	3.00	3.15	3.30	3.45	3.60	3.75	3.90

This BASE amount for funding was established for FY'75 by the State Board of Vocational Education and Rehabilitation for each level of education reflecting appropriations by Congress and the General Assembly. However, the amount available for distribution may necessitate prorating at less than 100% of the total claim.

- Elementary occupational information programs will be reimbursed per student enrollment.

The base amount for funding will be established annually by the State Board of Vocational Education and Rehabilitation for each level of education reflecting appropriations by Congress and the General Assembly.

B. Basic Claim

The basic claim will be computed by multiplying the number of students, units of credit, or contact hours as applicable for students enrolled in approved courses by the base amount set by the State Board of Vocational Education and Rehabilitation. The basic claim for Elementary is computed on the basis of students enrolled.

C. Additional Factors

In addition to the above basic amounts which are distributed to all eligible school districts, additional monies will be provided using one or more of the following weighted plus factors where applicable.

1. Factor I - Relative Ability to Pay

Each local agency which offers an approved occupational program qualifies for Factor I in relation to their relative wealth. Relative wealth will be determined annually as follows:

- a. Public School Districts - By comparing equalized assessed valuation, (tax base), per pupil by using the most recent published data by the Office of the Superintendent of Public Instruction.
- b. Public Post-Secondary Districts - By comparing equalized assessed valuation per Full Time Equivalent Students as certified by the Illinois Junior College Board. Adjustments will be made for Full Time Equivalent of first year district's operation by the average increase of second year over first in districts of the state.

Individual attendance centers and Junior College campuses in Chicago may be classified by the special need factor upon submission of required data to the Division.

A sliding scale from 0% to 100% of the base amount will be added to the base for each unit of each district's claim to more nearly equalized educational opportunities.

2. Factor II - Provisions for Education Disadvantaged Students

An additional 10% or 100% of the basic amount will be added to the reimbursement claim if a school offers additional services for disadvantaged persons. (Refer to Bulletin No. 40-273, "Occupational Education for Disadvantaged and Handicapped Persons." This amount will be computed on the number of student units of credit earned by such persons.

3. Factor III - Special Organizations

Special organizations are defined as approved area vocational centers or cooperative joint arrangements between school districts. A sliding scale from 10% to 50% of the base amount will be used for additional funds as reimbursement for student units of credit earned in classes which serve students from two or more school districts.

4. Factor IV - Initial Programs

Initial programs are defined as programs offered for the first time in an educational institution. A sliding scale from 10% to 50% of the base amount may be added for the first year to such programs to encourage schools to expand their occupational offerings. These additional funds are provided to help defray the costs of implementing new programs.

5. Factor V - Provisions for Educating Handicapped Students

An additional 10% to 50% of the basic amount may be added to the reimbursement claim if a school offers additional services for handicapped persons. (Refer to Bulletin No. 40-273, "Occupational Education for Disadvantaged and Handicapped Persons.") This amount will be computed on the number of student units of credit earned by such persons.

D. Summary of Funding by Formula

Base amount by category and Factors 1-5 shall be designated by the State Board of Vocational Education and Rehabilitation. Factors 2 through 5, where applicable, shall be computed as a percent of the base amount and none will be cumulative.

Total funding to a local educational agency will be the sum of the above funding factors and the basic claim (Criteria for Program Approval and Financial Support, pp. 9-11).

Reimbursement is made on instructional equipment at both the secondary and post-secondary levels in approved vocational technical education programs.

Funds have been allotted for the construction of some secondary area vocational schools through the Capitol Development Board.

Since 1969, Illinois has changed its method of financial support for University teacher education programs.

The Division of Vocational and Technical Education funds two universities by pre-determined contracts and by prioritization of activities. The activities include in-service and pre-service. For the year 1975 special contracts were awarded either to universities or community colleges dependent upon who had the most competence in the area requested. This was done through Requests for Proposals (RFP's). In 1975, \$248,000 was expended for pre-service and \$140,000 was expended for in-service activities. In addition, \$252,000 was expended for curriculum development which in some cases had influence on pre-service programs.

They do not financially support teacher education except through contract because the state thought that this would result in dual funding and that the State Department of Vocational and Technical Education would have no control over the use of the funds. So it was decided that, the State Board would work in a cooperative effort with the universities and community colleges to fulfill the goals of the State Board plan with courses and curriculum development that focused on these goals.

Indiana

Legislation changing the method of distribution of funds for vocational education in Indiana came about in 1975, the same year the State Board of Vocational and Technical Education was established. Prior to 1975, public secondary vocational education programs in Indiana received allocations beyond their regular tuition support through the Department of Public Instruction. Universities and colleges including the Indiana Vocational Technical College (IVTC) System^a individually presented their budgets to the state legislature for vocational and other programs. Vocational education within the higher education systems is funded as a part of their regular programs. In 1974, eleven different budgets were being presented to the state legislature for vocational education. This was one of the reasons for the establishment of the new state board. The new legislation called for separate funding to be provided for secondary and post-secondary vocational education as recommended by the State Vocational Board.

The new funding for elementary and secondary vocational education is based on a weighted basic grant system for average daily membership and an add-on appropriation for special education plus an add on appropriation for vocational education based on student enrollments and the kinds of programs. The weighted system provides for vocational education courses which require high expenditures for such things as equipment. Thus, there is a basic grant given for each student in secondary education. Vocational monies are provided in addition to this flat grant.

Note:

^aThe Indiana Vocational Technical College System is composed of a network of 30 independent public institutions that offer post-secondary level vocational training in Indiana.

The effect of this system has brought the vocational funding at the secondary level from 2 million dollars in FY 1975 up to 13 million dollars in FY 1976, an increase of 600%, which is in addition to the flat grant for every student enrolled in the secondary program.

The present trend in Indiana is to move away from the funding of continuous programs on a contract hour basis and move toward quality upgrading, new programs, and supplemental services. Operational costs will be borne by state appropriated dollars.

Indiana has six publicly supported institutions of higher education that provide courses in vocational education in addition to the IVTC System, namely: Ball-State University, Indiana State University, Indiana University, Indiana Vocational-Technical College, Purdue University, and Vincennes University. It is now the state vocational board's responsibility to recommend funding for each one of the six higher education institutions and present one budget to the Higher Education Commission that has responsibility for total funding of these institutions. Funding for all post-secondary vocational education was approximately 10.5 million dollars in FY 1975. The legislature has designated 16.0 million for FY 1976 which is a 42% increase in funding for the post-secondary level of vocational education.

Indiana provides professional development in both pre-service and in-service education for teachers at both the secondary and post-secondary levels. Funds used for this purpose are EPDA, Part B (ancillary professional development), and Part F (professional development). Participants in the teacher education program includes undergraduate as well as graduate vocational teachers. The purpose of the funding is to provide services and program components in addition to those supported by tuition and the state legislative funds. For FY 1975, the total monies from Part B for professional development activities was \$450,000 and from Part F, \$50,000.

Iowa

For fiscal year 1975, state vocational aids were provided for vocational education with 75% of the monies going to post-secondary or the community college level. The state board has the authority to divide the funds between secondary and post-secondary as need demands. There is no formula used for this purpose. However, categorical funding, as defined in the Vocational Education Amendments of '68, does determine where some of the funding will go. Much funding is based upon requests from local school districts and/or from the post-secondary units. Presently, 65% of the Federal dollars is allotted for post-secondary vocational education and 35% of the Federal dollars is allotted for secondary education. This varies from year to year depending on the amount of carry-over money available. Secondary education in the state of Iowa is supported by monies from the state board office, from the local property tax and from local foundation aids, dependent upon the number of students enrolled at the secondary level institutions.

The beginning of area development occurred in 1966. It began with federal monies because state monies were not available. This has not changed since funding is still not available. For the future biennium, the usual carryover monies available for secondary level are now gone.

But, no additional state funding is available. Therefore, it is possible that there will be a transfer of federal funds from the post-secondary to the secondary level. The problem that occurs is that all Federal dollars must be matched with state monies.

The preparatory programs in vocational education are reimbursed on a percentage of the instructor's salary and traveling. A new financial accounting system is being developed for the elementary and secondary level in which the total program cost can be identified, therefore, reimbursements may be changed. Presently, instructors are reimbursed out of state funds at a rate of 22%.

Iowa is encouraging new program development at the secondary and post-secondary levels to stimulate new program development. They are reimbursing instructors at a rate of 80% the first year, 60% for the second year, and 40% for the third year and probably at a normal range of approximately 22% the fourth year and thereafter. However, with the lack of dollars, some priorities may have to be changed and there may have to be a limit put on the dollars given out for priority programs or reduce the percent of support given.

Adult vocational education in Iowa is supported with a 40% salary reimbursement and a 40% travel reimbursement. The funds are allocated at the post-secondary level according to each merged area school system supported on the basis of total program. Identification is made of the direct vocational costs plus the prorated indirect costs for vocational education which equals the total program costs upon which reimbursement is made.

At present the post-secondary level, vocational education is supported for the next biennium through a general state aid system based on a cost per FTE for such programs as arts and science, special needs, allocational adult supplementary programs and recreational programs. They are defining a reimbursable FTE and a non-reimbursable FTE. At the area community colleges there are four sources of funds for post-secondary education. They are tuition and fees, which amount to 21% of the school budget, local property tax which account for approximately 11% of the school budget, the general state aids, and the combined state vocational aid and federal vocational aids. At the secondary level, the foundation aids and the local property tax contribute to the support for vocational education.

There is nothing in the law that stipulates formal tuition charge. However, at the post-secondary level, \$400 for two semesters or three quarters is probably an average tuition charge. For part-time students, tuition is based on a credit hour and for adults the average tuition is .50 per contact hour, but this varies from school to school. There is a law pertaining to out-of state students, in that, area schools are allowed to charge no more than the lowest price charged for tuition at the regent institutions (state universities). The law stipulates that community colleges can charge no less than 150% nor more than 200% of the existing in-state student charge for out of state students.

Certain of the merged area schools have foundation programs for scholarships for students. These are combined into a single fund. This relieves tuition somewhat for some of the students. Athletic scholarships are provided which lie outside of this general fund. The financing of the vocational program at the post-secondary level includes program costs and costs per FTE which can be fitted into an annual total

budget for an area community college, by institution and by percentage of the total. As was mentioned before, the post-secondary has direct and indirect costs. Building costs are prorated back from the fiscal plan on a, "square footage built" basis. Other considerations are library, student service, general administration and these are prorated back on a "contact, hour" for each program. The average program cost fees contribute 1.5%, tuition 20%, direct costs total budget 34%, arts and sciences 14%, general administration 7.6%, student services 7.13%, learning resources 3.3%, and fiscal plan 11%. This type of sophistication and budgeting is not available at the secondary level. But it may well be in the near future.

Expenditures for teacher education, including pre-service and in-service, for the fiscal year 1975, approached \$600,000. These were federal funds and were expended through the various teacher education institutions.

Michigan

The major portion of Michigan's secondary vocational programs are funded with state monies distributed according to an added-cost formula. The remainder of the programs are funded with federal funds according to a per pupil allowance formula.

The added-cost system is computerized; however, the process involves a fair amount of paperwork. The major concern in the development of the added-cost formula was the alteration of local district accounting systems to a vocational program cost base. In the vocational programs reimbursed through the added cost formula teacher salaries are reimbursed to a maximum amount of 20%.

Only wage earning programs are funded with the added cost formula and they are funded according to priority. After first priority programs (extended day and extended year) are funded, the remaining money is split into 60 percent and 40 percent portions. The sixty percent portion is distributed to vocational programs on a high demand ranking list developed with the aid of the Michigan Employment Security Commission. Jobs representing the greatest turnover and the greatest number of job openings per year are on the top of the list.

Approximately twenty-one million dollars of state monies are used to fund secondary vocational education programs and they are distributed according to an added-cost formula based on the additional per student cost of vocational education programs in relation to the cost of regular school programs per student hour. The added-cost formula contains variables for the added-cost factors, the number of students, the time per week and the number of weeks.

Added	Number of	Minutes	Length of Course
Cost	Students	x Per Week	in Weeks (.5 for
Factor		÷ In Course	single semester or
			1.0 for full year)

The added-cost factor is based on the additional cost for one student 60 minutes per day, five days per week, for a full school year. The factors vary depending upon the relative added-costs associated with the program. The factor is computed on the basis of instructional salary, paraprofessional costs, equipment and maintenance, travel, inservice, job placement, vocational administration, indirect cost rates, equipment replacement and other direct costs.

In fiscal year 1976, the added cost factor was reduced from 100 percent of added-cost to 75 percent of the added-cost due to shortage of funds and a desire to increase local support of vocational education. However, extended day programs and extended year programs are reimbursed at a 100 percent rate.

The remaining 40 percent of the added-cost funds that are not used to support vocational programs are given to the 49 Career Education Planning Districts (CEPDS) as "opinion." The money is distributed 49 ways according to the average of two factors: the CEPD's percent of the state's 9-12 student enrollment and the CEPD's percent of the state's total enrollments in vocational education.

CEPD's are given five options for the expenditure of these funds:

- 1) option to continue funding their programs by priority on state high ranking employment list
- 2) decide to use monies to fund programs by their own CEPD high ranking employment list
- 3) choose to fund cooperative education courses
- 4) option to fund special new programs
- 5) option to fund all shared time or area center programs within the CEPD.

Per Pupil Allowance

Programs that are not funded with state funds through the added-cost formula are allocated on the basis of per pupil allowance with federal funds. Thus, a minimum reimbursement is provided for conducting approved vocational education (Part B) and Consumer and Homemaking programs (Part F) on a per student hour rate.

Two factors determine the per pupil allowance: a local need factor and student hours generated. The need factor is computed on the basis of ten factors on a scale of 10 points allowing a total of 100 points. The 10 factors are in four categories: manpower needs and job opportunities, vocational education needs, relative ability to provide resources and relative costs of programs, services, and activities.

Secondary vocational education programs that are contracted for instruction with a public agency such as cosmetology are reimbursed at their exact level of cost if the actual contractual cost per student hour is less than the added cost factor. State personnel will not fund the programs' cost per student hour for an amount which exceeds the added cost factor.

CEPD coordinators', area program implementors', vocational directors' and shared time directors' eligible contracted salaries up to \$25,000 and travel are reimbursed up to a maximum of 40 percent. A total of 5 percent of the added-cost funds allocated to school districts are to be used for administration purposes regardless of the number of administrators and supervisors within the district. Therefore, vocational directors and shared-time directors are reimbursed for that portion of salary and travel which is not recouped through added-cost. A \$20,000 salary generates at \$8,000 (\$20,000 x .40) reimbursement. The school district might allocate \$5,000

(100,000 x .05) towards vocational administration charges. Thus the state would reimburse \$3,000 (\$8,000 - \$5,000) on a line item basis for the remaining share.

School district personnel may use added-cost funds to partially support supervisors; however, they must concur with state department personnel.

Included in the computation of the added-cost factor is the cost of travel and equipment; therefore, no extra formulas are needed to reimburse travel and equipment costs for these ongoing programs.

In relation to vocational programs reimbursed on a per pupil basis, the district has the option of spending a percent of their per pupil allowance on travel. Equipment costs for new programs reimbursed on an added cost or a per pupil basis are eligible for vocational education funds according to a 50 percent federal/50 percent local match based upon established priorities. The priorities are: priority I-a: initial equipment for area center facilities; priority I-b: initial equipment to facilitate implementation of an area vocational program; priority II: initial equipment for new programs in a single K-12 district; and priority III: initial equipment for new share-time programs.

Post secondary vocational programs are reimbursed in accordance with the added-cost concept of funding referring to effort, type of program, and financial need. Community college vocational programs are divided into three clusters. The most expensive to the least expensive cluster is the vocational-technical cluster, the health cluster, and the office and distributive education cluster. The formula used to figure the amount of support is called an occupational program-course support formula.

Cluster's	Added	Adjusted	Federal	Modified	Dollar	Occupational
OFYES	x Cost	= OFYES	x Adjustment	= Adjusted	x Amount	= Program
	Factor		Factor	Factor		Support

For each cluster the number of occupational full year equated students (OFYES) is multiplied by an added-cost factor (ACF) and this yields an adjusted OFYES. The federal adjustment factor represents the community college district's state equalized evaluation (SEV) and is multiplied by the adjusted OFYES. The dollar amount is determined by state personnel annually depending on amount of federal funds and projected number of OFYES.

The Dean of Occupational Education may be reimbursed 40 percent of his annual contracted salary to a maximum of \$25,000. In the event of that a number of deans are employed in the multi-campus community colleges, each dean's salary is reimbursed.

The Dean of Occupational Education is the only person who is approved for travel reimbursement. The total travel cost is figured on the base of 12¢/mile, and the state reimburses 40 percent of the total amount.

Equipment for post-secondary vocational programs is reimbursed on the basis of 50 percent federal and 50 percent local matching basis. A limit of 60 percent of available funds may be used for new program equipment, and 40 percent of the funds may be used for purchasing equipment for ongoing programs. Equipment funds are distributed on the basis of an instructional program support formula.

The maximum amount of money that a school district is allotted for an adult education program is \$12 per instructional hour, and the state

reimburses the district with 10 to 20 percent of this amount. At the present time, however, state personnel are currently studying the effectiveness of teacher reimbursement system as a method of allocating funds to adult education programs.

In Michigan, \$225,000 is set aside annually for vocational teacher education. From this sum each institution receives a base amount of \$21,000. The remaining money is offered through proposals to create competition among universities and to establish an accountability system for funds.

State monies for teacher education are distributed through the added-cost formula. Each local district reimbursed through the added-cost formula is required to spend 5 percent of their funds for inservice education.

Minnesota

Minnesota's secondary vocational programs are reimbursed 50% of their direct costs with state funds. Part C and F Federal Funds are provided to secondary vocational education schools on a grant basis. There are presently some discussions relating the future method of funding secondary vocational education. It is suggested that the funding may move to a per pupil basis with additional funding for specific services. Consideration has also been given to the added costs procedure, however, it has not been adopted because of the complexity of the accounting procedure.

Post-Secondary Vocational Education is budgeted at approximately \$90,000,000 and Secondary Vocational Education at approximately \$16,000,000 per year. There has not been a percentage established for splitting the funds between Secondary and Post-Secondary Vocational Education. The Minnesota State Board for Secondary and Post-Secondary Education established a policy which would allocate all available Part B funds to construction of Post-Secondary Area Vocational Technical Institute facilities.

Post-Secondary programs are reimbursed from monies from two accounts, (1) the Capital Aid account (state funds) and (2) the categorical aid account (state and federal funds). Monies from the State Capital aid account are made available on the basis of \$2,000 per student on average daily membership. Average daily membership has been defined as equal to 6 hours per day and 5 days per week for a total of 175 days. If the number of days exceeds 175, the area of vocational and technical institute receives some additional increment type of aid.

The categorical Aid account is a combination of approximately \$12.4 million dollars of state monies and 1.2 million dollars of Part B Secondary Federal monies. These categorical aids are made available on the basis of program costs and supplement the payment of \$2,000 per student on average daily membership. Included in the cost computation is student services, administration and plant operation as well as direct instruction costs.

Adult vocational programs are funded by a combination of state and federal funds. The costs are reimbursed on the basis of 75% of direct costs.

Construction costs for secondary schools are provided by the local districts through their use of their bonding and levying authority. Construction of buildings for post-secondary vocational and technical institutes

are from a combination of federal Part B funds and state funds. These facilities serve students from any place in the state and therefore it is thought to be most appropriate to build them with state and federal funds.

Ohio

In secondary vocational programs state monies support the classroom operation and federal funds are used for equipment, supervision, and travel.

Reimbursement of Ohio secondary vocational programs is based on approved vocational education units or classes. Approximately 20,000 classes are approved each year. The amount of reimbursement is the sum of the teacher's minimum salary, plus fifteen percent of the salary for fringe benefits, plus \$4,000 for overhead. The teachers' minimum salary is calculated on the basis of the teacher's training level and years of experience. Four-thousand dollars is given in addition. Generally a secondary vocational education unit is composed of 22.5 clock hours per week, 15 to 25 students, and a qualified instructor.

Total reimbursement varies among programs according to the amount of the teacher's salary. Another factor causing variability of reimbursement among school districts is the federal funds used to reimburse secondary vocational programs for equipment, supervision and travel on a priority system based on labor and economic characteristics of the school districts. The variables that contribute to labor and economic characteristics are general unemployment rates, unemployment rates of people age 16-21, and Aid to Dependent Children (ADC) rates. There are three priority levels: A, B, and C, and schools with A ratings have high rates of unemployment and ADC.

Post-secondary and adult full-time programs are reimbursed on a unit basis while part-time programs are reimbursed per classroom hour of instruction. Full-time units consist of 25 clock hours per week for 33 weeks, 15 to 25 students, and a qualified instructor. Reimbursement rates of units vary with the type of school and according to the A, B, C priority rating discussed in the secondary section above. (See Figure 2).

Figure 2: 1975-76 Reimbursement Schedule For Ohio Adult And Post-Secondary Programs

Full Time Programs	Priority		
	A	B	C
Unit Reimbursement Rates			
<u>Schools Under Public Education</u>			
Entire Program Approved	\$9,500	\$9,250	\$9,000

Full Time Programs	Priority		
	A	B	C
Portion of Program Not Approved	\$8,250	\$8,000	\$7,750
Schools Receiving Assistance from Board of Regents	50% of above rates		
Part-Time Programs			
Hourly Reimbursement Rates	\$4.00	\$3.50	\$3.50

Twenty-six percent of federal funds were given to post-secondary programs in FY '75. Post-secondary institutions that are governed by the Ohio Board of Regents receive federal vocational funds and state tax monies, and four of those colleges receive additional local tax base monies. All of the post-secondary institutions that are not governed by the Ohio Board of Regents receive both state and federal vocational funds and local tax monies. If the post-secondary institution receives local tax base monies, tuition may or may not be charged. Generally, the tuition charge is greater in schools governed by the Ohio Board of Regents, for they have no local tax support.

In Ohio, there are three administrative positions that receive reimbursement: local directors of vocational education, superintendents of joint vocational school districts, and local supervisors of vocational programs. In all cases the reimbursement rate depends on a priority system based on the districts' labor and economic characteristics categorized into three levels: A, B, and C. School districts with A ratings have high rates of unemployment and Aid to Dependent Children (See Figure 3).

Figure 3: 1975-76 Reimbursement Schedule for Ohio Vocational Personnel

Vocational Personnel	Priority Rating		
	A	B	C
<u>Secondary</u>			
Local Directors of Vocational Education	\$7,500	\$7,250	\$7,000
Superintendents of Joint Vocational Schools	\$8,500	\$8,250	\$8,000
Local Supervisors of Vocational Programs	\$6,500	\$6,250	\$6,000
Local Coordinators	\$5,500	\$5,250	\$5,000
Local Vocational Guidance Counselors	\$5,500	\$5,250	\$5,000

Figure 3 continued.

Vocational Personnel	Priority Rating		
	A	B	C
Post-Secondary			
Technical Director	\$6,000	\$5,750	\$5,500
Supervisor	\$4,500	\$4,250	\$4,000

The reimbursement rate is also dependent upon certain criteria. In order to qualify for reimbursement of local director, 12 or more full-time approved vocational teachers must be employed; programs to be directed must include two or more vocational program areas; and the director must be employed for a minimum of 48 weeks, working for at least 34 of those weeks. To receive reimbursement the JVS superintendent must be certified in Ohio as a superintendent. Reimbursement may be made for a 12 month year. The local supervisor may be reimbursed for a 12 month year if there is to be 8 approved full-time teachers under his supervision or if he is employed for developmental purposes.

Up to a maximum travel cost of \$300 travel reimbursement is provided for local directors, vocational guidance counselors, supervisors, coordinators, and teachers of vocational programs.

In Ohio reimbursement for equipment in approved programs is a percentage of the true cost of items having a minimum unit value of \$25. According to the districts' rating, the percentage reimbursements are: A-60%, B-55%, and C-50%.

Teacher education programs are approved by vocational state department personnel according to established standards of teacher certification; however, all approved teacher education programs in Ohio are not funded. Program area state supervisors determine who will be funded according to a master plan in each program area. Funded programs receive 50% of teacher educators' salaries, fringe benefits, 100% of travel cost and a minimal amount of supplies.

Ohio has given high priority in past years to building vocational education facilities and equipping them. A current priority relates to the improvement of program quality through updating and upgrading curricula and staff development. This problem area will be given strong attention in the coming year. There is also strong concern for keeping facilities and equipment up to date. Effort is being made to establish a practice of continuous upgrading on an annual basis as compared to a less systematic means. Another area of concern that will be given priority in future years are concerns related to student recruitment, placement and follow-up.

Wisconsin

Vocational education programs at the secondary level are found within the capstone programs. This includes awareness, orientation and actual

"hands-on" entry level skill development as an ultimate goal. While local districts may support their own vocational education programs not in compliance with the rules and regulations designated under funding by the Department of Instruction (DPI), it can be said that most vocational education in the state is funded under the guidelines set forth by the DPI. Capstone programs, in general, are supported on the basis of a point system which is divided into five categories with specific criteria listed for each of the categories. Under this system the application must meet the minimal 40 point requirement. If the application meets the minimum criteria, then additional points can be acquired depending upon what additional criteria are met. Applications are accompanied by dollar requests. Thus, when all applications are gathered together a "bell-shaped curve" is used to determine rates of reimbursement. Priority programs are then selected for reimbursement. Reimbursement is from federal and local dollars, however, not all operational cost are included in capstone program expenditures, i.e. electricity, room rental, audio-visual equipment, fringe benefits and items under \$25. The DPI reimburses secondary vocational education projects to local school district administrators and/or Local Vocational Education Coordinators (LVEC'S) providing projects are part of a long range plan. Reimbursement from special funds ranges from 11% up to 100%, the latter very often awarded when an LVEC is involved. The only state monies expended exclusively for vocational education are for 3 agriculture education consultants and 2 home economics consultants who are reimbursed with matched funds from state and federal sources. State aids are given to vocational education for operational cost as are other courses found in the curriculum; however, none are given for capital outlay.

At the post-secondary level the distribution of state aid during FY 1975 was based on a standard formula and distributed at a level established by the state legislature for the sixteen vocational education districts in Wisconsin. This was based on a reimbursable cost per FTE predicted on a statewide average operational cost per FTE. The advantage of this system was that it provided an efficient district with a higher percent recovery. Effective in FY 1976 was a reimbursement formula based on operational costs rather than FTE's. This reimbursement amounted to 35% of the average operational cost per district. Two factors influenced this formula: One was the equalization index which was calculated for each district in which the districts equalized valuation per FTE was compared to the statewide equalization per FTE. This meant that some districts were reimbursed at a higher or lower level when consideration of the tax base was included in the calculation. The second factor was a cost control factor that involved calculating the non-Federal cost per student for the base year; base year being the prior year of enrollment. If the cost per student increases at a rate of 9.5% or less no penalty was experienced by that district, however, if the increase was more than 9.5% the state did not share in costs in excess of that percentage. Usually by the month of November within the fiscal year up to 85% of the state aids are paid to the districts based on this cost control factor. However, 15% are withheld and paid to the district prior to June 30th so that adjustments can be made for the actual dollars involved in operational costs and adjustments that must be made because of under or overestimating the enrollment figures per district.

In former years the state legislature has provided state aid to the districts at a rate of 55%, but this was cut to a rate of 35%. So, while enrollments have increased through the years, it does not mean that the district are realizing more state aid. Rather, monies for operational costs within the districts are being paid by the newly imposed tuition charge for post-secondary and adult education programs.

Funds distributed to secondary vocational education at a rate of approximately 40% while post-secondary and adult education receive approximately 60% of Federal monies given to the states provided by the 1968 amendments. Distribution of these monies is based directly on student populations served. Presently, Part B of the Federal monies designated for use in post-secondary and adult education and controlled by the Wisconsin State Board are separated into eight categories. Other parts of the act are appropriated in their separate amounts and are not transferrable.

At the beginning of each year state dollar allocations are allotted within each of the eight categories, namely; post-secondary, adult, disadvantaged, handicapped, construction, guidance and counseling, contracted instruction, and ancillary services including administration and suspension, evaluation, teacher training, research and development projects and curriculum development, of Part B. Each of these categories is separately administered by staff committees. Competition for the funds available in each of the categories are open to all districts. Projects submitted must compete against each other within these categories. In the procedures outlined in "The Program Manual", criteria for judgement is established along with the aid levels for score ranges. Thus, the projects having the highest scores receive reimbursement until the money is expended. These projects are reimbursed on the basis of monthly claims. Short projects usually are reimbursed, however, at the end of the project when the total costs are known. Larger projects, those that may last a full school term, are reimbursed monthly after the claim is submitted to the State Board at which time it is desk audited. These claims are submitted to a field audit at a later time and reimbursements and adjustments are made to the claimants.

Actual building construction within the state is reimbursed upon presentation of claims. Usually payment is paid on a quarterly basis amounting to an average reimbursement of 8% of the total costs derived from Federal funds. This may range in one district from 5 to 6% and perhaps in another district for 10 to 12% however, the major portion of construction funding is supported from local monies. Local monies are derived on a 1.5 mil rate ceiling, which may be exceeded by bond indebtedness which may not exceed 2% of the value of the property of the district. The latter type of construction must be supported by bonding. Indebtedness may be paid for by cumulative reserves by the district in which case it requires local board approval and State and Board approval. In general, State Board approval is required for purchases of real estate, remodeling, and construction activity.

The main source of local funding remains the local property tax. A study is planned this fall to study money flow within the district. Since the imposition of tuition, it is expected that a lower amount of money will be derived from the local property tax and a higher percent of the total money will be derived from student tuition.

A wide diversity of teacher education projects have been awarded mainly to the Stout and Madison campuses of the University of Wisconsin System. Since the purposes of the projects are mixed, it is difficult to estimate the amount of money being allocated for teacher education specifically. A large amount of in-service is done through the university system and certainly they prepare vocational teachers to become teachers but, a minor amount of funding is given over directly to teacher education. Rather, teacher education is taken care of through the Education Professional Development Act (EPDA). The EPDA funding for the state this year approximated \$100,000. These funds will be spent mainly at the Stout and Madison campuses with some of the money being spent at the Department of Public Instruction (DPI) and at the State Board office for graduate interns.

Funds Expended by States for Vocational Education

The reader is cautioned with regard to Table 12 which was prepared for the purpose of comparing funding among the states. It is not known if the figures shown represent true totals in that they may not include all program support. Also, there is a lack of uniformity in accounting procedures among states. Thus, totals may not reflect the full effort being given to vocational education within the states by levels. Since these are the data submitted by the separate states as totals expended for program, they are the figures used for comparison between the states in the following paragraphs.

For the fiscal year 1975, the states showing the greatest emphasis by percent enrollment at the secondary level in descending order were: Illinois, 78%; Indiana 66.6%; and Ohio 62.5%. The highest percents of monies were expended by Illinois 78%, Indiana, 67%, and Ohio, 62.5%. (These figures do not reflect, as may be suggested, a trend or emphasis toward one level or the other particularly in the State of Illinois nor the anticipated 600% increase in state funding, anticipated for the fiscal year 1976 in Indiana.

In descending order, the state showing the greatest emphasis by percent enrollment at the secondary level were: Illinois 78%; Indiana 67%; Ohio 63%. Wisconsin showed the lowest amount of funding, 7.8% at this level while providing educational services for 39.5% of the total vocational education student body within the state. The 39.5% enrollment reflects the approximate allotment of Federal funds by the State Board of Vocational Education in that state.

Recalling that Federal funding is based in population within the states, Table 12 does not reflect agreement between funding and percent of students served within the states. A definite funding emphasis was seen for fiscal year 1975 in the states of Michigan ranking first in expenditures and third in population, Minnesota ranking fourth in expenditures and sixth in population and Iowa ranking sixth in expenditures and seventh in population. A definite de-emphasis was realized in Wisconsin in that it expended the least amount of money of the seven states at the secondary level yet ranked fifth in population.

Emphasis in post-secondary education is reflected by the percent of funds expended. In descending order, percent of expenditures were Wisconsin 73%; Iowa 68.3%; Minnesota 59.1%. Comparing funds expended

with population figures Wisconsin ranked first in post-secondary expenditures and ranked fifth in population, Minnesota ranked second in funding and sixth in population. Illinois ranked third in expenditures and first in population and Iowa ranked fourth in expenditures and seventh in population.

Of the states considered in the study, Wisconsin ranks first, 19.1%, in funds expended for adult vocational education followed by Iowa with 11.7% and Minnesota with 5.3%. In conclusion, Table 12 presents data indicating that in FY 1975, Michigan, Ohio and Indiana emphasized secondary education, Wisconsin, Minnesota and Iowa emphasized post-secondary education and Wisconsin, Iowa and Ohio emphasized adult vocational education. However, the ranking changes when consideration is given to percent of students served at each of these levels with regard to funds expended. In descending order the states emphasizing funding in vocational education at various levels are: secondary, Illinois, Indiana, and Ohio; post-secondary, Wisconsin, Michigan and Illinois; and adult vocational, Wisconsin, Iowa and Ohio.

Table 12: Funds Expended for Vocational Education Programs - FY 1975

States	ILLINOIS	INDIANA	IOWA	MICHIGAN	MINNESOTA	OHIO	WISCONSIN
Total Financial Support	170,324,952	31,406,168	53,388,600	243,939,509	116,474,745	162,607,214	122,516,214
SECONDARY							
Total Dollars	98,276,927	19,120	13,367,663	213,987,732	41,442,000	153,994,258	9,560,514
Percent of Funds Expended	57.7	0.9	25.0	87.7	35.6	94.3	7.8
Percent of Secondary Students	78.0	no. n	43.9	55.8	45.1	67.5	62.5
Local Dollars	76,432,906	12,361,975	9,123,235	177,698,338	36,500,000	19,474,685	5,377,417 ^d
%	78.0	66.0	68.25	83.04	73.6	12.5	56.1
State Dollars	10,300,248	2,050,000	2,314,712	21,252,000	10,400,000	116,106,720	1,100,000
%	10.0	11.0	17.32	9.93	25.1	75.4	11.1
Federal Dollars	11,543,773	1,387,145	1,929,716	15,037,394	542,000	16,412,855	4,100,000
%	12.0	23.0	14.43	7.03	1.3	12.0	42.8
Other Sources	-	-	-	-	-	-	-
%	-	-	-	-	-	-	-
POST-SECONDARY							
Total Dollars	61,390,886	12,144,737	33,778,454	26,984,280	68,822,745	15,732,859	89,613,400
Percent of Funds Expended	36.4	38.7	63.3	11.1	59.1	8.6	73.1
Percent of Post-Secondary Students	14.1	6.3	7.8	20.6	12.2	3.6	22.0
Local Dollars	55,063,450	-	22,916,720	22,916,659	3,440,154	7,481,394	50,987,200
%	89.0	-	67.84	84.27	4.9	47.6	56.9
State Dollars	3,290,357	10,500,000	5,951,188	-	64,838,309	2,846,233	33,936,200
%	5.0	86.0	17.62	-	94.2	18.1	37.9
Federal Dollars	3,637,079	1,644,737	4,910,546	4,244,621	494,082	5,375,232	4,310,800
%	6.0	14.0	14.54	15.73	1.3	34.2	4.8
Other Sources	-	-	-	NA	-	-	379,200
%	-	-	-	-	-	-	0.4
ADULT							
Total Dollars	10,057,139	462,311	6,242,483	2,958,497	6,210,000	12,910,167	23,372,300
Percent of Funds Expended	5.9	1.5	11.7	1.2	5.3	7.1	19.1
Percent of Adult Students	7.9	27.1	48.3	23.7	42.7	34.2	38.5
Local Dollars	8,709,308	-	4,897,776	2,533,063	2,484,000	5,024,301	14,278,500
%	87.0	-	78.46	85.62	40.0	39.0	61.1
State Dollars	715,295	-	1,025,099	-	3,526,000	2,764,386	3,551,800
%	7.0	-	16.42	-	56.8	21.4	15.2
Federal Dollars	632,536	462,311	319,608	425,434	200,000	5,116,420	5,443,100
%	6.0	100.0	5.12	14.38	3.2	39.6	23.3
Other Sources	-	-	-	-	-	-	95,000
%	-	-	-	-	-	-	0.4

Note: ^d includes state and local funds.

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CHAPTER IV

STATE AND LOCAL STRUCTURES EFFECTING VOCATIONAL EDUCATION DELIVERY

States vary widely in their administrative structures and delivery pattern relating to public education in general and to vocational education specifically. This chapter will describe some of these variations.

Administrative Structures Effecting Vocational Education Delivery

Important to the delivery of vocational education within the separate states are their administrative structures relating to education in general. Appendix A provides organizational charts of these administrative structures responsible for such education. Study of these organizational charts reveals that with the exception of Indiana and Wisconsin, vocational education both at the secondary and post-secondary levels is the responsibility of general public education. As of November, 1975, Indiana had established a separate state board for the administration of vocational education as did Wisconsin in 1917, in accord with the Smith-Hughes Act, under Chapter 494 (Indiana Public Law No. 227, 1975 and Wisconsin Sessions, 1917).

Figure 4 is provided the reader and is an extraction taken from the organizational charts found in Appendix A. The purpose of Figure 4 is to illustrate the line relationships and the directness or remoteness of administration for vocational education in each of the states. The most direct administration of vocational education is found in Indiana and Wisconsin where separate state boards exist whose directors are responsible for the delivery of vocational education in their respective states. By referral to Appendix B-2, it may be observed that the division of vocational education in Indiana at the secondary level falls under the direction of an associate superintendent and the State Superintendent of Public Instruction. This is separate from the State Board of Vocational and Technical Education in that state, but program contracts are awarded to the division from the state board. Wisconsin is similar only more remote in the line relationship for secondary vocational education. In this state, programs are run by the director of the Bureau for Career and Manpower Development under the Division of Instructional Services which reports to the Deputy State Superintendent and the State Superintendent of Public Instruction.

As may be seen in Figure 5, Illinois, Indiana, Iowa, Minnesota and Wisconsin are focused on the administration of the state plan. Members of Minnesota's State Board for Vocational Education are the same members who serve on the Minnesota State Board of Education; however, the business of both boards is addressed separately. Boards administering the state plan in Iowa, Illinois, Ohio and Michigan have authority over all

Figure 4: Line Relationships of Administrators Concerned With Vocational Education Delivery

<u>ILLINOIS</u>	<u>INDIANA</u>	<u>IOWA</u>	<u>MICHIGAN</u>
Illinois Office of Education (State Superintendent of Public Instruction)	State Department of Public Instruction (Superintendent of Public Instruction)	State Board of Public Instruction (State Superintendent of Public Instruction)	State Board of Education (Superintendent of Public Instruction)
Deputy of Program Services	Department of Public Instruction (Associate Superintendent- of Public Instruction)	Area Schools & Career Education Branch	Deputy Superintendent Associate Superintendent School Program Development
Assistant Superintendent- Adult, Vocational & Technical Education	Director, Division of Vocational Education	Director, Career Education Division	Director, Vocational and Career Education Services
<u>MINNESOTA</u>	<u>OHIO</u>	<u>WISCONSIN</u>	
State Board of Education (Commissioner of Education)	State Board of Education (Superintendent of Public Instruction)	Wisconsin Board of Vocational, Technical, and Adult Education	
Deputy Commissioner Operations	Deputy Superintendent		
Director, Division of Vocational- Technical Education	Director, Division of Vocational Education	Director of Vocational Education	

public education in their states with a portion of that responsibility given to the administration of vocational education.

The executive officers of the boards in five states: Illinois, Iowa, Michigan, Minnesota, and Ohio are identified as the persons who have jurisdiction over K-12 public education in their states. In Wisconsin the position of Superintendent of Public Instruction is an elected position. However, this person is not the executive officer of the State Board of Vocational, Technical and Adult Education. The states of Indiana, Michigan, Minnesota, Ohio and Wisconsin the executive officers are appointed by their state boards. In Iowa and Illinois this person is appointed by the Governor. Members of the board administering vocational education vary from eight members in Michigan to twenty-three members in Ohio. (See Figure 5). The members of the board are appointed by the Governor in the states of Indiana, Iowa, Minnesota and Wisconsin. In Iowa these appointments must be approved by two-thirds of the members of the Senate and not more than five members can be of the same political party. In Wisconsin, these appointments are subject to the confirmation by the Senate. Michigan and Ohio elect their board members. Ohio's board members are elected by congressional district. Michigan's members are nominated by party conventions and elected at large.

Patterns for Vocational Education Delivery

Illinois

Included in the role of the local elementary school agency is provision for the exploration or awareness programs for younger children K-8. To promote this endeavor, Illinois has provided the occupational information programs for students through the Division of Vocational and Technical Education. This program is a segment of a total career education program which extends from early childhood through adulthood. The information program encompasses career-awareness, self-awareness and career exploration activities. Such activities are integrated within the regular curriculum. Programs are supported by contracts for the development of curriculum materials. State funds were originally used to develop these programs without additional aid from federal sources.

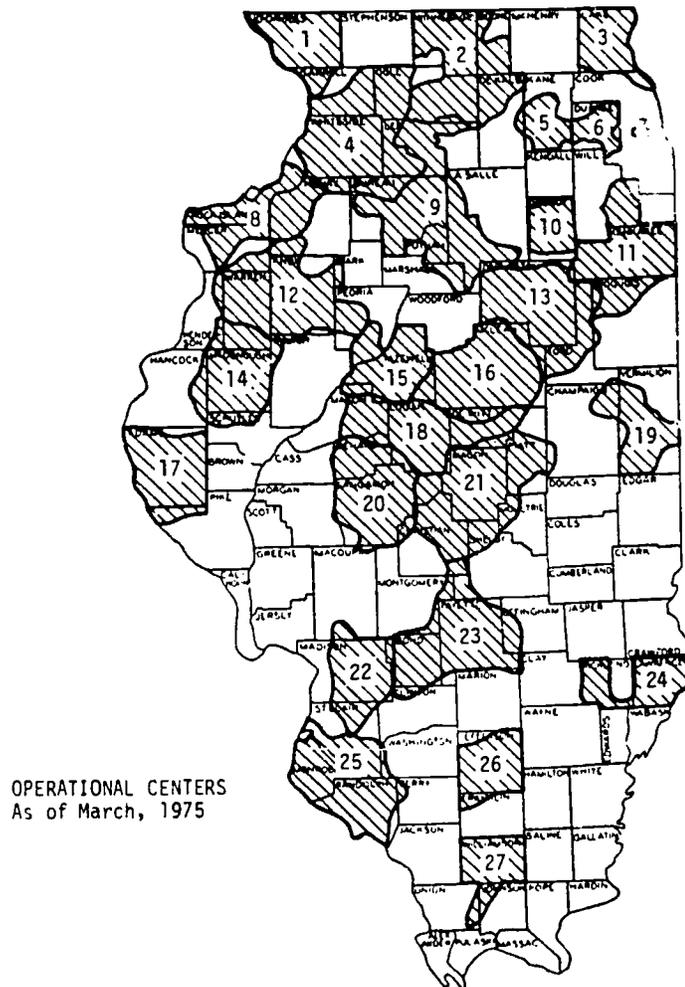
The role of the local secondary school agency is to deliver quality vocational programs which meet the needs of the communities in which programs exist. Accepted secondary programs are comprehensive in that sequential programs are offered in five occupational areas: applied biological and agricultural; business, marketing and management; health; industrial oriented; and personal and public service. Guidelines for the planning of sequential programs at the secondary level have been prepared by the state. Each section has been printed in a separate publication for use by instructors. It is hoped that such publications would provide an impact on sequencing courses within districts and an articulation of courses between area vocational centers and participating school districts. Approximately 70% of the secondary institutions have comprehensive programs. (See Figures 6 and 7).

Figure 5: State Board Administration of Vocational Education

	ILLINOIS	INDIANA	IOWA	MICHIGAN
Authority of Board	<p>State Board of Education</p> <p>To cooperate with the Federal Government and Administration of the Provisions of the Federal Vocational Education Law...to promulgate reasonable rules and regulations relating to the enforcement of the provisions of this act. Chapter 122, Sections 694, 695, and 697, Illinois revised statutes, 1973.</p>	<p>State Board of Vocational and Technical Education</p> <p>Administration of the state's vocational education and supervise the administration of vocational education programs according to Indiana Acts of 1975, P.L. 227.</p>	<p>State Board of Public Instruction</p> <p>Responsibility for the administration of the State Plan for Vocational Education and for supervision thereof by the local education agencies.</p>	<p>Michigan State Board of Education</p> <p>Responsibility for leadership and general supervision over all public education including adult education and instructional programs in state institutions</p>
Executive Officer	<p>Superintendent of Public Instruction appointed by the Board of Education.</p>	<p>State Director of Vocational Education employed by the State Board of Vocational and Technical Education</p>	<p>State Superintendent of Public Instruction appointed by the Governor of the State</p>	<p>State Superintendent of Public Instruction appointed by State Board</p>
Members of the Board	<p>17 Members</p> <p>Selected by the Governor for terms of varied length.</p>	<p>11 Members</p> <p>The State Board is appointed by the Governor.</p> <p>State Superintendent of Public Instruction (ex officio)</p> <p>Executive Officer of the Commission of Higher Education (ex officio)</p> <p>1 member of the state board of education</p> <p>1 member of the commission for higher education</p> <p>1 member of a governing board of a secondary vocational institution</p> <p>1 member of a governing board of a post-secondary vocational institution</p> <p>1 member representing secondary vocational administration</p> <p>1 member representing labor</p> <p>1 member representing business</p> <p>1 member representing agriculture</p>	<p>9 Members</p> <p>Approved by the Governor, subject to approval by two-thirds of the members of the Senate not more than 5 members shall be of the same political party.</p> <p>Deputy State Superintendent</p> <p>Associate Superintendent of Area Schools and Career Education Branch</p> <p>Director of Institutional Services, Area Schools Division</p>	<p>8 Members</p> <p>Nominated by party conventions elected at large (Governor fills vacancies)</p>

	MINNESOTA	OHIO	WISCONSIN
Authority of Board	<p>Minnesota State Board for Vocational Education</p> <p>Responsible for the administration of the State Plan</p>	<p>State Board of Education of Ohio</p> <p>General supervision of the system of public education in Ohio</p>	<p>State of Wisconsin Board of Vocational, Technical and Adult Education</p> <p>Determine organization, plans, scope, and development of vocational, technical and adult education</p>
Executive Officer	<p>Commissioner of Education elected by State Board (6-year term)</p>	<p>Superintendent of Public Instruction appointed by the State Board</p>	<p>State Director of Vocational Education appointed by State Board</p>
Members of the Board	<p>9 Members</p> <p>Appointed by Governor with approval of State Senate</p> <p>One member appointed from each of each Congressional districts and one member from the state at large</p>	<p>23 Members</p> <p>Elected by their Congressional district</p> <p>One member residing in and representing each of the 23 Congressional districts of the states</p>	<p>12 Members</p> <p>Appointed by Governor subject to confirmation by the Senate</p> <p>State Superintendent of Public Instruction</p> <p>Member or designee of industry, labor, and human relations commission (selected by the commission)</p> <p>President of the University of Wisconsin Board of Regents</p> <p>Nine other members: 3 employees of labor 3 employers 3 persons engaged in operation of farms</p>

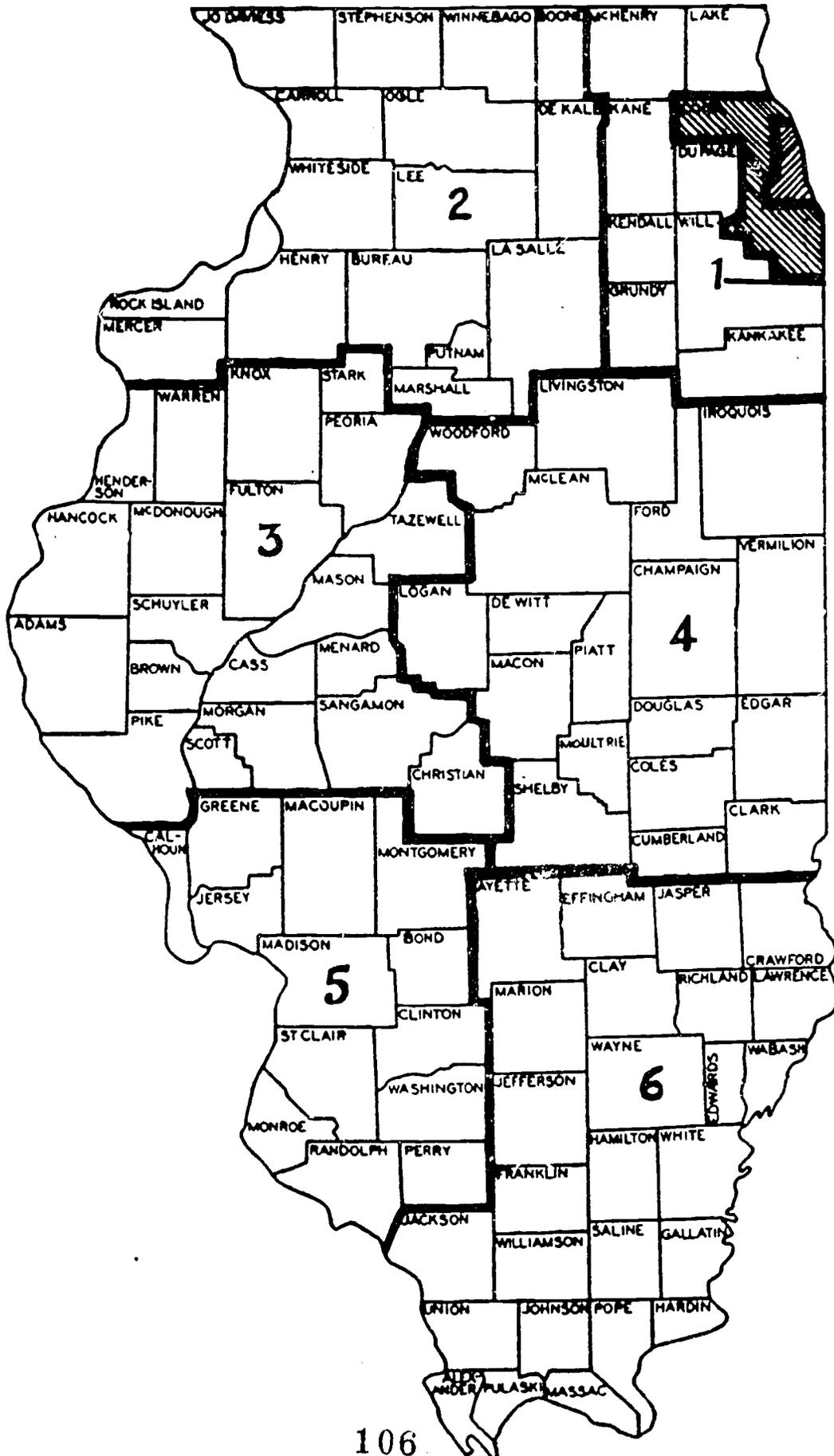
Figure 6: Secondary Area Vocational Centers



Vocational education falls under the authority of the Division of Vocational and Technical Education. For purposes of administration and delivery the state is divided into six regions containing approximately 700 Local Education Agencies (LEA's) that offer over 8,000 specific vocational educational programs. (See Figure 8). Within these regions are 29 Area Vocational Centers that have been constructed in the last ten years since 1965. Regions adhere to county line divisions.

At the secondary and post-secondary levels, each LEA must submit a one and five year plan. This plan presents a profile of the anticipated program offering, services to be offered, how programs will be offered and what resources will be used. The plan must meet the needs of the community it serves. The one and five year plan is updated annually for the purposes of improvement of local programs, accountability of state and federal funds and for the facilitation of state-level planning. Guidelines are furnished the local districts by the state board to assist them in writing the plan. This then becomes part of the Illinois Evaluation System. Phase I of this system involves the LEA staff whose task becomes one of planning occupational programs suited for local students. Through careful planning, culminated in a planning document for each LEA within the state, this local plan is completed annually and submitted to the state office and serves as a contractual agreement between the LEA and the state office. This local plan outlines the total occupational program, including the identification of the administration organization of the LEA, a listing of personnel, program objectives, a description of the local directed evaluation system, a description of program offerings, and a description of how community and school resources will be utilized as well as the ancillary services needed to provide the program. In Phase II, the plan is reviewed by the LEA governmental board and is forwarded to the state office for review and evaluation. The plan is then either approved or not approved by the state director. The local agency is measured against its own potential within its own surroundings. Things considered are class performance, demographic characteristics, financial resources, and training opportunities within the community. Phase III consists of two or three-day on-site evaluations of a selected number of LEA's each year. During this phase, a team of individuals selected from outside the districts gather and analyze the information concerning the total programs offerings of the LEA. The members are selected from state staff from three groups of individuals: educators who have demonstrated teaching, counseling or administrative experience in occupational education; business, industry or labor representatives who have in the past shown concern for occupational education; and former occupational education; business, industry or labor representatives who have in the past shown concern for occupational education; and former occupational students. As can be seen, these groups represent the producer, consumer and products of occupational education. Each evaluation team is headed by a team leader responsible for leading two or three visits a year. Team leaders come from business and industry; community college presidents, deans and instructors; secondary school superintendents, principals, occupational education directors and instructors and regional superintendents. Team size varies as to the size of the LEA being evaluated. Normally the size is from 4 to 25 team members. The team responsibility is for the total assessment of the LEA in making specific suggestions for improvement. Their main concerns are with administrative organization, personnel, objectives evaluation, location of resources, guidance services, students served, and occupational program.

Figure 8 : Service Regions of the Illinois Department of Adult, Vocational and Technical Education



There are seven functional units that participate in this program approval and evaluation process. Their duties are to appraise the vocational program at the local level, regional directors serve the entire state with a system of approval and evaluation. Occupational consultant unit consists of the five comprehensive areas mentioned previously. The professional, curriculum and development unit promotes a mix of contract and special services. Their function is to approve vocational education courses, teachers and teaching materials. They also coordinate in-service for teachers, upgrade and use career education techniques. Special programs that prepare local vocational administrators, career guidance coordinators, and curriculum development specialists are provided by this group. This group also directs the Regional Vocational Curriculum Center which is one of seven such national centers. In addition there is a special program unit which serves the hard to reach or hard to teach students. They work in areas where there is high dropout or high unemployment, as well as, areas burdened by chronic depression. The Manpower Development and Training Unit supports Manpower Training as state and federal Manpower agencies see that they are needed through contracts with local agencies. Their mission is to train, upgrade or retrain people in occupational area in which there are shortages of qualified personnel.

Another aspect of Illinois vocational education delivery is the vehicle of the Joint Agreement. Under this type of agreement programs and services are provided jointly in cases where they would not be feasible alone. To meet this end, the school code has been amended several times to allow for cooperation between districts and to provide administrative and fiscal guides to guarantee all participating districts reception of equitable treatment. Joint agreements that are funded become the responsibility of the Division of Vocational and Technical Education and are operated under the school code. Approval for programs under the joint agreement receive approval through the local annual plan which requires that a copy of any joint agreement under which a vocational program is operated and funded by appended to the Plan.

Post-secondary institutions are known as Community Colleges in Illinois and are separate from the institutions of higher education. Some of the institutions of higher education will accept students from associate degree programs with full credit for the courses taken within the Community College structure while others will not. Requirements at various Community Colleges vary with regards to graduation requirements so that transfer of credits between Community Colleges also vary. (See Figure 9).

Indiana

The State Board of Vocational and Technical Education has designated 48 districts for area vocational programs in Indiana. Thirty-eight of these districts are complete and have operating programs. These programs are considered to be 100% comprehensive in their offerings. Figure 10 presents a map which displays the numbering of the designated areas as well as those areas that are complete and those that are under feasibility studies. As of fiscal year 1976, two area vocational programs were under planning and development, six areas had completed feasibility studies, twenty-three had area programs available with a central facility and thirteen were able to provide programs without a central facility. The

Figure 9: Illinois Public Community College Districts

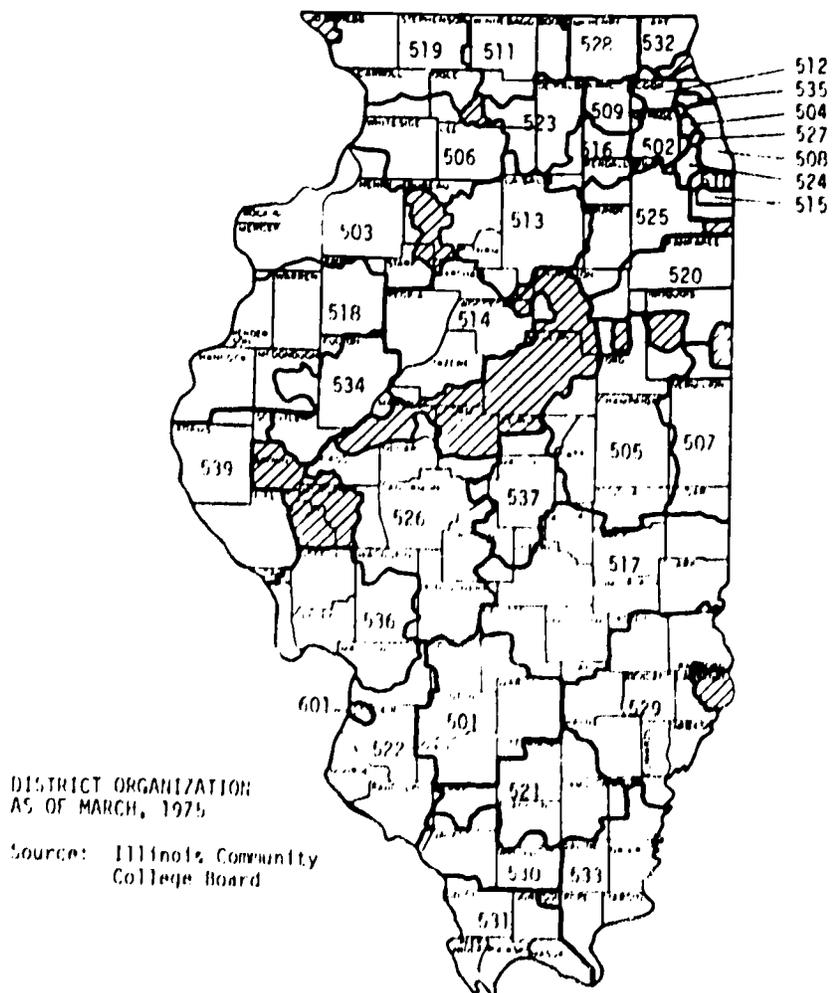
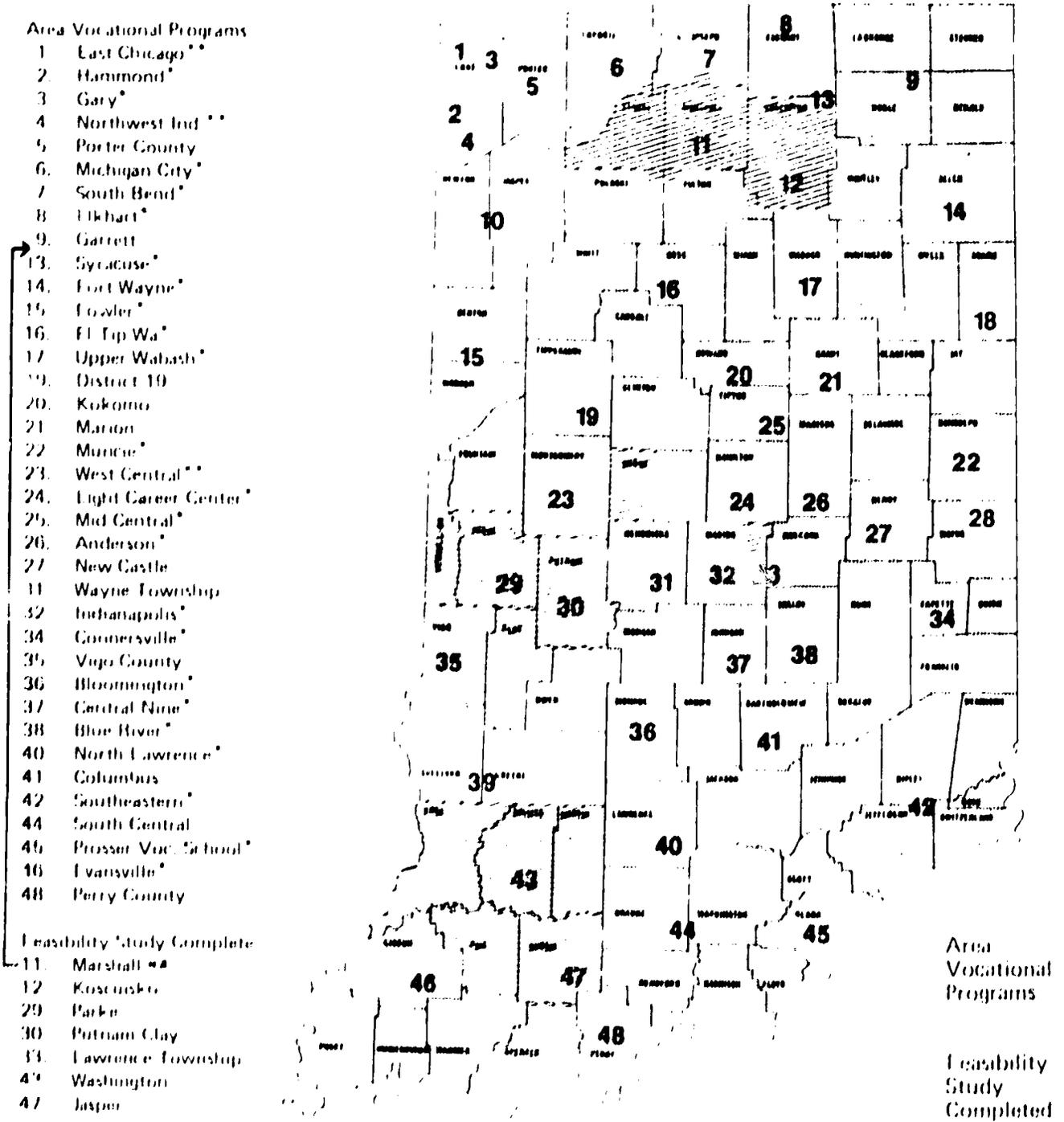


Figure 10: AREA VOCATIONAL PROGRAMS IN INDIANA 1975



* Area Programs with a Central Facility (Numbered according to districts as designated by the State Board of Vocational and Technical Education)

** Under Planning and Development

purpose of the area vocational education concept is to further the availability of secondary, post-secondary and adult vocational education programs in local communities. In districts having a central facility, students spend part of their day in the area vocational school; the remaining time is spent in the home school, where instruction related to specific vocational interests required for high school graduation are given. It is thought that by the mass utilization of the area vocational education programs there will be less duplication and more efficient use of state and federal dollars. These programs serve to compliment the vocational education programs being offered in the more than 320 comprehensive high schools in Indiana. Secondary vocational education students who complete high school may go directly into skilled jobs, undertake advanced technical study, enter apprenticeship or pursue professional college training.

The Indiana vocational college system responsible for secondary vocational education up to and including the associate degree is represented in thirteen regions throughout Indiana. Post-secondary education within these regions is not considered to be comprehensive, therefore students wishing to take a program not offered in their own district may take courses or programs in other districts. Thus, a comprehensive program is devised between the efforts extended by Vincennes University, the extension and division of general and technical studies offered through the four university consortium. Each of these institutions has areas of expertise and through the consortium system a comprehensive program is offered.

Adult vocational education is offered by local institutions. Courses are arranged based on need. Adult vocational education programs are designed to meet local needs. These needs are expressed through local advisory committees, business and industry and the desires of the local people. Adult programs are offered in the forty-eight area secondary schools as well as through the university system. Participating universities are Vincennes University, a two-year system with two sites, Indiana University with six regional extensions, Purdue University with four regional extensions, Indiana State University with one additional site and Ball-State University.

Advisory committees are formed for every local system at the secondary level. One exists for each occupational area in addition to one with an overall prospective. The trend at the post-secondary level is to utilize advisory committees for every occupational area. Regional boards of trustees within the thirteen post-secondary regions offer advice in addition to these advisory committees.

A number of problems arise at the state board level. One is the problem of articulation between the secondary and post-secondary systems. Other problems are defining the missions and goals of the new structure. There is the problem of coordination on a statewide basis on trying to provide delivery systems without unnecessary duplications. Working with institutions where they have traditionally made their own decisions presents yet another problem. The thrust is toward a statewide coordinated effort to form a coalition with the secondary and post-secondary system. Efforts are being made to provide advance placement through the mechanism of testing for entry into the post-secondary system. Identification of tasks along with desired competencies do much for the articulation process.

As in other states, proprietary schools exist. Indiana public vocational education is not in competition with these private proprietary

schools. However, if manpower needs are not met, they do feel an obligation to go into a specified regional area and provide education where manpower needs are not being met. Secondary schools do contract with private proprietary schools for the delivery of programs such as cosmetology. At the post-secondary level some contracting is done with certain health facilities which also provide the personnel for instruction of such programs such as the licensed practical nurse (LPN).

Indiana has two two-year institutions that would be comparable to community colleges in other states. One is at Vincennes University and nearby at Jasper, Indiana which specializes in cabinetry, electronics and piano making. These colleges found their origins in what was known as the old Junior College System and now fall into the category of community colleges. They have a career division which provides for a vocational area. Their function is to provide vocational education for high school graduates and, while not being the norm, for some GED completers. Also at the post-secondary level is the Indiana Vocational-Technical College (IVTC) system developed some twelve years which provides vocational education mainly to dropouts from high school as well as high school graduates. Some of the courses are taught at a high school level while others are more technical and may lead to an associate degree. Program development is dependent upon the desires and needs of students. (See Figure 11).

Generally credits earned at the two-year institutions are not directly transferrable to the four-year colleges and universities, however students may test out at these universities and certainly their credits earned at the two-year institutions are considered as credits that may be transferred. Credits earned at Vincennes University are more likely to be transferrable to four-year institutions since they are North-Central accredited. However, transfer of credits at the four-year institution is dependent upon the acceptance of the credits by the registrar at the entry university. Credits are readily transferrable between associate degree programs within the state as are credits within four-year university programs.

Elementary schools in Indiana provide awareness of vocational education careers in the seventh, eighth and ninth grades.

IOWA

Administratively the Career Education Division under the Area Schools and Career Education Branch of the Department of Public Instruction is organized in a different manner from other states. The structure provides for a Director and three additional key leadership positions: a Chief of Post-Secondary Career Education with 5 consultants, a Chief of Elementary Secondary Career Education with 8 consultants, and a Chief of Support Services with 4 consultants. This structure evolved about seven years ago in an attempt to better fulfill the requirements of the 1968 Vocational Education Amendments, Management By Objectives (MBO) is used to identify role responsibilities for this staff in their leadership activities. Consultants with specific expertise in an area assist at both instructional levels even though assigned to a specific level. The Support Services section has responsibility for the development of the state plan and contains a research unit which has recently developed the Career Education Needs Information System (CENIS). Essentially this unit is responsible for

Figure 11:

NORTHWEST – REGION 1
Indiana Vocational Technical College
1440 East 36th Avenue
Gary, Indiana 46409
Phone 219/887-9646

SOUTH BEND – REGION 2
Indiana Vocational Technical College
1634 West Sample Street
South Bend, Indiana 46819
Phone 219/289-7001

FORT WAYNE – REGION 3
Indiana Vocational Technical College
1711 Maumee Avenue
Fort Wayne, Indiana 46803
Phone 219/423-3573

LAFAYETTE – REGION 4
Indiana Vocational Technical College
616 Webash Avenue
Lafayette, Indiana 47905
Phone 317/423-1533

KOKOMO – REGION 5
Indiana Vocational Technical College
3717 South Reed Road
Kokomo, Indiana 46901
Phone 317/453-5880

MUNCIE – REGION 6
Indiana Vocational Technical College
1300 South Liberty Street
Muncie, Indiana 47302
Phone 317/289-2291

TERRE HAUTE – REGION 7
Indiana Vocational Technical College
R.R. 22, Box 450
Terre Haute, Indiana 47802
Phone 812/299-1121

INDIANAPOLIS – REGION 8
Indiana Vocational Technical College
1315 East Washington Street
Indianapolis, Indiana 46202
Phone 317/636-6100

RICHMOND – REGION 9
Indiana Vocational Technical College
710 Northwest 5th Street
Richmond, Indiana 47374

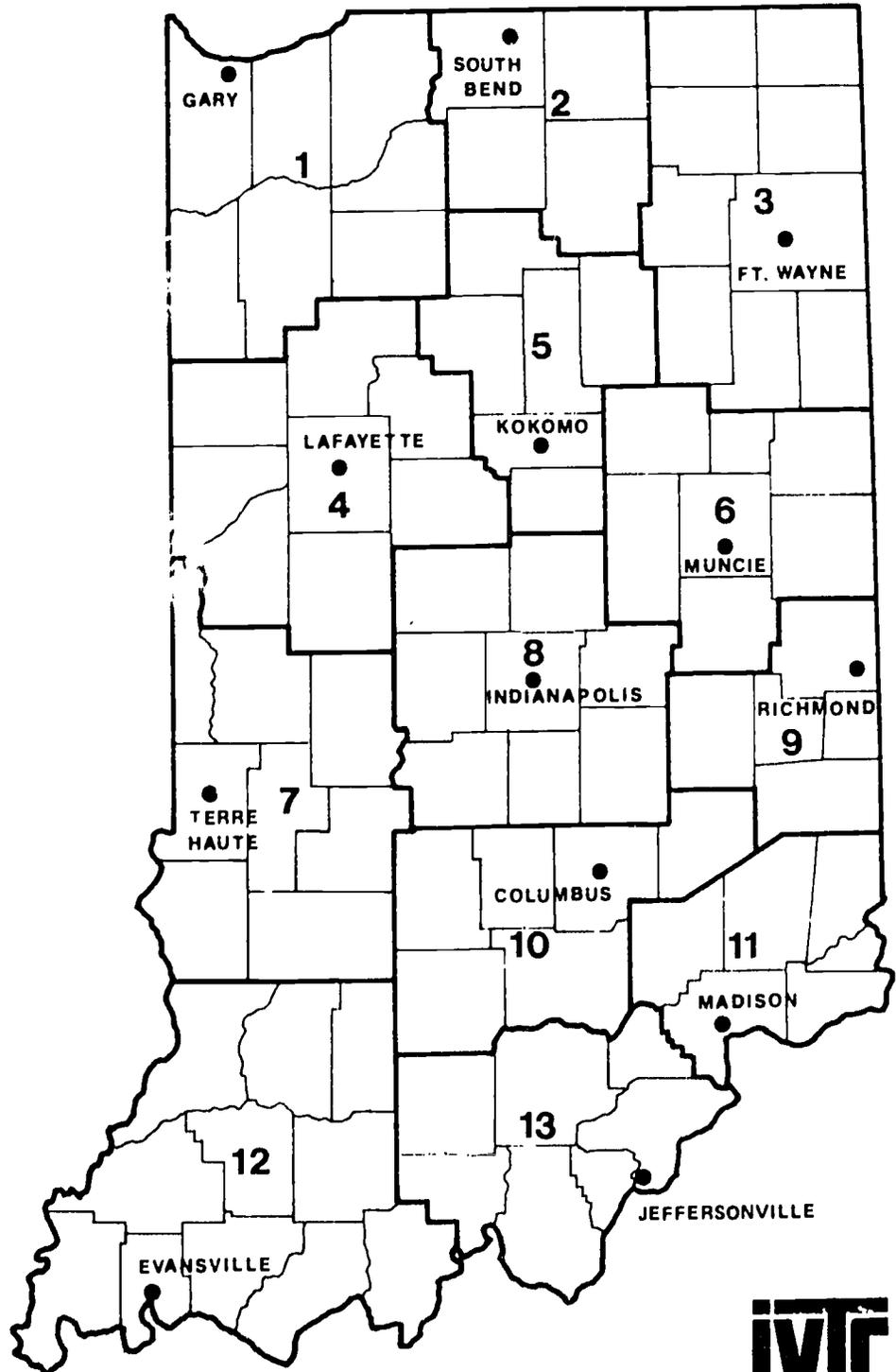
COLUMBUS – REGION 10
Indiana Vocational Technical College
646 Franklin Street
Columbus, Indiana 47201
Phone 812/372-9925

MADISON – REGION 11
Indiana Vocational Technical College
First and Broadway
Madison, Indiana 47250
Phone 812/266-2680

EVANSVILLE – REGION 12
Indiana Vocational Technical College
3601 First Avenue
Evansville, Indiana 47710
Phone 812/426-2866

JEFFERSONVILLE – REGION 13
Indiana Vocational Technical College
510 Spring Street
Jeffersonville, Indiana 47130
Phone 812/228-6607

Indiana Vocational Technical College Regional Offices



CENTRAL OFFICE -- 5221 Ivy Tech Drive, Indianapolis, Indiana 46268, (317) 297-3210

the research in the Division.

In the past ten years, Iowa has experienced major changes in its educational delivery system. Responsibility for education remains at the local level with program approval for reimbursement and funding purposes remaining within the realm of the Department of Public Instruction.

Elementary through high school aged children are educated through the efforts of 450 local school districts.

Secondary and post-secondary education is provided through Merged Area Schools. These are schools which offer vocational or technical education training or retraining; or, and area community college which offers liberal arts/college transfer programs as well as vocational/technical training.

In Iowa, secondary schools are considered to be educational institutions that provide career education programs, services, and activities for students in any grade 7 through 12. These secondary schools are administered under 15 Area Education Agencies (AEA's) whose boundaries are coterminous with the boundaries of the merged areas. (See Figure 12). The agency is governed by a board of directors, which identifies and serves children from under 5 years of age through grade 12 who require special education. Service is provided directly or by contractual arrangement with public or private agencies these special education programs. Services include media services, and other services requested by the local boards of education, such as, data processing and in-service education for teachers. These do not duplicate programs and services provided by the area schools. Since Iowa is markedly rural, delivery of education at the local level is somewhat difficult. To provide better delivery of education, jointly administered programs are administered through mutual agreements between two or more secondary schools, or between a secondary school and a merged area school. A merged area is defined as 1 of 15 geographical areas in Iowa where two or more school systems or parts thereof have merged resources to establish and operate a vocational school or a community college. As can be seen by referral to Figure 12, 26 major campuses are operated within these merged areas. These co-educational institutions are operated under an "open-door" policy and are open to high school students who qualify for the special programs offered. However, the main thrust is to provide post-secondary education to post-high school aged Iowans.

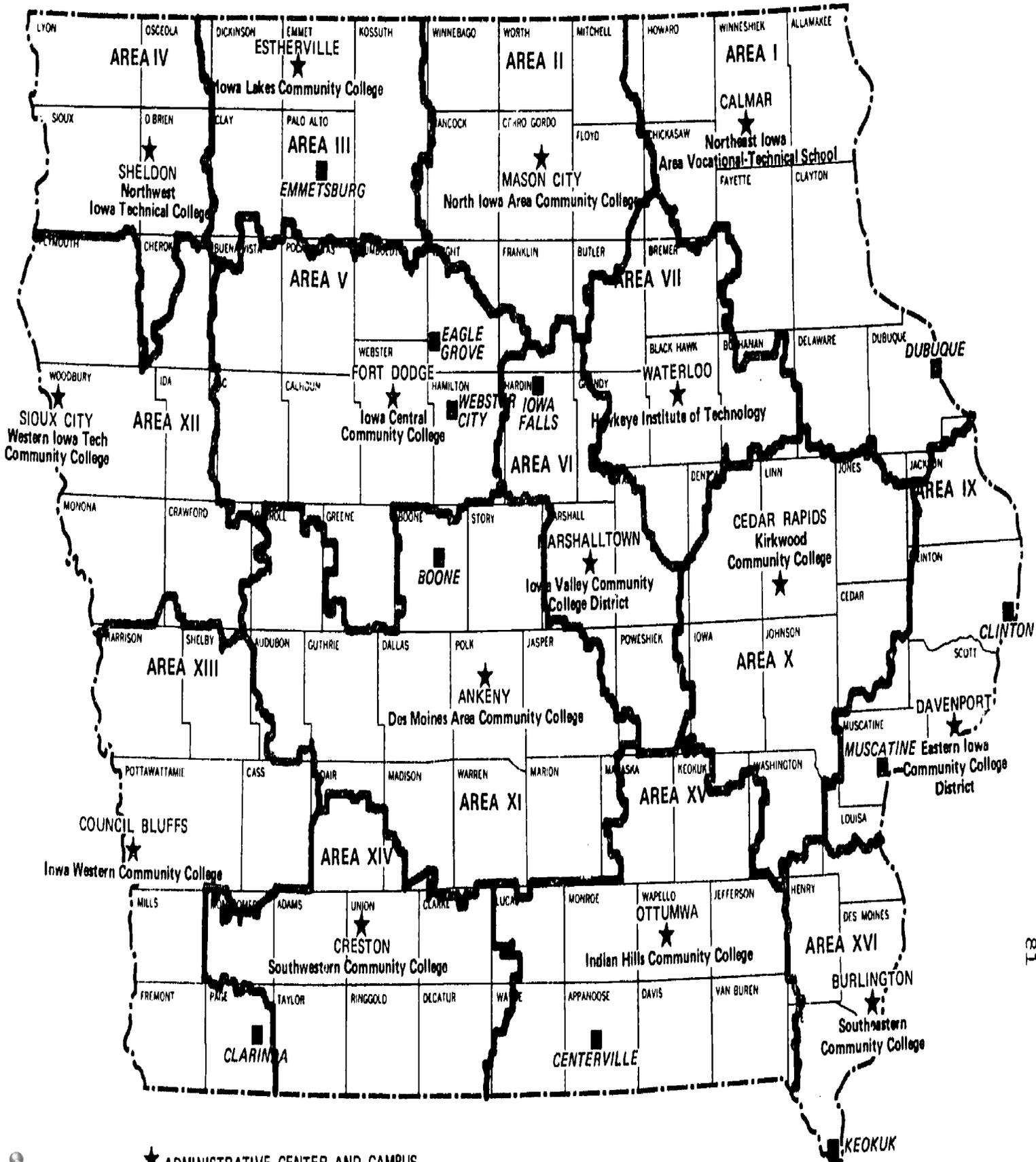
For the past 5 year period approximately 65% of the total funding in vocational education has gone to the development of the post-secondary level of instruction. This may continue or change based on identified needs of students and employers. Presently comprehensive vocational education programs, are offered in 5 occupational areas within the state either through joint agreement or through merged area schools. Five Associate Degrees are offered in Arts, Science, Applied Arts, Applied Science and General studies. Up to 16 credit hours are in many cases transferable to Regent institutions. Transfer of credits between the merged area schools is readily done.

Vocational education is viewed as a part of career education. Figure 13, presents a diagram of their conceptualization of how career and vocational education fits into the societal milieu.

Adult education, often referred to as supplementary education, is usually presented through short courses although some courses of study

Figure 12:

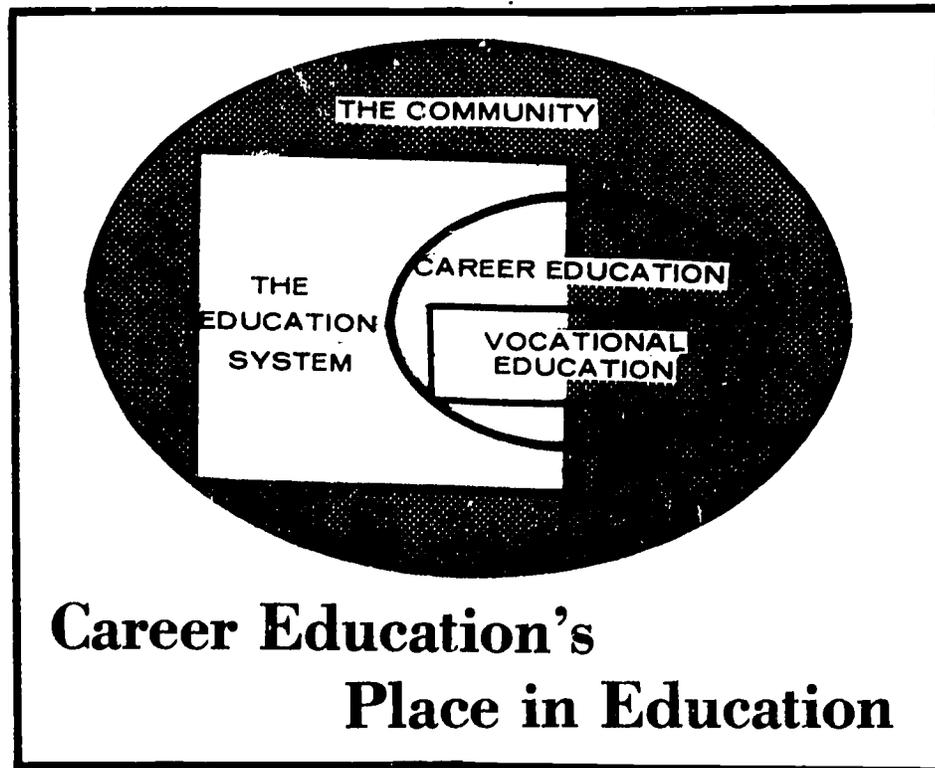
MERGED AREA SCHOOLS



★ ADMINISTRATIVE CENTER AND CAMPUS
 ■ OTHER CAMPUS (AREA SCHOOLS WITH MORE THAN ONE MAJOR CAMPUS)



Figure 13:



The above diagram presents a pictorial view of the relationship of vocational education to career education, the education system, and the community.

at this level last as long as three years. The main focus at this level of instruction is upgrading of adults in their occupational areas. Before 1960 all adult education was conducted by LEA's. After 1967 these programs were administered by area community colleges or merged area schools and offered at facilities belonging to a local school system or local business.

Four year institutions of higher education provide both preservice and inservice training for teachers. Funding in support of vocational teacher education is dealt with through a contact with each of 3 major state universities and Drake University. This agreement takes place between the institution and the Career Education Division. Additional training of vocational educators also takes place at private colleges of which there are 24.

The State Board Staff indicate a major problem for vocational education is to become a part of the whole effort of education in general. Thus far it has been an isolated entity. Another problem is that of articulation between the local school districts and the merged area schools and between the merged area schools and the university structure. In getting up to date in preparing for the coming of the 21st Century there is a need to identify new and emerging occupations and to make thrusts forward in the major service areas and in the adult education curriculum in preparation for the future. Rehabilitation of prisoners and their education will be dealt with in the local community. There must be an effort made to restructure in order to eliminate working across agencies to facilitate such things as education and rehabilitation. Serious efforts must be put forth to facilitate effective career awareness and exploration in education so that young people can move from a chosen cluster of occupations to a final choice of an occupation. It is thought that the greatest help to vocational education is the greater emphasis being put on career education programs.

Michigan

Career Education Planning Districts (CEPD) have been established in Michigan for purposes of planning and activity coordination for vocational education. (See Figure 14). Each of the 50 CEPD's has a council composed of representatives of K-12 districts, intermediate districts, and community colleges located within the CEPD boundary. Half of the members on the CEPD council represent expertise outside the field of education. Each council has a CEPD coordinator who coordinates program planning and program applications. The coordinator is also responsible for submitting recommendations to the state for program implementation.

One of the subcommittees within the CEPD council is responsible for vocational education activities. This committee is comprised of vocational education directors, community college deans, and principals of area centers who develop applications for vocational programs within the state. Applications are presented to the entire CEPD council for review. Though the CEPD council is considered to be a rubber stamp at times, the subcommittee does indulge in hard bargaining. State personnel say that the effectiveness of CEPD councils varies.

Initial competencies have been established at the secondary and post-secondary levels of instruction which allows for "open-entry"

Figure 14:

CAREER EDUCATION PLANNING DISTRICTS



and "open-exit" instruction. This system occurs within Michigan's Area Vocational Centers. (See Figure 15). Secondary students enrolled in vocational programs attend area vocational centers in half day blocks and attend regular classes at their home school the alternate half day. This prevents segregation of vocational students from regular high school students.

In order to qualify to offer vocational education within a service area in Michigan, the secondary program plans must include 15 vocational program options as requirement. Michigan state personnel prefer that 5 different occupational fields be presented; however, this is not a requirement.

Approximately 89,000 people are enrolled in vocational and technical education programs in Michigan's 29 community and junior colleges and 10 of Michigan's public four-year colleges and universities. Their goal is preparation for initial employment, job upgrading and/or updating of present job skills. Nearly 50% of the people enrolled in Michigan's community and junior colleges are enrolled in vocational-technical education programs. (See Figure 16.)

In 1965 the Michigan State Board of Education recognized the community college as a prime deliverer of post-secondary vocational education. However, as late as 1966 political battle continued between intermediate school districts and community colleges concerning who should be responsible for providing secondary vocational education. This conflict was resolved in 1967 with state board action recognizing a variety of delivery systems for vocational education, and at that time, a number of rural community colleges were sold to electorates to deliver a dual system of secondary and post-secondary vocational education. Because of great financial burdens and a change of state funding patterns, this trend did not continue. Though successful joint delivery has been carried on in some areas, the community college for the most part, has found funding to be a problem.

Relating to administration, Michigan vocational personnel believe that their vocational division can no longer afford the luxury of subject matter specialists. The philosophy is that subject matter expertise should be at the local level allowing a small number of state staff to be organized according to function with two branches representing operations and delivery.

State department personnel say that community colleges particularly in rural regions of Michigan may not demonstrate the quality vocational-technical services that a technical institute may more readily offer. Nevertheless, within the community college delivery system, a more balanced perception of educational needs is available. The main disadvantage of the community college for vocational education delivery is that some educators view vocational education as a step child in relation to liberal arts and transfer programs. An advantage to the community college setting for providing vocational education is the established acceptable image of the community college as an educational agency.

Figure 15: SECONDARY AREA VOCATIONAL EDUCATION CENTERS

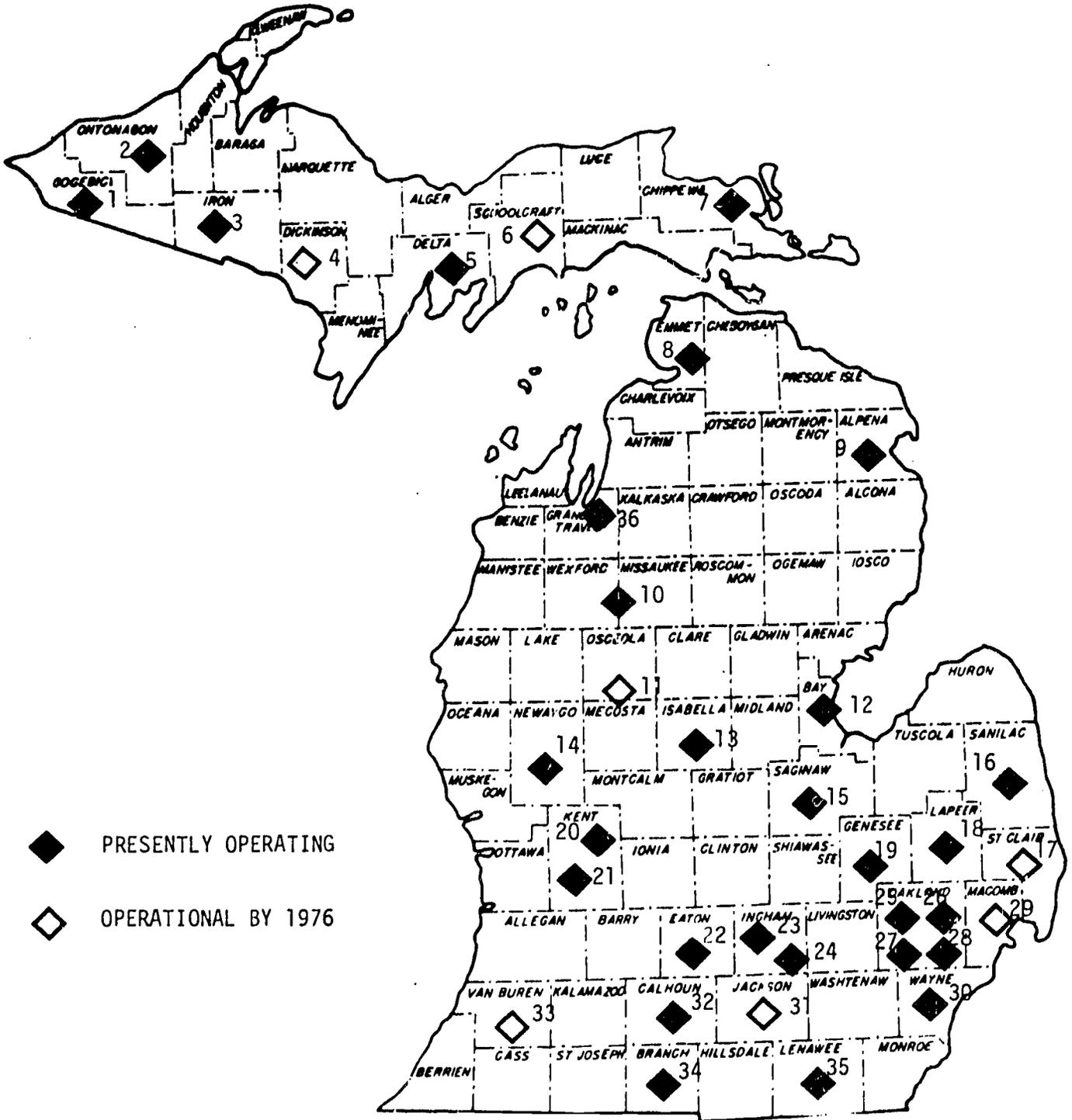
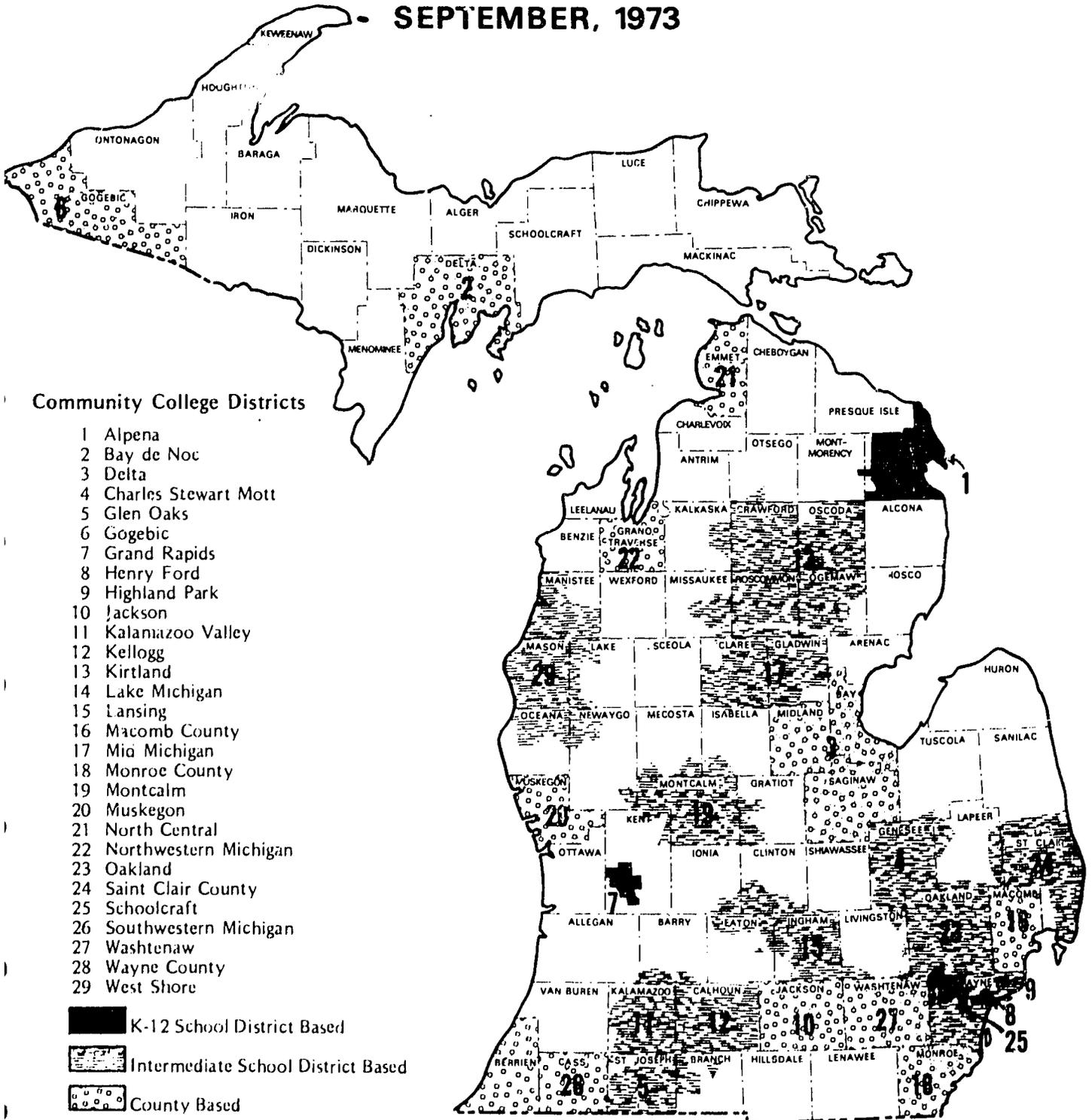


Figure 16:

OPERATING COMMUNITY COLLEGE DISTRICTS IN MICHIGAN

SEPTEMBER, 1973



Michigan state personnel with the support of Michigan legislators are facilitating articulation through the implementation of performance objectives. State personnel believe that vocational students should be able to move from the skill level attained in the secondary level and re-enter education with the same skill level in the post-secondary level. In a statewide effort to adopt the performance objectives, 1,000 teachers participated in development of objectives and over 1,000 employers reviewed the objectives. The final objectives were printed and sent to each school district for adoption. School district personnel were free to reject the printed objectives; however, they were expected to create objectives of equal or greater quality than the statewide objectives.

Through secondary and post-secondary education institutions' role statements, articulation agreements, and the adaptation of performance objectives, Michigan vocational leaders hope to institute long-range articulation. To establish the adopted objectives as an operational part of the instructional process, .5 million dollars of vocational monies are to be used for inservice education for teachers in all educational levels. As members of the Southern Association of Colleges and Schools VETECs Consortium, Michigan vocational educators are reviewing the second layer of objectives developing them through task analyses and objective reference tests.

Michigan state vocational personnel believe that vocational programs should not be confined to the secondary or to the post-secondary level; consequently, vocational delivery has been designed to allow students to enter vocational education at either educational level with their existing skills and to develop their skills to their capacity. Identical performance objectives provide the framework for curriculum in both secondary and post-secondary levels of vocational education; therefore, both entry-level and technician level skills are taught in the community college.

The major role of Michigan's four year college or university as they relate to vocational education in Michigan is to provide for certification of vocational teachers. State personnel believe that universities are not able to provide the quality technical courses needed for up-grading vocational teachers skills, so they provide state-financed internships for teachers to enter appropriate educational or industrial institutions for training.

A major problem in vocational education in Michigan is the lack of long-range planning at the local level. The community college has been participating in future projections to some extent; however, the procedure could be greatly improved. A special committee on the state staff has been appointed to develop a long-range plan for vocational education involving the CEPD districts.

Another area of concern is that the state aid act has reduced the amount of operating money available to school districts. This limits the amount of vocational education funds that can be given to school districts, for example, the local districts must match vocational monies on a 50-50 basis for equipment expenses. During fiscal year 1975, the state approved \$2,100,000 for secondary vocational programs equipment expenditures. The state gave an additional \$200,000 to the districts during the year. In FY 1976, since state funds are reduced, there is six to seven hundred-thousand dollars of equipment money that the schools will not be able to use.

According to state personnel, Michigan is not facing serious financial difficulty. A larger amount of state aid money would be beneficial to finance the added cost; nevertheless, the deficit is viewed as a minimal amount, three to four million dollars. The reimbursement of vocational programs has diminished to 75% of the added cost in comparison to 100% reimbursement in past years.

There is a need for local vocational program articulation. A demonstration project has been conducted for three years between a community college and an area center. During fiscal year 1976, the state is planning to present three meetings throughout Michigan to disseminate the information learned as a result of the project.

The Michigan schools have adopted the use of performance objectives in classrooms; however, putting the performance objectives into practice presents a challenge. During fiscal year 1976, performance objectives were to be used in the classroom. To amend this problem, inservice programs are being conducted to initiate the use of performance objectives by the teachers.

Initiating vocational education area centers in the Detroit area having eight regions representing eight superintendents and eight local boards presents a challenge to state coordination by department personnel. After a desegregation court order and rulings of a federal judge, Detroit agreed to build five area centers within the next five and one-half years with twenty-two million city dollars matching state funds.

Transportation of students to area vocational centers and shared time programs present problems related to distance, causing high expenditures on the state level to finance busing operations. (See Figure 15).

In addition, improvements are needed in local short term planning, and there is a need for vocational educators to interact and cooperate with each other. More information is needed on jobs available for vocational students.

Minnesota

Minnesota has not established vocational education planning regions as such, but two regional planning efforts have divided the state into Special Education Cooperative Units (SECU) and Educational Cooperative Service Units (ECSU). The ECSU's comprise 11% of Minnesota. Minnesota's governor is investigating the possibility of one planning base for pre-school and K-12 educational programs.

Minnesota has 443 local independent secondary school districts and 3 intermediate school districts, 20 of the districts do not offer vocational programs. Of the districts receiving financial aid, eighty districts have 1 or two vocational programs while the remaining school districts provide 3 or more vocational programs. The 271 districts involved in cooperative centers offer from 5 to 80 programs.

Minnesota's cooperative center concept began in 1969 with two pilot projects. One project involved transporting teachers and the other project involved transporting students. Generally, the largest school district in the cooperative unit houses a majority of the vocational programs and serves as the administrative center; however, a variety of operating facilities may be used. In Minnesota the term "center" refers to operating facility(ies) that may serve a variety of service areas.

Minnesota's cooperative centers' daily time schedule is based on three 2-hour blocks of time, so that vocational students attend a 2-hour instructional block per day.

Minnesota state vocational personnel have proposed a minimum requirement of from 12 to 15 program options by 1979. (See Figure 17).

Minnesota has 33 vocational-technical schools called Area Vocational-Technical Institutes (AVTI's). (See Figure 18). Thirty of the AVTI's function as a part of the local K-12 school and 3 are part of the intermediate school districts. These 33 schools, housed in 34 buildings are costing an estimated 100 million dollars. They are administered by elected members of the local board of education, a local superintendent and a director of vocational-technical education. The AVTI's offer 450 different programs and enroll 29,000 students. They have a record 92 percent placement of their students. The first area school began in 1950, and were formed as an aftermath of old war production programs that existed throughout the state.

Any student under the age of 21 who possesses a high school diploma or its equivalent may attend an AVTI tuition free. Students who are over 21 years of age must pay a tuition of \$2 per day providing they are residents of Minnesota, and \$5 per day if they are non-residents of Minnesota. State funds totaling 5.2 million dollars are set aside for post-secondary vocational education for fiscal year 1976, and 12 million dollars are set aside for secondary vocational education.

There are 20 community colleges in Minnesota that operate independently of the AVTI's and some of these colleges offer vocational education. Approximately eight years ago the community colleges represented twice the enrollment of the AVTI's. Presently AVTI enrollments exceed community college enrollments by 30-40 percent.

Within the last five years universities have become interested in AVTI programs. In most state universities, a two-year vocational or technical program in an Area Vocational-Technical Institute is equated to 70 university credits, however, the University of Minnesota and the state's community colleges allow 45 credits while one state university allows 90 credits.

Since 1965 AVTI programs have operated on the basis of competencies. A standard curriculum is available for all programs in AVTI. Each student receives the same program of instruction and is free to complete the program at his own rate. A diploma, a degree, or credits may be awarded to a student depending on the students' needs; however, the competencies that a student achieves are considered to be primary focus and concern of the AVTI.

Primary focus of vocational education programming is at the post-secondary level. Minnesota state personnel justify this focus on the grounds that more highly skilled workers may be trained in the post-secondary setting. Since high schools offer a variety of educational programs to students, less time is available for vocational education. The minimum number of instructional hours in the Area Vocational Technical Institute is 6 hours/day totaling 30 hours/week opposed to the 2 hours of instruction per day totaling 10 hours/week in the secondary level. Minnesota state personnel are proud of the low unemployment rate of 18-25 year olds in their state in relation to the unemployment data for this age group in other states.

Figure 18:
LOCATIONS OF MINNESOTA'S 33
AREA VOCATIONAL-TECHNICAL INSTITUTES



The three objectives of Minnesota secondary vocational education are preparation for employment, in-depth career exploration in one field, and the development of prepostsecondary competencies for employment.

In Minnesota, university personnel are responsible for providing an annual three week (120 hours) preservice workshop for non-degree teachers. School administrators are responsible for arranging for the non-degree teacher to attend the workshop. Minnesota supports this workshop with state monies and \$6,000 to \$7,000 of Part B monies each year.

Minnesota state personnel cite a number of problems relating to the delivery of vocational education at both the secondary and post-secondary levels of instruction.

Secondary school districts are not required to offer vocational education, and even though the state constitution implies that Minnesota should offer education that meet student needs, 20 districts do not offer vocational education. The drop-out rate is low in Minnesota. Of those who finish high school, 70% will not finish college.

A number of citizens of Minnesota believe that vocational education is forcing the reorganization and consolidation of local school districts. Many of these people do not want to consolidate.

Loss of administrative power when forming cooperative agreements is another problem at the secondary level. The superintendent of the large district may support vocational education and offer a variety of quality programs to his students. However, joining with surrounding school districts to involve all students in a center would require the establishment of a governing board comprised of all superintendents in the cooperating school districts. If these small school districts join the larger school district, the superintendent of the large school district may contribute 80% of the students but have only 25% of the administrative power. Few superintendents of large districts want to involve themselves in this situation. To provide an incentive for forming cooperative centers, state vocational personnel offer funds for supplies in cooperative centers.

Vocational personnel are criticized for being parocial in the handling of funds at the post-secondary level. The Area Vocational Technical Institutes do not offer athletic programs or studies of the arts. Therefore students are not considered to have the "finishing" that they may receive from other schools. Vocational personnel are constantly reminding others that the mission of the AVTI's is job preparation.

Anticipating needs of industry for new and emerging occupations and expanding existing occupations is a constant challenge. Environmental studies, atomic energy and non-destructive testing are examples of programs developed from anticipating labor market demand,

The problem of matching production of trained workers to manpower needs continues to be a challenge. The practice of relating funding to level of placement is a strong tool in controlling over production in some fields.

Because the AVTI system represents a substantial amount of vocational funds and a greater enrollment than community colleges, there is some pressure from AVTI's and community colleges to merge. Vocational personnel, however, are not interested in becoming a second-rate curriculum.

Ohio

In Ohio there are six types of secondary school districts: city, local, exempted village, county, and joint vocational school districts. These Ohio school districts have been organized into 101 vocational education planning districts to deliver secondary and adult vocational education. (See Figure 19). Of the total 101 VEPD's 32 are single districts where the jurisdiction of the vocational planning district coincides with that of the school district, 20 are contract districts made up of a combination of school districts and 54 are joint vocational school districts. Because the planning district also serves as the operating agency the personnel within the VEPD have a strong motivation to work together.

Ohio state personnel require that there be an enrollment of at least 1,500 students in grades 9-12, a minimum of 20 classes, and twelve different occupational taxonomy programs. No more than four of the 12 programs may be cooperative.

All of the states make it possible for K-12 school districts to serve three functions: service area, operating agency and operating facility. However, because of the inadequate financial base of the K-12 district structure, a number of districts in Ohio must cooperate to offer vocational education to students.

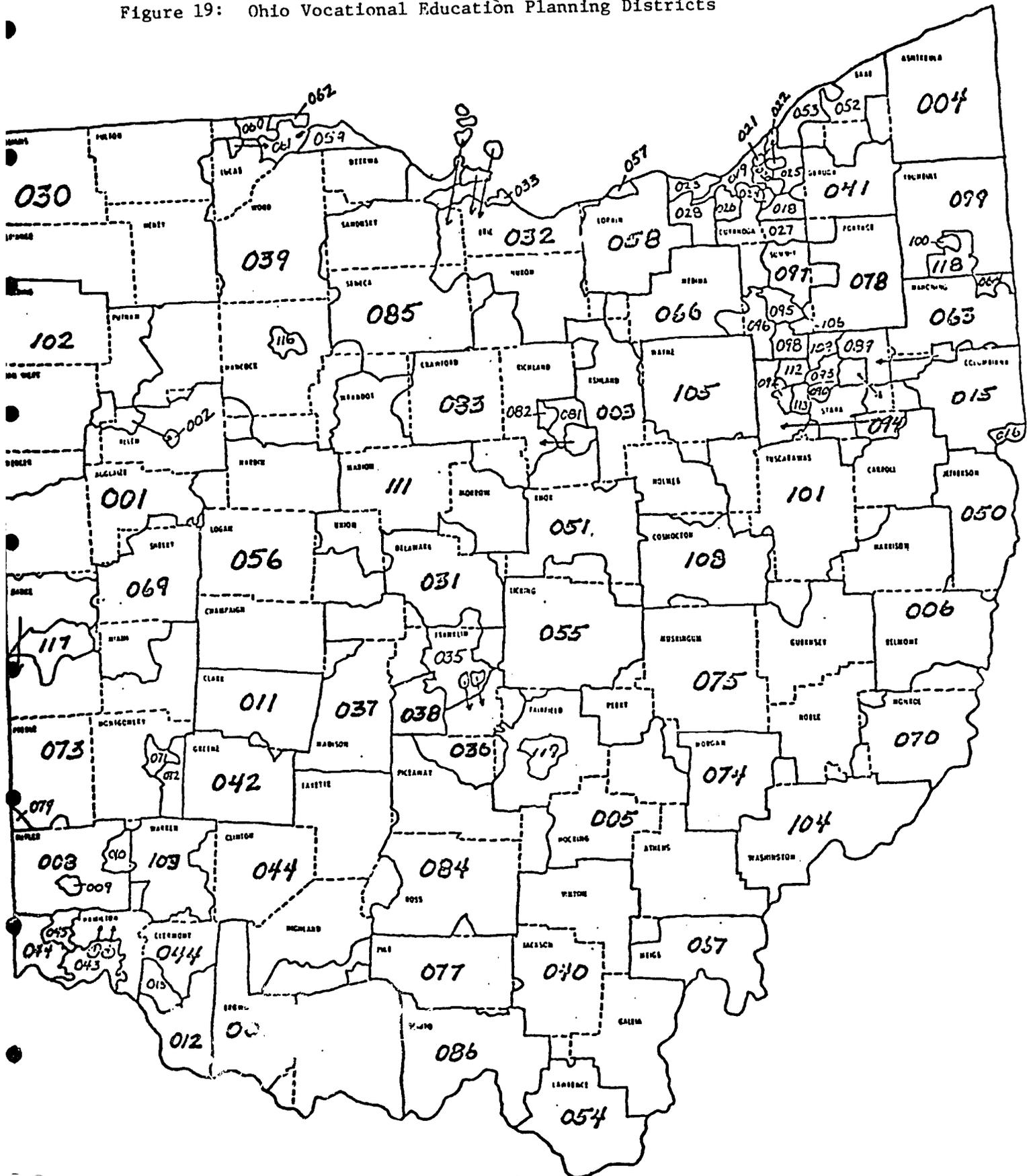
Vocational operating facilities may be existing facilities in business and industry, post-secondary institutions, or district high school buildings. Local vocational personnel may also decide to build facilities separately or as additions to existing high school buildings. Use of existing facilities generally involves busing students among a district's schools or among school districts. On the whole, cooperative district programs using existing facilities have proved to be inefficient involving problems in coordination of programs and transportation. Nevertheless, these programs have served as springboards to breaking down barriers to cooperation among school districts. When local education agency personnel find that trust and communication with neighboring districts is possible, they are likely to enter into formalized agreements forming legal entities of multiple districts.

The multiple district as a legal entity has proved to be an efficient system for the delivery of vocational education, for a new operating agency is established separate from the participating schools.

In Ohio the Joint Vocational School (JVS) is an operating facility separate from the participating home school buildings serving a JVS district service area. Students attend regular and vocational classes under this system. The JVS is the most common mode of vocational education delivery in Ohio. The first JVS was built in 1965. Thirty-seven JVS districts are operating. Six are scheduled to be built in 1977 and six are scheduled to be built in 1978.

Ohio emphasizes the implementation of vocational programs at the secondary level, for high school is the last chance for formal education of many youth. In a survey of 20,000 tenth graders in fall, 1976, state personnel found that only 30 percent of the students planned to go on to college and previous research shows that 50 percent of the people who enter college do not finish. In Ohio there are two million students in public school education and only 265,000 students in higher education.

Figure 19: Ohio Vocational Education Planning Districts



Over 200 different post-secondary programs are operating in Ohio at the present time. Post-secondary delivery in Ohio is accomplished through associate degree programs in community colleges, 17 technical institutes, 23 university branches, and 13 four year institutions administered by the Ohio Board of Regents. One-year full-time programs may be offered in any school that meets the standards of 25 hours per week for 36 weeks; therefore, secondary school districts may offer one-year post-secondary vocational programs after three o'clock p.m.

A memorandum of understanding between the Ohio Board of Regents and the Ohio Department of Education delineates the roles of each in relation to post-secondary education. The Department of Education is responsible for leadership and development of new programs and the board of regents is responsible for the major funding on an FTE basis and establishing minimum standards. The Department of Education funds on a unit basis providing they meet their standards which are not necessarily in agreement with the standards of the Board of Regents. Since there is only one representative for vocational education that serves as a member of the board, supervision and follow-up activities are accomplished by state supervisors representing each program area in the division of vocational education.

The Board of Regents suggests that transfer of credit be accomplished between the two-year and four-year programs. However, not all credits are transferable. Credits accepted for transfer are at the discretion of the accepting institutions. Among associate degree programs the Board of Regents gives the institutions permission to match courses and if there is no appropriate match of courses, transfer is not required. The receiving institution has the prerogative to accept or reject courses from another institution.

The Division of Vocational Education personnel do not have an official position with the Board of Regents to make policy regarding articulation activities. The Board of Regents recognized that there should be a method where Vocational credits might be accepted by universities. This concept suggests the need for competency-based curriculums, so that competency rather than credits may be used as a basis for transfer.

In Ohio non-degree teachers receive temporary teaching certificates. Teacher educators through the university structure are responsible for supervising these teachers in their classrooms and in their educational preparation until they are eligible for a provisional teacher certificate.

Wisconsin

Wisconsin has a number of structures involved in the delivery of vocational education. Presently there are 436 local districts related to elementary and secondary education. In 52 of the districts K-8 instruction is provided and 384 provide instruction at levels K thru 12.

As service units between the local school districts and the state superintendent Cooperative Educational Service Agencies (CESA's) were developed in 1963. They are designed to serve educational needs in all areas of the state as a convenience for school districts in co-operately providing to teachers, students, school boards, administrators and other, special educational services including, such programs as research, special student classes data collection, processing and dissemination, in-service programs and liaison between the state and local school districts (Chapter 116.0, Laws of Wisconsin Relating to Public Schools, 1974, p.356).

For a visual review of Wisconsin school districts, CESA's counties and high school locations, (See Figure 20).

Local Vocational Education Coordinators are employed by local or CESA Districts within Wisconsin to provide vocational education to students in need of or desiring such instruction. According to Wisconsin Statutes the Department of Public Instruction (DPI) must provide education to all handicapped students from the age of 3 through 20 years. This instructional endeavor is accomplished through cooperation at the DPI between personnel from the Division for Handicapped Services and Division for Instructional Services, Bureau for Career and Manpower Development in cooperation with LEA's, CESA's and County Handicapped Children's Education Board (CHCEB). (LVEC Handbook, 1970, pp. 3-51). Special services extended to handicapped students include: diagnostic and assessment work, pre-vocational preparation, individual attention in learning, tutoring, special teaching methods and techniques and the involvement and employment of handicapped persons. (State Plan for Vocational Education in Wisconsin 1976-80, p.22).

Secondary vocational education programs are originally submitted by independent schools or by LVEC's under the signature of the district administrator to the DPI for initial approval and practical or full funding. High schools in Wisconsin offer comprehensive programs in vocational education under a "Capstone" concept. Essentially, exploratory experiences are offered the junior high school student by teachers who work in conjunction with the LVEC's. Teachers at this level of instruction receive inservice instruction from the LVEC's for more effective programming. At the senior high school level, the Capstone Program offers more exploration, and the beginnings of skill courses with an intensive skill course offered during the senior year. Usually this course is achieved through a simulated experience or by working on the job through a coop program. If student needs are not met in this type of programming, individual students from the age of 16 to 18 may enter technical schools usually attended by high school graduates or equivalents and adults on a contractual basis.

Recent estimates show that 40% of high school graduates enter 4-year universities and about 20% actually receive baccalaureate degrees. Public school districts realize a 4.2% withdrawal of students per year on the average. Approximately 20% of Wisconsin high school graduates enter post-high vocational-technical and adult schools while approximately 60% of those students who have attended reimbursed vocational education programs at the high school level enter the labor market upon graduation.

Comprehensive post-secondary vocational education is provided in vocational schools referred to as Technical Institutes of Colleges that are located in 16 Vocational, Technical and Adult Districts within the state. (See Figure 21). A variety of programs are offered in these institutions. Included are short courses, 1 and 2 year programs, and associate degree programs. These districts administer adult programs, also, which are offered at these institutions as well as at other public and private facilities within communities in an extension effort administered by Field/Community Service personnel employed by individual VTAE Districts.

Articulation between secondary and post-secondary schools has realized improvement recent years. Through the efforts of administrative personnel, new articulation projects are underway.

Transfer of credits from post-secondary institutions remains the prerogative of the registrar at the admitting university. Courses from

WISCONSIN

FIGURE 20: Districts Operating High Schools Cooperative Educational Service Agencies



LEGEND

- School districts operating high schools
- Cooperative Educational Service Agencies
- - - - County lines
- High school locations

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WISCONSIN DEPARTMENT OF PUBLIC INSTRUCTION
 Dr. Barbara Thompson, State Superintendent

DIVISION FOR SCHOOL BOARD AND ADMINISTRATOR SERVICES
 Bureau for Administrative Services

the general studies curriculum are more readily transferable than are technical courses. Transfer of credits based on competencies are not a reality in Wisconsin; this is mainly due to differences in curriculum presented at the two types of institutions.

Public education at the higher education level falls under the University of Wisconsin System. This system has 13 campuses which are administered from its central office at Madison, Wisconsin. A board of regents in cooperation with university administrative personnel receives budget approval from the legislature and the governor. All campuses offer teacher education certification at the elementary and secondary school levels. Figure 22 shows that 7 campuses offer pre-service vocational education teacher preparation and certification in specified occupational areas. Absent is health occupation teacher education preparation which has thus far been achieved entirely through in-service instruction relating to teacher preparation exclusively for the post-secondary level instructors.

Important to the delivery of vocational education is the Cooperative Area Manpower Planning System (CAMPS). (See Figure 23). This system was formed in 1967 in a response to the need for cooperation and coordination in planning and implementation of manpower programs. It was developed to assist programs that cut across departmental and agency lines at Federal, State, and local levels so that successful, effective and economical implementation of manpower programs.

CAMPS committee members relate to Federal agencies such as: Departments of Agriculture; Commerce; Health, Education, and Welfare; Housing and Urban Development; Interior; and Labor, also to the Office of Economic Opportunity and the Civil Service Commission. Area CAMPS Committees help to develop Area Manpower Plans that are reviewed and approved at the area and state levels. Plan development includes: summarization of economic conditions, labor market supply and demand, and anticipated economic developments; identification of manpower problems, goal determination, priority establishment; resource identification and plans for resource utilization; provisions for administrative and operating linkages; provisions for employer involvement; and assessment of resources in relation to needs (LVEC Handbook, 1970, pp. 2-19-20).

In Wisconsin there are a number of concerns relating to the delivery of vocational education. Department of Public Instruction Personnel working at the secondary level are concerned with provisions for their students to achieve advanced status when entering the post secondary system. Cooperative efforts are taking place across the state to bring about program articulation to accomplish this goal.

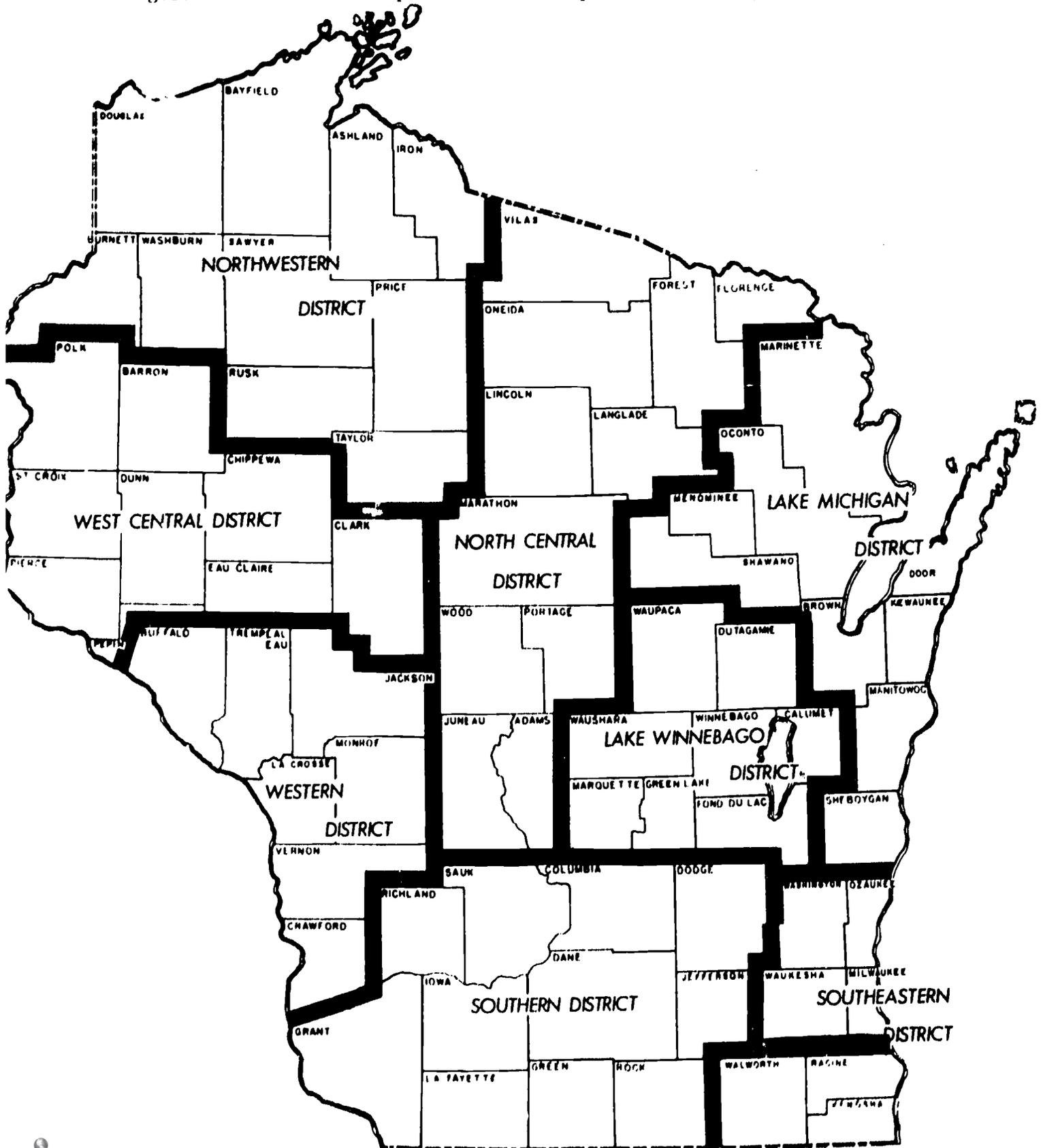
Another problem relates to funding. It is believed that there should be identified state funds for vocational education at the secondary level. Presently, the only "categorical funds" for vocational education at the secondary level are a share of the federal dollars.

At the post-secondary level one major concern is governance. Presently, the State Board for Vocational, Technical and Adult Education is appointed by the governor. The district boards are also appointed boards. There have been pressures to have the district boards elected. There also remains the problem of balance of control between the district boards and the state board and other state agencies.

Figure 22: University of Wisconsin Campuses Offering Vocational
Staff Development

	Administration	Trade and Industry	Agricultural Education	Technical Education	Distributive Education	Industrial Arts	Home Economics	Business Education	Office and Business	Industrial Technology	Guidance
Madison	x		x		x		x		x		
Stout		x		x	x	x	x				x
Platteville			x							x	
River Falls			x								
Stevens Point							x	x			
Whitewater					x			x			
Eau Claire								x			
Green Bay											
LaCrosse											
Milwaukee											
Oshkosh											
Parkside											
Superior											

Figure 23: Wisconsin Cooperative Area Manpower Planning System (CAMPS)



Historically, post-secondary vocational and technical education programs have been made available practically without cost to students. User fees have now been imposed by the legislature. A continuing problem related to how to accommodate this new method of support and the appropriate level of support to be provided by users and other funding sources remains.

The problem of program articulation among the VTAE schools, between secondary and post-secondary systems and between the VTAE system and four year institutions remains, although there has been continuous attention to the concern.

Another problem area is that of providing equal opportunity to all youth and adults in the state. Sparse population areas contribute to the problem of providing access. There is also a concern for serving minorities, handicapped and other special groups.

Legislation Effecting Vocational Education Delivery

Important to the delivery of vocational education are federal and state laws that encourage or determine that delivery. The following section addresses some of the major laws that directly effect vocational education delivery. In some cases an historical review is presented where such a review seemed important to recent changes in the state laws related to administrative structure for vocational education delivery.

Contemporary Federal Legislation

Congress called for a two million dollar cut in appropriations for vocational education in 1961. Vocational education was being criticized because some programs were seen as not addressing the needs of the labor market; although, this was less true in the case of trade and industrial and technical programs. Vocational leaders pointed out to the congressional committee that vocational education had made adjustments related to social, economic and manpower requirements and that appropriation cuts were untimely when the needs of the nation indicated expansion of vocational education rather than a constriction of its efforts. The funds were restored.

The year 1960 was the election year in which Senator John F. Kennedy ran against Vice President Richard M. Nixon. An American Vocational Association inquiry into the opinions of each candidate was solicited. Both candidates supported vocational education and the idea of future funding. After his election, President Kennedy called for a review and evaluation of the current National Vocational Education Acts by an advisory body drawn from the education profession, labor, industry, agriculture, and the lay public and representatives of the Departments of Agriculture and Labor. The advisory body had the responsibility to make recommendations for improving and redirecting the vocational program. While vocational educators were pleased such a study would be

made, there was apprehension as to whether the chosen panel would have an understanding of the program and its potential for meeting national needs. Thus, in October of 1961, President Kennedy announced the names of a panel of consultants to the Secretary of Health, Education and Welfare to do the evaluation. After a year's study, the findings of the panel and their recommendations were published in a document entitled Education for a Changing World of Work (U.S. Office of Education, 1963). These recommendations formed the basis for the Vocational Education Act of 1963 (Strong and Schaefer, 1975, pp. 11-13). The general recommendations of the panel were that vocational education in a changing world of work must:

Offer training opportunities to the 21 million noncollege graduates who will enter the labor market in the 1960's.

Provide training or retraining for the millions of workers whose skills and technical knowledge must be updated, as well as those whose jobs will disappear due to increasing efficiency, automation, or economic change.

Meet the critical need for highly skilled craftsmen and technicians through education during and after the high school years.

Expand vocational and technical training programs consistent with employment possibilities and national economic needs.

Make educational opportunities equally available to all, regardless of race, sex, scholastic aptitude, or place of residence (Strong & Schaefer, 1975, p. 13).

Vocational Education funding at the federal level had previously been allocated to occupational categories. The President's panel by contrast made recommendations addressed to groups of people such as high school students, youth with special needs, and youth and adults who were full-time students or who were unemployed. Concern was expressed relating to services and facilities offered to assure quality of vocational and technical instruction. The panel recommended that there be a partnership of local, state and federal support to vocational and technical education. They further recommended that the Federal government match the local and state allocations that had reached an annual figure of four hundred million dollars (Strong & Schaefer, 1975, p. 14).

Major vocational education legislation had not been enacted for 17 years. Considering the evidence and the recommendations provided by the President's panel and recognizing the need for major legislation were Carl D. Perkins of the House and Senator Wayne Morse of the Senate. They co-authored a bill to later be known as the Morse-Perkins Act or the Vocational Act of 1963. They recognized that employment was

demanding more education and higher degrees of skill. Figures in 1963 showed that 40% of the grade school children in the nation would not graduate from high school, 50% of high school graduates would end their education and attempt to secure employment and that only 13% of the 15 to 19 year olds were enrolled in vocational education programs provided by the Smith-Hughes and George-Barden Acts. Out of national need, vocational education legislation became imperative (Strong & Schaefer, 1975, p. 15).

Vocational Education Act of 1963. This act known as Public Law 88-210 was passed by the 88th Congress on December 18, 1963. This act authorized that \$60 million would be appropriated for fiscal year 1964 and \$225 million for each following year. The U. S. Commissioner of Education was allowed to reserve 10% of these funds for research and training programs while 90% was allotted to individual states on a formula basis (Strong & Schaefer, 1975, p. 16). The latter funds were to be used for

1. Occupational training programs not requiring a baccalaureate degree for all persons, youth or adults.
2. For ancillary services to assure quality programs which included but were not limited to teacher education, administration, supervision, research, program evaluation, and instructional materials.
3. Construction of area vocational school facilities (Strong & Schaefer, 1975, p. 16).

Matched funding on a dollar-for-dollar basis was a condition of the 1965 allocations. Ancillary services were to receive 3% of the funds. Some 33.3% of the state's annual allotment prior to July 1, 1968, was to be spent for youth who had left school and/or for construction of area schools. After this date, 25% was to be spent for these purposes.

Administration of the Vocational Education Act of 1963 was through each state's vocational education board. Required was an annual state plan to be submitted to the office of the U. S. Commissioner of Education. This plan had to include provisions for board cooperation with their state employment service (Strong & Schaefer, 1975, p. 16).

In accord with the prior House Conference Committee provisions of the original House passed bill, the following amendments to the Smith-Hughes and George-Barden Acts were included in the Vocational Education Act of 1963:

1. Funds allotted to the states from the Smith-Hughes and George-Barden Acts could be used for the purposes and subject to the conditions set forth in the Vocational Act of 1963.

2. Training in agriculture was broadened to include any occupation involving knowledge and skills in agricultural subjects. Formerly instruction was for occupations involving work on the farm only.
3. Funds allotted for home economics could be used for vocational education to fit individuals for gainful employment in occupations involving knowledge and skills in home economics subjects and a requirement that at least 10 percent of funds be spent for that purpose.
4. Restrictions for distributive education programs requiring that preemployment programs must be of the cooperative type were removed.
5. Minimum time requirements for trade and industrial programs designed to train for single or semiskilled occupations were removed.
6. Titles II and III of the George-Barden Act relating respectively to practical nurse and area vocational education programs were removed (Strong & Schaefer, 1975, pp. 16-17).

The influences on State legislation due to the passage of P. L. 88-210 were great. The identification of new groups to be served and a substantially higher level of funding gave rise to a whole new era in vocational education. In Wisconsin, for example, the first plan for dividing the state into 15 districts for vocational and adult education was approved in November 1963. Chapter 414 (Wisconsin Session Laws, 1963-64b; Wisconsin Statutes, 1963-64b) was approved in 1964, which enabled county boards to establish vocational and adult education districts. The passage of Chapter 418 (Wisconsin Session Laws, 1963-64c; Wisconsin Statutes, 1963c) allowed two or more contiguous school districts to establish a vocational and adult education district and operate a program. The State Board made plans for an allocated 50% of the federal monies for the construction of area vocational schools in May of 1965. The Department of Public Instruction (DPI) was allocated 35% of the federal funds for the development of high school vocational education programs. While the DPI had the responsibility for supervision of these programs, the State Board held the power of their approval. The State Board was appointed as the administrative and supervisory agency of the 100% federally funded Adult Basic Education Program. There was a surge of new programs within districts in Wisconsin with little consideration for their need. Thus it was that the State Director supported by the State Board ordered that all new full-time programs would require State Office and Board approval. This action was accepted reluctantly by many district directors (Greiber, 1975, pp. 49-51).

As the Federal Government's support to all phases of vocational education grew, a need was created for the review of national programs. Provisions for periodic evaluation were stipulated in the 1963 Vocational Education Act, but until November 22, 1966, there existed no body to perform such evaluation procedures. On this date, President Johnson appointed the first Advisory Council on Vocational Education and directed Martin W. Essex, Superintendent of Public Instruction in Ohio, to head this body. On December 1, 1967, the Council submitted its first evaluation report entitled: Vocational Education: The Bridge Between Man and His Work (U. S. Government Printing Office, 1968). The important contents of this report noted program weaknesses, highlighted unmet program needs and made recommendations which formed the basis for the development of future legislation, more specifically the Amendments to the Vocational Education Act of 1963, commonly referred to as the Vocational Education Amendments of 1968 (Strong and Schaefer, 1975, p. 17).

Vocational Amendments of 1968. Designated as Public Law 90-576, this legislation became law on October 16, 1968, as passed by the 90th Congress. Section 101, Title -- Vocational Education, Part A -- General Provisions states as the declaration of purpose:

It is the purpose of this title to authorize Federal grants to States to assist them to maintain, extend, and improve existing programs of vocational education, and to provide part-time employment for youths who need earnings for such employment to continue their vocational training on a full-time basis, so that persons of all ages in all communities of the state--those in high school, those who have completed or discontinued their formal education and are preparing to enter the labor market, those who have already entered the labor market but need to upgrade their skills or learn new ones, those with special educational handicaps, and those in post secondary schools--will have ready access to vocational training or retraining which is of high quality, which is realistic in the light of actual or anticipated opportunities for gainful employment, and which is suited to their needs, interests, and ability to benefit from such training.

In conclusion, it can be said that the need for vocational education in the nation was imminent and that the Federal Government recognized this need by providing the impetus that encouraged new state legislation. In some cases a restructuring of administration related to vocational education was carried out to better meet the vocational needs of all citizens. Selected legislation important to vocational education delivery within each of the states considered in the report follows.

Illinois State Vocational Education Legislation

Legislative activities in Illinois has been active and continues to be that way. This state adopted its latest constitution in 1970. The Vocational Education Act of 1963 gave Illinois the impetus to re-structure and amend laws that seemed outmoded.

The most significant legislation directly affecting vocational education delivery in Illinois is House Bill 2160 signed by Governor Walker on December 18, 1975. This legislation changed the administrative structure regulating vocational education in the state.

House Bill 2160, 1975. Section 2 4. made the State Board of Education responsible for policy and guidelines pertaining to vocational and technical education and gave it the following powers and duties: (a) To co-operate with the federal government in the administration of the provisions of the Federal Vocational Education Law; (b) To promote and aid in the establishment of schools and classes of the types and standards provided for in the plans of the Board, as approved by the federal government, and to cooperate with State agencies maintaining such schools or classes and with State and local school authorities in the maintenance of such schools and classes; (c) To conduct and prepare investigations and studies in relation to vocational education and to publish the results of such investigations and studies; (d) To promulgate reasonable rules and regulations relating to vocational and technical education; (e) To report, in writing, annually to the Governor: (1) the extent to which vocational education has been established and maintained in the State; (2) the existing condition of vocational education in the state; (3) suggestions and recommendations with reference to the development of vocational education in the state; and (4) an itemized statement of the amounts of money received from Federal and state sources, and of the object and purposes to which the respective items of these several amounts have been devoted; and (f) to make reports to the federal government as may be required by the provisions of the Federal Vocational Education Law, and by the rules and regulations of the federal agency administering the Federal Vocational Education Law.

Section 3 5. of the Bill provided that the State Treasurer would be the custodian of all moneys allotted to Illinois under the provisions of the Federal Vocational Education Law. These moneys are to be kept in a separate fund known as "The Federal Vocational Education Fund" and can only be paid out upon the requisition of the Board in the following manner: The State Comptroller is authorized and directed to draw warrants upon the State Treasurer against "The Federal Vocational Education Fund," upon vouchers certified as correct by the State Superintendent of Education.

These sections are not yet available in the Illinois Codes. For comparative purposes and for legislation these sections replace, refer to Appendix C-1, sec. 695.

of the state board of trustees develop a plan for providing vocational and technical education to the peoples of that region. (c) Section 13a outlined the authority given to the IVTC board. (See page 504 of P.L. 219, items (3, 4, 6) in appendix.)

Again in 1971 the General Assembly, through P.L. 340, amended and added sections to the IVTC legislation. Items of note in this legislation are to be found in amendments to Section 12a and 13a. In 12a continuation of a concept found in the 1965 act was carried forward, this being that the regional board was responsible to plan and develop opportunities for the people of that region "within the framework of state-wide coordination by the board of trustees of the Indiana Vocational Technical College." This legislation further provided an additional dimension to IVTC; the right to offer the associate degree.

During that same session (1971) the General Assembly provided a new agency (P.L. 326, Acts of 1971), known as the Commission for Higher Education of the State of Indiana, whose purpose was to plan and coordinate Indiana's state supported system of post-high school education along with other designated responsibilities. In this new legislation, Section 8 established the powers and duties. Briefly these were as follows: planning and coordination both on a current and long range plan; to report to the General Assembly and the Governor these plans and legislative recommendations; to review legislative budget requests and to make recommendations; to study post-high school educational needs; to approve or disapprove programs and the establishment of new branches, regional or other campuses, extensions, etc.; and the power to adopt rules, regulations, and by-laws.

Section 11 of this law provided that the post-high school institutions retained the right of management, operation or financing "except as expressly set forth in this chapter." Thus in this creation, the General Assembly reallocated post-high school program planning and new institutional locations in the domain of the Commission. Therefore, all state and postsecondary institutions had to plan, develop, and coordinate within the framework of legislative powers and rules and regulations of the Commission of Higher Education.

Two pieces of legislation which influenced postsecondary education were enacted by the 1975 General Assembly. One of these dealt with amendments to the Commission for Higher Education in the State of Indiana while the second restructured of the State Board of Vocational and Technical Education.

Public Law 242, 1975, extended the areas regarding programs upon which the Commission must act. This included not only the associate degree and above, but also speaks to "any additional program of two (2) semesters or their equivalent in duration, leading to a certificate or other indication of accomplishment." (See Appendix C-2)

Public Law 227, 1975, also modified the Commission's responsibilities as it amended P.L. 326 "Sec. 3. Purposes. The general purposes of the commission shall be to plan and coordinate Indiana's state supported system of post-high school education and make recommendations to the Governor, State Budget Agency, or the General Assembly and to perform other functions assigned by the Governor or the General Assembly, except those functions specifically assigned by law to the state board of vocational and technical education."

This brings us to those aspects assigned to the State Board of Vocational and Technical Education. Public Law 227, 1975, restructured, in essence, the State Board of Vocational and Technical Education by broadening its powers and real-locating certain areas of responsibility which had been located in other agencies into this one single body.

Vocational education means any educational program of vocational, occupational, manpower, or technical training and retraining that enhances an individual's career potential, encompassing . . . postsecondary levels through the associate degrees of competency (see P.L. 227, Sec. 1(b), Acts of 1975).

Major aspects of this legislation include the establishment of the board's powers and duties. These include planning and coordination of all programs of public vocational education, review of legislative budget requests and recommendations of said budgets, reviewing and approving or disapproving all vocational programs before they are eligible for state or federal funds, and establishing rules and regulations necessary to carry out the duties as imposed by this legislation.

In summation, the decision-making responsibilities related to planning and coordination of all programs of vocational education in the State of Indiana according to the legislation cited, provides:

- (1) regional institutes to assess, plan, develop and coordinate programs of vocational education within the framework of statewide coordination of the institution's state board of trustees.
- (2) for state board of trustees of the institution to assess, plan, develop and coordinate programs of vocational education within the framework of statewide coordination by the State Board of Vocational and Technical Education.
- (3) for the Commission of Higher Education to maintain the authority as specified in its legislation with the exceptions of those areas specifically designated in Public Law 227 as being the responsibility of the State Board of Vocational and Technical Education, which is the vocational domain of postsecondary education.

- (4) The State Board of Vocational and Technical Education is charged by the General Assembly to plan, coordinate, approve and disapprove programs, etc. This to be in concept with other state agencies.

Iowa State Vocational Education Legislation

The more important laws effecting vocational education are reproduced in Appendix C.-3. The following paragraphs will summarize a few of the key provisions except that for Chapter 280, Section 11 (a new section) is included in the Text.

Chapter 280, Section. 11. (New Section) Career Education. The board of directors of each local public school district and the authorities in charge of each non-public school shall incorporate into the education program the total concept of career education to enable students to become familiar with values of work-oriented society. Curricular teaching-learning experiences from the pre-kindergarten level through grade twelve shall be provided for all students currently enrolled in order to develop an understanding that employment may be meaningful and satisfying. However, career education does not mean a separate vocational-technical program is required. A vocational-technical program includes units or partial units in subjects which have as their purpose to equip students with marketable skills.

Essential elements in career education shall include, but not be limited to:

1. Awareness of self in relation to others and the needs of society.
2. Exploration of employment opportunities and experience in personal decision making.
3. Experiences which will help students to integrate work values and work skills into their lives.

Chapter 258-Vocational Education. This Chapter designates the State Board of Public Instruction as the board for vocational education and the Superintendent of Public Instruction as the executive officer. The Chapter also spells out the duties of the State Board. Under this Chapter the State Advisory Committee on Vocational Education is established and local advisory committees are made mandatory.

Chapter 280A-Area Vocational Schools and Community Colleges. This Chapter . . . "provides for the establishment of not more than seventeen areas which shall include all the area of the state and which may operate either Area Vocational Schools or Community Colleges. . ." This was to be accomplished by July 1, 1971. The Chapter also provides detail on how the merger is to take place, the governing board, budget and

taxation, acquisition of sites and buildings and other provisions necessary for the operation of such districts.

Michigan State Vocational Education Legislation

Michigan personnel have built in many options within state legislation for the delivery of vocational education. They have focused on the extreme diversity of the state to meet all people's needs. The Michigan state school code presently under revision authorizes a K-12 district to provide vocational education. It is not mandatory for districts to offer vocational education. This legislation simply gives them the license to do so. Subsequent to this the major legislation having major impact on vocational education has occurred within the last decade. In 1963 to 1969 forty-two area vocational education studies were being conducted. Before this time few regionalized studies took place because of strong local autonomy. These studies served as devices to help local districts work together to cooperate in educational efforts.

Intermediate School District Act, 1955. Intermediate school legislation for area programs is the complete mechanism for the delivery of vocational education under the auspices of the intermediate school district. It requires a public referendum in the intermediate district which is difficult to achieve in some areas. Of 58 intermediate districts, 22 have successfully passed area wide millage ranging from one-half mill to 4.9 mills. The intermediate district exists until rescinded by the voters. The millage is a charter millage. The intermediate school district has established a sound financial base for vocational education programs.

Community College Act of 1966. The Michigan state board of education recognized the community colleges as prime deliverers of post-secondary vocational education. This legislation makes it possible for community colleges to serve secondary students on an area basis when requested by a district. This Act is included as 15.615 in Appendix C-4.

Interstate Act, 1973. The legislation was passed to allow Michigan students to enter a bordering state to be involved in vocational education and receive state aid. Many Michigan students are enrolled in vocational education in Elkhart, Indiana. Both states have cooperated well.

Funding Legislation, 1971-76. In 1971, Michigan state legislators approved the added cost funding concept and earmarked three million dollars for operational support of secondary vocational education on an added cost basis. Added costs of vocational programs are measured by calculating the difference between the average cost of the vocational program and the average cost of the alternative secondary academic or "general" education program. The added cost factor is the differential.

Equalization. There is a state aid formula for equalizing the capability of local districts to support education. The higher the state equalized value of a district, the less the district receives in state aid.

Actually the formula has created some inequities and is expected to be short lived. Some districts gain \$300,000 to \$400,000 per year in increased state revenues. As a result the same amount of tax millage is being levied against SEV. Because the SEV per pupil is placed higher districts will lose 75% - 80% in state aid. The district occur very little money. Consequently, a support base is shifting from the state to the local level causing problems.

Consortium Act, 1976. New legislation that has passed both the house and the senate awaiting the governor's signature provides a means whereby a consortium of schools may cooperate to form an area vocational education designated agency. Because many of the intermediate school districts have become large complex systems, this legislation was written to allow the development of manageable clusters of schools to cooperate in the delivery of vocational education. The act makes it possible for any combination of districts that meet the following criteria: a minimum of 12,000 membership, a part of an intermediate district area wide vote that failed approval by the intermediate school district to form a consortium, and designated by the state board of education to form a consortium. The districts may dedicate monies to a long term contract with or without a vote from the electorate. Therefore, an intermediate district which is unable to move the whole district toward cooperation in vocational education may form a consortium. This mechanism provides a rapid formalization of cooperation and a finance base for joint activities as the intermediate act allows. This legislation captures some of the best provisions of the intermediate act making it legal for a district to operate the same jointly as it is operated independently. The consortium may have an intermediate district own and operate buildings in its behalf. The consortium could jointly build and own buildings.

Capital Outlay Position Paper, 1975. The state vocational education personnel submitted a position paper to the state board of education expressing a need for state capital outlay monies for the construction of area centers. In the past four million federal dollars per year were used causing a slow process of construction.

For general legislation effecting vocational education delivery, refer to Appendix C-4.

Minnesota State Vocational Education Legislation

Laws relating to vocational education delivery may be found in Appendix C-5. Those of main administrative importance are addressed within the text.

Statute 124.53-Vocational Education. This law designates the state board for vocational education and authorizes it to expend monies necessary to provide programs of instruction.

Statute 121.11-State Board. This legislation designates the powers of the board, designates the board as the issuer of teacher certificates, provides for the establishment of secondary school areas and for non-competition between school districts for the enrollment of students.

Statute 121.21-Area Vocational Technical Schools. The purpose of this law is . . . "to more nearly equalize the educational opportunities in certain phases of vocational-technical education to persons of the state who are of the age and maturity to profitably pursue training for specific occupations." The law provides for the establishment and administration of area vocational-technical schools upon approval by the board.

Statute 123.351-Cooperative Centers for Vocational Education. Under this statute . . . "two or more independent school districts may enter into an agreement to establish a cooperative center to provide for vocational education . . ." It further establishes a center board for the operation of such a cooperative center.

Ohio

Legislation in Ohio has had a tremendous impact on the growth of vocational education. Because offering vocational education programs is mandated by law and substantial state monies are appropriated to vocational education, local school districts have been strongly motivated to engage in cooperative agreements for the delivery of vocational education and the state has been able to establish a strong network of local vocational leadership.

House Bill 155, 1974. With this Bill, Ohio legislators appropriated substantial amounts of state funds to vocational education programs specifying subsidies by secondary, post-secondary, adult, career development, and consumer education programs. Specific amounts of money are designated for the years 1974 through 1977 maintaining or increasing the amounts of funds appropriated each year.

Senate Bill 170. This Bill establishes the state formula for reimbursement of secondary vocational education programs.

Ohio Revised Code, Chapter 3313.90. The Ohio legislature has mandated that each school district or combination of districts establish and maintain a vocational program. Based on the following percentages:

Percent of Graduates
Entering College or
Degree-Granting Higher
Education Programs

50% or less
51% or 60%
61% or 70%
71 % or more

Percentage of Students 16
Years of Age or Older for
Whom Vocational Education
Shall be Offered

40%
30%
20%
10%

Effective January 30, 1975, the Ohio State Board of Education established standards for vocational education. Requiring that each school district provide a minimum of 12 different vocational education job training offerings and 20 classes of vocational education. No more than 4 of the 12 offerings may be provided by cooperative education methods. A minimum of 1,500 students in grades 9-12 was established as the base for vocational course offerings.

Statutes Concerning Joint Vocational School Districts, 1963.

Legislation making it possible to form joint vocational school districts was passed in 1955; however, clarification and expansion of the joint vocational school concept did not occur until 1963.

For laws in general pertaining to vocational education in Ohio, see Appendix C-6.

Wisconsin

In this portion of the report are laws that present the development of Vocational Education in Wisconsin. Selected laws are found in Appendix C-7.

Chapter 616. This important bill incorporated the recommendations of the 1909 state commission created by the state legislature and composed of the state superintendent of public instruction, the director of the University Extension Division of the University of Wisconsin, the librarian of the legislative reference department, and the superintendent of the Milwaukee public schools. The bill received support from organized labor and commercial interests. It has historical significance in that it provided for the first state-wide continuation school system in the United States. Introduced by Charles B. Perry, it was adopted and signed into law by the Governor of Wisconsin, Francis E. McGovern, on July 11, 1911. The law provided for:

1. The organization of an advisory State Board in Industrial Education consisting of nine members. Three of the members were to be employers and three were to be employees. Also included were the State Superintendent of Public Instruction and the deans of the University Extension System and the School of Engineering.

2. The state superintendent was authorized to appoint an assistant for industrial education who would be approved by the State Board of Industrial Education. Most other duties of the board were advisory.
3. Cities over 5000 were required to establish a continuation school; cities of less than 5000 were not.
4. Youth between 14 and 16 who were employed were required to attend the continuation school for five hours a week. Unemployed youth were to attend full time.
5. Each locality of 5000 or more was required to organize a Board of Industrial Education consisting of two employers, two employees, and the city superintendent of schools, ex-officio, to administer the industrial school. Appointment was by the local board of education.
6. Local boards were authorized to raise a tax of 1/2 mill.
7. Local Boards were also authorized to contract with the University Extension Division for specific units of instruction (Greiber, 1975, p. 16; Wisconsin Sessions, 1911; Wisconsin Statutes, 1911).

By the year of 1912, Wisconsin could point to 32 cities that had established local boards and most of these had made tax levies. In 1915 the state legislature further supported the continuation school system by increasing the aid to first class cities to a maximum of \$20,000 annually and to \$10,000 for those cities of less than 5,000 population that had established programs. The legislature also appropriated funds to the State Board to employ staff and empowered the Board to supervise the program. The Board also urged local boards to appoint advisory committees in all areas of instruction provided in the school programs. Thus, the ground work was laid for vocational education in Wisconsin even before Congress enacted the Smith-Hughes Act, in 1917, that provided for federal aid for instruction in trade and industry, home economics, agriculture and teacher training.

Chapter 494. Wisconsin's legislature in accord with the Smith-Hughes Act passed Chapter 494 in 1917. It created a "Board of Industrial Education" changed later in the same session to the "State Board of Vocational Education" independent from the State Superintendent of Public Instruction (Wisconsin Sessions, 1917). University representatives on the State Board were replaced by a member of the Industrial Commission. Three farmer members were added and the

Superintendent of Public Instruction remained on the Board as an ex-officio member. The State Board was given the power to approve teacher qualifications and courses of study. In this historic year, school attendance provisions were extended to include employed youth 14 to 17 years of age for eight months, and local taxes were increased to 3/4 mill to support vocational education (Wisconsin Statutes, 1917). Frank Glynn was named the first director of the state vocational education program which received support from Dr. McCarthy, and his friend, George Hambrecht, a representative of the Industrial Commission on the Board. Mr. Hambrecht was also a member of the state legislature.

In 1918, the legislature appropriated \$25,000 in state aid for a program of part-time instruction in agriculture, increased the local mill tax to 1½ mills and authorized the sale of bonds for the construction of facilities in cities of the first class.

A year later, University of Wisconsin President, Edward A. Birge, urged cooperation between the departments of the university and the vocational education system (Greiber, 1975, pp.18-19).

In 1921, the legislature extended school attendance requirements to half-time for employed youth 14 to 16 years of age and to eight hours per week for youth from the ages of 16 to 18. State aid to vocational education was increased to \$255,000 and experienced no increases until 1943. Between 1921 and 1929 a number of important events occurred that contributed to the development of vocational education as it is now known: (1) At Stout Institute, a training program was developed to provide vocational teachers with both pre-service and in-service courses; the Milwaukee Vocational School was designated as the institution for all in-service training; and, finally through board action, it was decided that inservice teacher training would be a function of state staff members and would occur in every vocational school. (2) The Board approved a classification plan for teachers and outlined the minimum requirements for teaching and methods so that trade-competent persons could upgrade their abilities by participating in in-service and summer-school training. (3) Instruction in agricultural subjects became concentrated in high school programs. (4) Adult education programs were being further developed (Greiber, 1975, pp.21-23).

In 1933, President Franklin Delano Roosevelt changed the administration of vocational education to the Department of the Interior. At a later date, its administration was changed to the U.S. Office of Education. This year also marked the time when the administration of adult education programs were given over to the State Board in Wisconsin under the Federal Emergency Relief Act which was later known, until its termination in 1943, as the Works Progress Administration (WPA). Adult education was maintained and further developed within the state because thousands of unemployed teachers were given jobs in its programs (Greiber, 1975 p. 29).

Chapter 224, Wisconsin Session Laws, 1957, Section 2, was made law in the state of Wisconsin in 1957. The purpose of this law was to establish new vocational and adult education programs in several areas of the state along with the establishment of area schools. Provisions of the law included were a minimum area population of 20,000 and

equalized evaluation of sixty million dollars, an elective area board, and a 2-mill tax levy for the support of the program (Wisconsin Statutes, 1957a).

Chapter 453, Wisconsin Session Laws, 1957, Section 3, passed in 1957, stipulated that funds be made available to the State Board of Vocational and Adult Education for fireman training. This system of instruction, adopted in 1957, is still in operation today. Qualified instructors travel to a volunteer department in the area to instruct firemen from the department and the area (Wisconsin Statutes, 1957b).

Chapter 696, Wisconsin Session Laws, Volume 2, 1959-60, Section 1, was finally passed at a special session of the legislature in July, 1960 after an eighteen month delay. It revised Section 20.850(11) of the Statutes which, effective July 1, 1961, increased state aid from \$420,000 to \$1,785,000. Governor Gaylord Nelson proposed the increase to be effective in 1959, but Senate Bill 30 which contained the increase was so delayed that the Legislature set 1961 for it to become effective. From this time on, arts and crafts courses were eliminated from state aid participation and reimbursement on salaries was changed to reimbursement on pupil hours of instruction (Greiber, 1975, pp. 46-47).

Chapter 51. The legislature made this Chapter part of the laws of 1961. It was this law that authorized the State Board to award associate degrees for two-year technical courses. From this point on all names of degree recipients were placed on file in the State Office. The active support of this bill and the assistance in its passage is credited to the Coordinating Committee for Higher Education (CCHE). This body was composed of five University Regents, five State University Regents, the State Superintendent of Public Instruction and four members at large (Greiber, 1975, pp.46-47; Wisconsin Statutes, 1961).

Chapter 415, Wisconsin Session Laws, 1963-64, Volume 2, Section 1, enlarged and reorganized the Coordinating Committee for Higher Education in order to give the State Board representation equal to that of the Board of Regents of the University of Wisconsin and of the State Colleges (Wisconsin Statutes, 1963a).

At least 2 state laws have a negative effect on vocational education at the secondary level in the opinion of personnel from the D.P.I. in Madison. These laws are the following:

Chapter 89, 1973. Briefly, this law is supported largely by state monies and was enacted to provide educational services for all handicapped citizens in Wisconsin who range from 3 to 21 years of age. Budget restrictions established by the legislature allowed for a 9.5% cost per student increase for FY 1976 and a 7.5% cost per student increase for FY 1977. Due to the high cost of implementing Chapter 89, school districts find little money for such programs as the expansion of vocational education.

Chapter 90, 1973. This law states that to be eligible for state aids under s. 121.08, a school district shall be in compliance with all of the school district standards set for in this section. By omission of a reference to vocational education, this law has a negative effect on present and future programs in vocational education at the secondary level of instruction.

CHAPTER V

CAREER EDUCATION

Career education is a concept that as yet does not have a universal definition. Educators, however, generally agree that vocational education is one subset of career education. The purpose of this chapter is to describe the career education activities found in the states being considered in this study.

Career Education in Illinois

The Department of Adult, Vocational and Technical Education has defined career education in the following manner:

Career education is the term denoting the total effort by educational agencies and communities in presenting organized career-oriented activities and experiences to all persons from nursery school through adulthood, and orients the entire educational plan into one, unified, career-based system.

Career education in Illinois is designed to acquaint students with career options and opportunities, to aid students in making career choices, to assist students in developing realistic self-concepts and to provide the vehicle by which students can develop the skills and abilities they will need to achieve their career goals.

To date, career education has not been a main thrust in the total educational delivery in Illinois. Rather, it has been the responsibility of one staff member within the Illinois Office of Education.

The main effort in career education has been exerted at the K-8 level provided by the Occupational Information Program. This program was implemented by guidance and occupational information consultants at the Department of Adult, Vocational and Technical Education who devote about 75% of their time to this effort. In the state's 800 local school districts, approximately a million children are being served by this program. Started in FY 1970, the program obtained its financing through general revenue funds. The goals of this program are to relate to developing an awareness of numerous occupations; to developing an appreciation of all workers and their contribution to society and along with this an awareness of personal strength, limitations, values, and goals.

At the elementary level the student develops a feeling for the world of work and various occupations through his or her experiences. At the upper elementary level attention is given to his or her abilities. The seventh and eighth grades provide an opportunity for in-depth exploration of occupational areas and the degree to which the student can relate his

or her abilities, interests, values and goals to occupational areas and workers. This enhances the ability of the student to develop informed career preferences and to make realistic career education plans.

Figure 24 conceptualizes the career education model for Illinois. This model makes further orientation a reality at the secondary level in grades 9 and 10. It provides these students with occupational preparation in grades 11 and 12 through what is referred to as a "Capstone Program". Students who complete this sequence are prepared for entry into the job market or are better prepared for articulation with post-secondary vocational education.

Vocational educators at the state level believe that career education adds a new flavor to education in general. Rather than taking courses simply to prepare for other courses, the career education model provides a sequence of activities related to the world of work and to regular course requirements. This approach becomes more difficult at the secondary level. However, the local school systems in Rockford and East St. Louis, Illinois have attempted to integrate career education into the mathematics, history and English curriculum.

For students enrolled in vocational education studies at the secondary level, career education assists to broaden the view of the vocational education course. It goes beyond. The student can see a relationship to the course he or she is enrolled in and the way in which the course work relates to the general field of which the course is a small part.

In FY 1975 the Department of Adult, Vocational and Technical Education completed a number of projects related to career education:

The "Career Awareness Demonstration Project" was attended by 100 teachers and administrators, and focused on demonstrating the Career Development for Children project. It also included an in-depth field test of the materials used in the project.

"Thinking for Action in Career Education" developed four learning packages to help to prepare secondary students to survive in the world of work and provided an in-depth review for project staff.

"Measuring Career Readiness in Elementary and Secondary Education" researched the need for a career readiness instrument to determine the point at which students are able to assimilate various kinds of career subject matter. After interviewing over 400 hundred students, a readiness instrument was developed which is being pilot tested through Illinois.

"Career Education Resource Laboratory" (CERL) is located at Eastern Illinois University and was implemented to assist rural school districts in incorporating career education into existing instructional programs at the K-12 level at a minimal cost. The laboratory served a 10 county area by providing a monthly news-letter, workshops for schools, community resource guides, consultant assistance and materials for use by students and teachers.

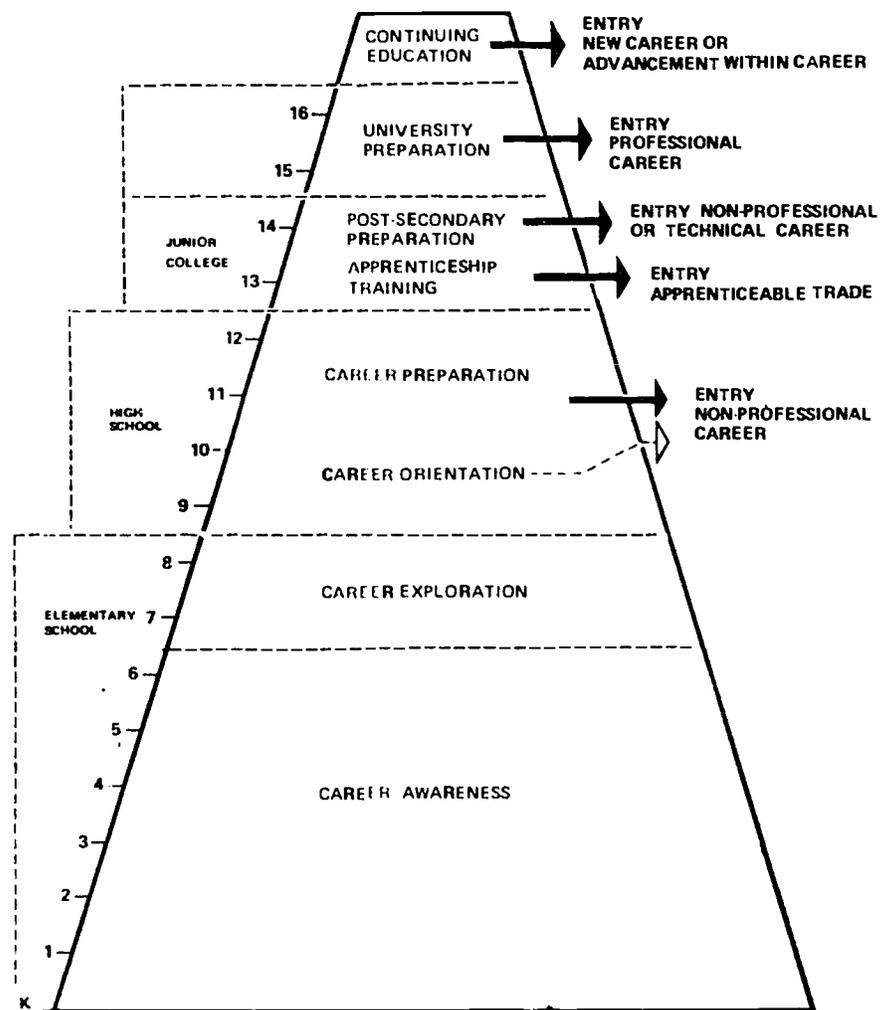
"Tri-County Career Education Project" was designed to provide a link between education, industry, and labor in Peoria, Woodford and Tazewell counties as part of the Tri-County Industrial Education-Labor Council.

"Career Education for the Handicapped" was designed to develop a model secondary career education program for handicapped persons.

"A Rose by Any Other Name" was a film developed with Federal (Part C) and local monies to help teachers understand the concept of career edu-

Figure 24:

Career Education ILLINOIS MODEL



cation at the K-8 level, to help them in their classrooms, and to motivate them to employ the career concept in their classroom situations.

Note: For in-depth descriptions of the above cited projects, see Vocational Education in Illinois, Annual Descriptive Report, pp. 79, 80, 81, 86, and 135.

Career Education in Indiana

About five years ago vocational educators and guidance counselors began to plan for career education. A number of conferences were held to plan a model of delivery. Workshops were held at various locations at which educators became familiar with the concepts of awareness and orientation expectations to be included in curriculum. Programs were developed in career education within several school districts through the use of federal monies from the Office of Career Education and state monies from the Division of Vocational Education. These programs are now coordinated by the offices of the Divisions of Curriculum, Pupil Personnel Services and Vocational Education.

The Department of Public Instruction for Indiana has written a position statement on career education which follows:

Career education is a continuous and broadening perspective of education at all levels, focusing on the total development of each individual. This will encompass the development of self-awareness, an appreciation for the world of work, attainment of planning and decision making skills, and the development of individual potential leading to a personally fulfilling life with a greater respect for the dignity of the work. Career education does not encourage a career choice before the individual has had the opportunity to explore and experience a wide variety of careers available to him.

Career education does not seek to replace academic or vocational education or separate them, but provides a means of improving and making more relevant the present educational system. It seeks to unite the diverse educational efforts into a more unified program, actively engaging into a cooperative effort of all members of business, industry, and the educational community.

Career education will not absorb or bury all past, present, or future educational problems. It does, however, have the potential for providing accountability in education while enabling individuals to better appreciate their personal responsibilities in becoming productive members of society. This new set will pervade all of education at all levels to focus on the development of the whole individual, and will begin to make the educational process accountable for equipping each individual to shape his future life.

As yet their position has not received legislative backing, although attempts to receive state support are in the offing.

Inservice education and resource materials are made available to educators, including vocational educators through three resource centers.

Career education receives emphasis at all levels K-12. Their Career Education Infusion Models include concepts of: Self-Awareness, Educational Awareness, Economic Awareness, Employability Skills, Planning Awareness, Occupational Awareness, and Social Awareness. These models were developed to be used as guides in local school districts. Educators are encouraged to develop their own curriculum to include career education concepts within local classrooms. Indiana's concept of Career Education is presented as Figure 25.

Career Education in Iowa

Unlike other states, the arm of the Department of Public Instruction dealing directly with the administration of vocational education is called the Career Education Division. As the name implies, Iowa approaches vocational education as part of the whole of the career education concept.

Career education, in Iowa, provides students enrolled at the K-12 level with activities and experiences that prepare them for work and personal fulfillment in their career choice. It is believed that, through what seems to be a better educational approach, students may attain more satisfying and worthwhile experiences as they become participants in the world of work. Such an education requires the day-to-day integration of career development in learning experiences. Presented properly, it establishes a stronger relationship between course knowledge, career related experiences and skills required on a job. Such a curriculum, it is thought, establishes that "relevancy" in school curriculum which was found lacking by many students less than a decade ago. In a good career education program, interest, attitudes, values, and abilities suited for proper decision making relating to a career choice are promoted. If effective, the goal of successful employment is achieved along with other benefits needed for successful living. Some of these benefits are considered to be competencies in manipulation, computation, interpersonal relationships, and communication.

A program of this kind requires community involvement that includes participation from parents, business, and industry, as well as the arts and humanities. It is hoped that a student who finishes his or her formal education can be a better employee and citizen, and become a contributor to the society in which he or she lives.

Figure 26, provided by the Department of Public Instruction, presents a visual conceptualization of Iowa's Career Development Profile. The horizontal dimension identifies the sequential stages of career development while the vertical dimension identifies the general career development categories that are promoted during each stage.

Teachers of career education are certified and approved by the State Board of Public Instruction as specified in their Certification and Approval Handbook, 1968. These certification standards are set forth in

INVESTIGATION IS ESSENTIAL TO THE DEVELOPMENTAL PROCESS

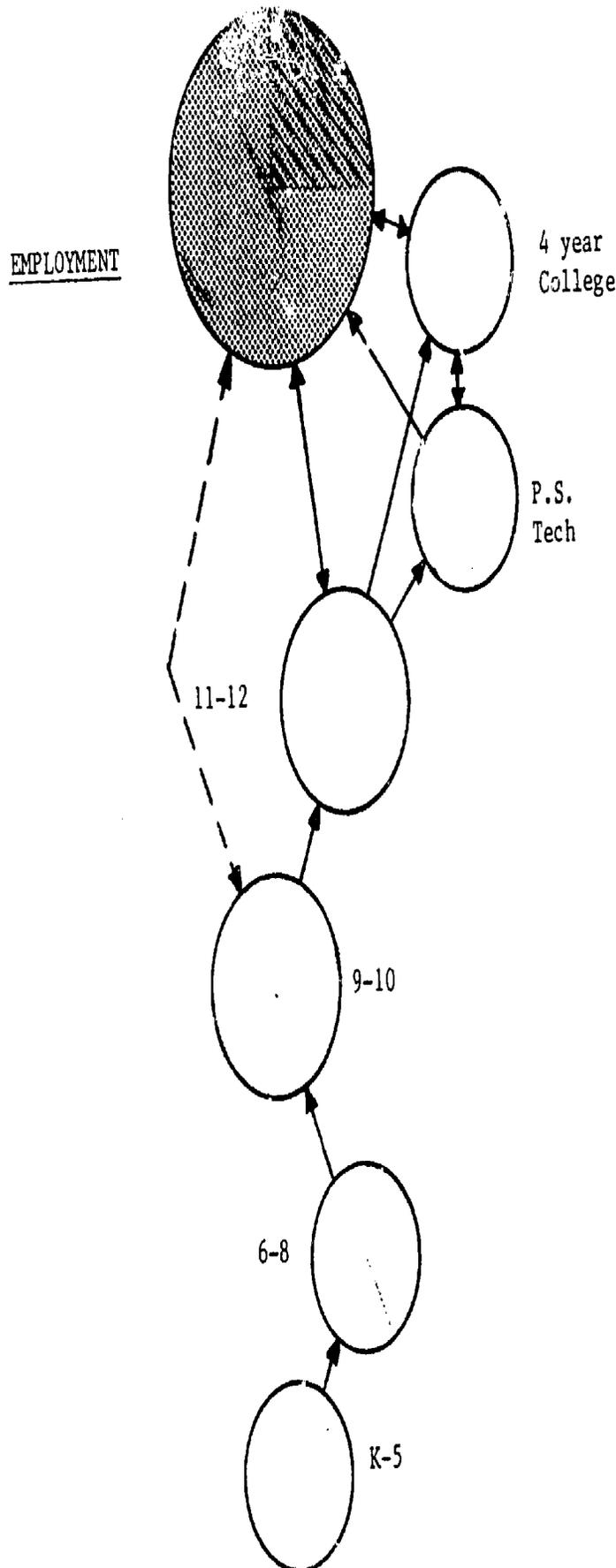
Career cluster investigation better prepares students to identify interests, assess potential, and make informed decisions regarding their immediate goals.

(11-12) EXPERIENCE

CAREER PREPARATION IS ACHIEVED THROUGH SUCCESSFUL EDUCATIONAL AND TRAINING EXPERIENCE

Sequential career education prepares students for entering either post-secondary education or useful and rewarding employment.

Figure 25: CAREER EDUCATION IS TOTAL EDUCATION



(K-5) INTRODUCE

AWARENESS OF SELF AND RESPECT FOR THE WORLD OF WORK

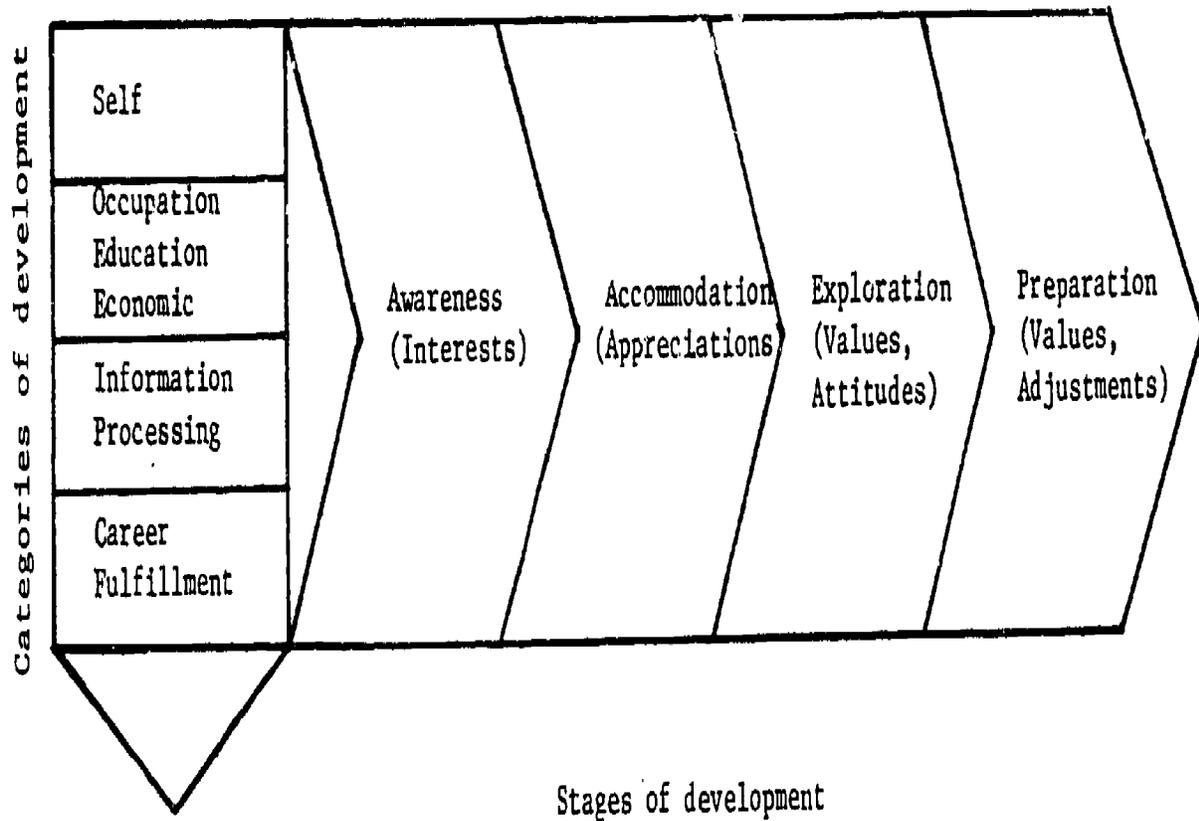
Self-awareness and a realistic awareness of the world of work will assist students in gaining respect for work and appreciate its importance to our society

(6-8) EXPLORE

EXPLORATORY EXPERIENCES ARE IMPORTANT IN THE PROCESS OF CAREER DEVELOPMENT

Many exploratory experiences are essential for a student to have a broader knowledge base of self and in order to make more realistic educational and occupational choices.

Figure 26: Iowa Framework of Sequential Career Development Profile



compliance with the requirements of the Vocational Education Amendments of 1968. (See also Appendix C-3, Sec. 260.6 and Sec. 273 sec. 24 regarding certification requirements).

Educators in Iowa see education as a life-long process beginning with prekindergarten experiences. To assist in this process the Division of Career Education has funded through their office a number of special projects with federal and/or state monies. Two of the most outstanding examples of their efforts to provide quality career education are the Career Information System of Iowa (CISI) and Career Education Needs Information System (CENIS).

CISI provides current, relevant, and primarily Iowa-based occupational information and an occupational exploration design based on self-perceptions to facilitate effective career decision-making by Iowa's school youth...it serves as an educational tool for teachers, counselors and administrators. CISI is available statewide to users through three modes: manual delivery, microfiche, and computer utilizing a student-operated teletype or cathode ray tube computer terminal (Career Information Systems of Iowa).

CENIS is a data collection, analysis and reporting system. The system is designed to provide, for most of the technical type occupations, current and projected personnel needs of employers in Iowa, incoming student occupational preferences, expected supply of graduates, and outcomes of area school graduates during the latest three year period. These data, produced from CENIS, give an overview of the current and projected technical education needs in Iowa based on the expected needs of employers and the experiences of graduates from past years (Iowa Department of Public Instruction, Career Education Division).

Many more career education projects are at work in Iowa including teacher inservice programs and workshops given at the local level. Iowa's focus is on and for career education.

Career Education in Michigan

An office of career education is established in Michigan separate from other educational operations in the department. Responsibilities of the career education staff are to coordinate regional career education activities and serve as consultants to state staff employed in thirteen of Michigan's departmental services, training them to assist local district personnel to meet career education needs.

In the beginning of Michigan's development in career education, thirty career education projects were funded by three or four agencies. Each project was responsible for a portion of the career education curriculum. The state incorporated from the projects the concepts that seemed to work and used them as a basis for the career education model and publications. The teachers, counselors and administrators of the districts were utilized

in advisory and curriculum development roles.

In May, 1974, legislation authorized the creation of a Career Education Advisory Commission in Michigan. Michigan was the first state to develop a state level organization for career education that included both lay persons and educators. The commission was created in the department of education and consists of twenty members of which not more than half represent education. The commission formulated a concept paper to guide the Michigan career education delivery system. The paper was adopted by the Michigan State Board of Education in January, 1975.

As in all states, Michigan started career education closely aligned with vocational education. The initial projects were funded primarily through federal vocational education funds.

In 1975, \$120,000 was allotted to maintain an office of career education. However, monies were not available to local school districts for implementation of career education.

In April, 1975, the state board approved the Commission's recommendation that \$5,119,210 be allotted in fiscal year 1975-76 for career education.

For fiscal year 1977, state vocational personnel are seeking a grant for 1.2 million dollars to disseminate and diffuse the Michigan Career Education Model.

There is no statewide organization of career education coordinators although many of Michigan's 530 school districts employ persons in this capacity. A state survey of Michigan's school districts, conducted in March, 1975 with a 72% return, revealed that 93% of the school districts and 100% of the districts with student enrollments over 10,000 have designated a local staff person or administrator to coordinate career education. This is a significant coordination effort, for in Michigan, 80% of the students are enrolled in approximately 20% of the school districts.

A career education planning district coordinator is located in each of 50 CEPD's. He or she meets with state career education personnel in a monthly workshop and conducts meetings with local coordinators. District coordinators are appointed by K-12 superintendents, and to be reimbursed with vocational education monies, the coordinators must be vocationally certified.

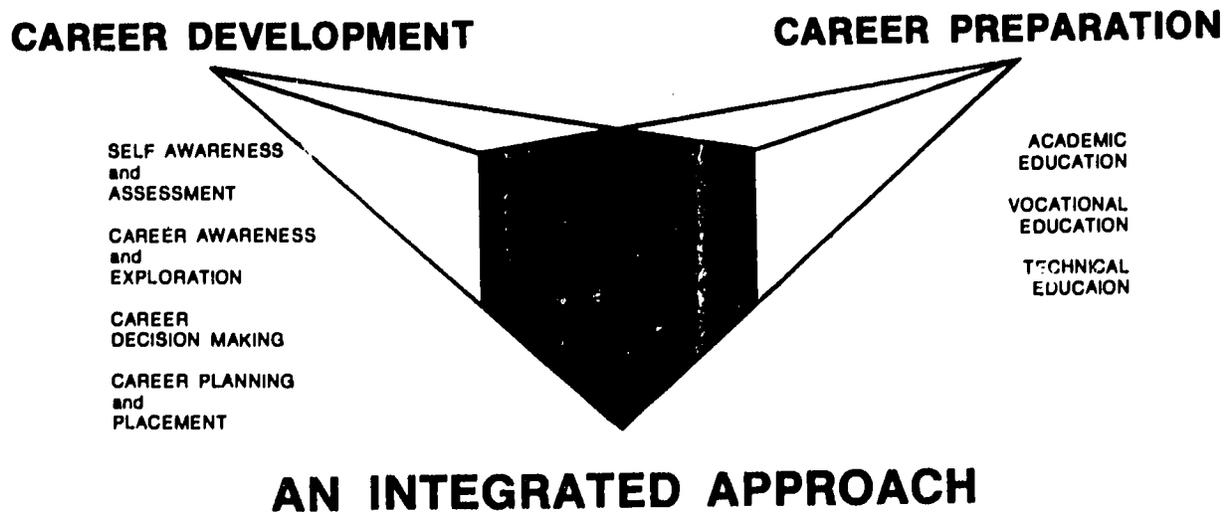
Career Education is the delivering of skills to all students which will provide them with the ability to explore, understand, and perform in their life roles while learning, working, and living.

In this statement, the Michigan Career Education Advisory Commission is expanding the definition of "career" to include the individual's life roles as citizen, family member, and participant in aesthetic and recreational experiences, as well as worker. Using this broader definition of the word career gives career education sufficient scope so that it embraces all elements of the Common Goals of Michigan Education. The goals stress the individual's acquisition of basic skills, preparation for social participation and change, ability to think creatively and critically, development of a strong self-concept, and the gaining of occupational skills.

The concept of career education in Michigan involves two components: career development and career preparation. State personnel believe that of the two components only the career preparation component is taught in a systemic way.

Teachers asked for a tentative grade-level designation to order career education concepts. Student outcomes representing the four instructional elements of career development were identified in behavioral terms. This formed a sequential basis for a career development hierarchy of infusion and the product was called Infused Career Education Michigan Model.

Figure 27: **CAREER EDUCATION**



Career Education in Minnesota

Since mid-1975, career education has been in the Pupil Personnel Section, Division of Planning and Development, Department of Education. Before this time, career education activities were directed by the vocational division.

From 1971 through 1975 career education in Minnesota was funded by a number of sources. In 1975 career education projects were funded by the commissioner's discretionary funds, Part C (VEA '68) funds, Title III, and the Council on Quality Education. The Minnesota Research and Development

Review Committee for Vocational Education recommends that monies from Part C and D funds be diminished as the educational base of career education broadens.

During fiscal years 1972-74 a project was funded yearly with \$150,000 of Part C to test a variety of career education models in eight local school districts. The sites represented a variety of geographic locations, 600 teachers, and 200,000 students representing junior high, K-6, K-9, and K-12 grade level clusters. Local district personnel designed the projects around their own resources to investigate inservice needs of teachers and methods for infusing career education in the school curriculum. Curriculum materials were developed and written during the second year and dissemination through workshops was carried out during the second year.

In November, 1973, the Minnesota commissioner of education created a career education task force. The task force members attempted to set up a coordinator's position, definitions and a state plan for career education. At the present time the emphasis is to develop a career education state plan including regional career education efforts.

Career education is an integral part of education. It provides purposefully planned and meaningfully taught experiences, for all persons, which contribute to self-development as it relates to various career patterns. Career education takes place at the pre-school and elementary, junior high, senior high, post-secondary, and adult education. Emphasis is placed on career awareness, orientation and exploration of the world of work, decision making relative to additional education, preparation for career proficiency and/or specialized occupations, and understanding the interrelationships between a career and one's life style.

Career Education in Ohio

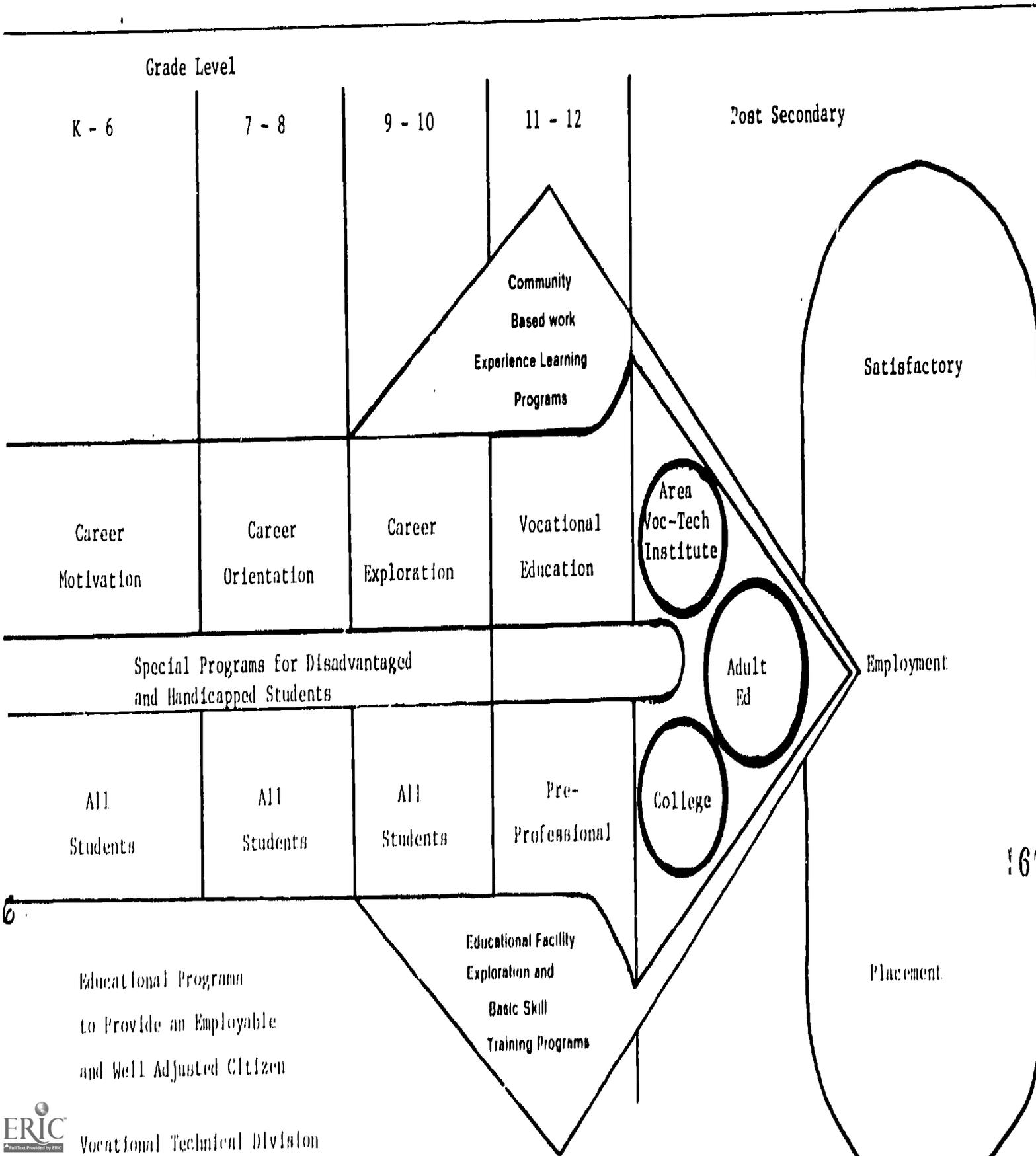
In Ohio the coordination of career education is by the staff of the Career Development Service in the Division of Vocational Education, including one assistant director and two full-time supervisors.

All of Ohio's Part D exemplary funds are given to career education. Of the four million dollars supporting career education projects in Ohio, 1.8 million are state monies and 2.0 million are federal monies. Distribution of funds is accomplished through Ohio's attendance districts on a per student basis. State personnel give \$20.00 per elementary student, \$25.00 per junior high school student, and \$30.00 per senior high school student.

Thirty-two state funded programs are operating in Ohio. The 32 state approved programs involve 174,046 students. Each project has a full-time director and personnel for coordination. To service the delivery of career education, the local programs are divided into four regions. Each of the regions has a council composed of program directors within the region. Two directors in each of the four regions are members of the Director's Career Education Task Force. Directors serve a two-year term and meet approximately five times during a year in the Task Force. Each program has an advisory council composed of business representatives and parents.

Figure 28: Minnesota State Department of Education

CAREER DEVELOPMENT CONTINUUM



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State career education curriculum guides were developed relating to seven career development concepts: self, individual and environment education and training, world of work, economics, employability and work adjustment, and decision making. Presently, four school districts are involved in field testing a career orientation curriculum series for 7th and 8th graders developed by the Educational Research Council of America, and the State Department of Education.

Since the field-tested curriculum is based on the same seven concepts as the statewide 1972 curriculum, the new curriculum may be easily assimilated into the present curriculum structure.

In the university setting, the project director and his staff provide assistance to teacher educators in building career education into the teacher training program. Ten thousand dollars of Part C monies are used to finance 2 to 3 meetings per year with teacher educators.

Career Education is a concept designed to provide students with the necessary information and developmental experiences to prepare them for living and working in society. It combines the efforts of home, school, and community and reaches from pre-school through adulthood.

Career Education in Wisconsin

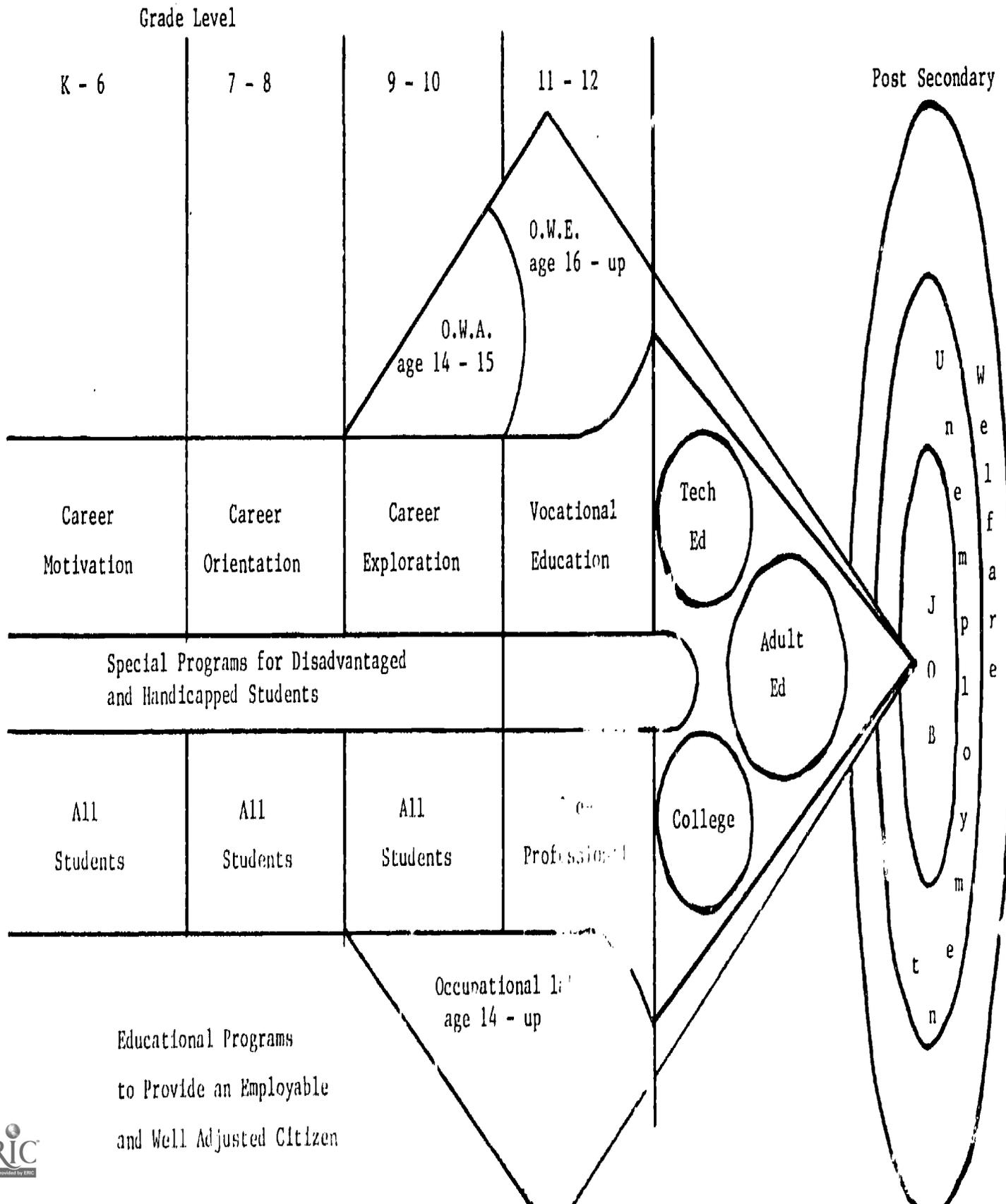
Career education and what it entails has been defined by a joint task force composed of representatives from the Department of Public Instruction (DPI), the State Board of Vocational, Technical and Adult Education (VIAE), the University of Wisconsin System and the Wisconsin Association of Independent Colleges and Universities. Their definition and conceptualization is as follows:

CAREER EDUCATION is a guidance and instructional strategy aimed at improving educational outcomes by relating teaching, counseling, and learning experiences to life and the world of work. It relies on the integration of career development concepts with the curriculum of all subjects, it blends academic and vocational experiences, and it requires the cooperation and collaboration of the home and the community as major components of the learning environment. In scope, career education encompasses education experiences beginning in early childhood and continuing throughout one's productive life. Career education involves individuals in activities designed to develop awareness of self and the world of work as well as an understanding of our economic system. It includes orientation to occupations, exploration of selected clusters, career planning and decision-making, career preparation and placement. In essence, career education prepares individuals to live effective lives and to engage in meaningful, satisfying, paid, and/or unpaid work in harmony with themselves, with others, and with their environment (Proposal for the Development of a Wisconsin State Plan for Career Education, 1976).

The Education Amendments of 1974 (P.L. 93-380) included a Special Projects Act. It did not provide for funds to be directly allotted to

Figure 29: Ohio State Department of Education - Division of Vocational Education

OHIO'S CAREER DEVELOPMENT CONTINUUM



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states. Rather, agencies in the states had to submit proposals for career education projects to the U.S.O.E. For FY 1975, Wisconsin had four demonstration projects funded. Two were funded out of incremental improvement funds which lead to a K-12, seven school district consortium in career education. Included in this consortium were schools from a large school district, Madison; schools from two medium sized school districts, Eau Claire and Sheboygen; and four small school districts, Kimberly, Oregon, Shawano, and Watertown. Another incremental improvement project was funded for the Oshkosh Public School. Two projects were funded under a special populations category. One of these projects addressed itself to girls, representing the Girl Scouts of Milwaukee, Incorporated, in which the girls met women who had done well in non-traditional areas of employment. Another project was awarded to the University of Wisconsin-Madison's Guidance and Research Laboratory for career education directed toward gifted and talented youth at the K-12 level.

A coordinator in career education employed at the DPI acts as a liaison person between the U.S.O.E. Career Education Office and local districts and promotes and encourages career education development at the local school district level. Another part of this person's responsibility has been to develop a slide-tape presentation about career education for use as a tool in inservice programs for teachers at the K-12 levels. This program presents the 16 concepts involved in a career development sequence model as shown in Figure 30.

Local districts are encouraged to form teams composed of local vocational education coordinators, a person responsible for curriculum development, and a guidance counselor. Figure 31 provides a visual presentation of the Career Development Model which can and in some cases is becoming a part of an integrated curriculum. Fifty-three percent of the school districts in Wisconsin have been involved in the development of career education curricula and 25% of these are considered to have strong programs.

Future objectives of such programs are to continue integration of career education concepts into the regular curriculum while supplying broader exploratory and actual "hands-on" experiences to students by all teachers resulting in better and broader preparation of students for their entry into the community.

Certification standards for career education specialists have been discouraged since it is believed that all teachers should share in the responsibility for career preparation in the curriculum they teach. University instructors are beginning to offer pre-service training to teachers and counselors in the area of career education.

Presently the post-secondary is involved in career education, however, no full-time staff person is assigned to develop and implement a career education program at the State Board Office. Rather, the VTAE sees its role as being one of providing teachers who will emphasize the necessity for student retraining in the future and making guidance and counseling services available for students in attendance at district vocational schools.

The VTAE has purchased instructional materials that stress certain aspects of career education, and made them available to the districts. Thus far, 9 of the 16 VTAE districts offer career education. These have been outgrowths of 7 federally funded projects that are financed through monies

Figure 31: Wisconsin CAREER DEVELOPMENT SCOPE AND SEQUENCE MODE.

		ELEMENTARY	MIDDLE -- JR. HIGH SCHOOL		HIGH SCHOOL
Concepts		Middle Childhood K-3	Late Childhood 4-6	Early Adolescence 7-9	Adolescence 10-12
1					
2					
3					
4					
5					
6					
7					
	Code	8			
		9			
Introduce		10			
		11			
Develop		12			
		13			
		14			
			15		
Emphasize			16		

CAREER DEVELOPMENT CONCEPTS

1. An understanding and acceptance of self is important throughout life.
2. Persons need to be recognized as having dignity and worth.
3. Occupations exist for a purpose.
4. There is a wide variety of occupations which may be classified in several ways.
5. Work means different things to different people.
6. Education and work are interrelated.
7. Individuals differ in their interests, abilities, attitudes and values.
8. Occupational supply and demand has an impact on career planning.
9. Job specialization creates interdependency.
10. Environment and individual potential interact to influence career development.
11. Occupations and life styles are interrelated.
12. Individuals can learn to perform adequately in a variety of occupations.
13. Career development requires a continuous and sequential series of choices.
14. Various groups and institutions influence the nature and structure of work.
15. Individuals are responsible for their career planning.
16. Job characteristics and individuals must be flexible in a changing society.

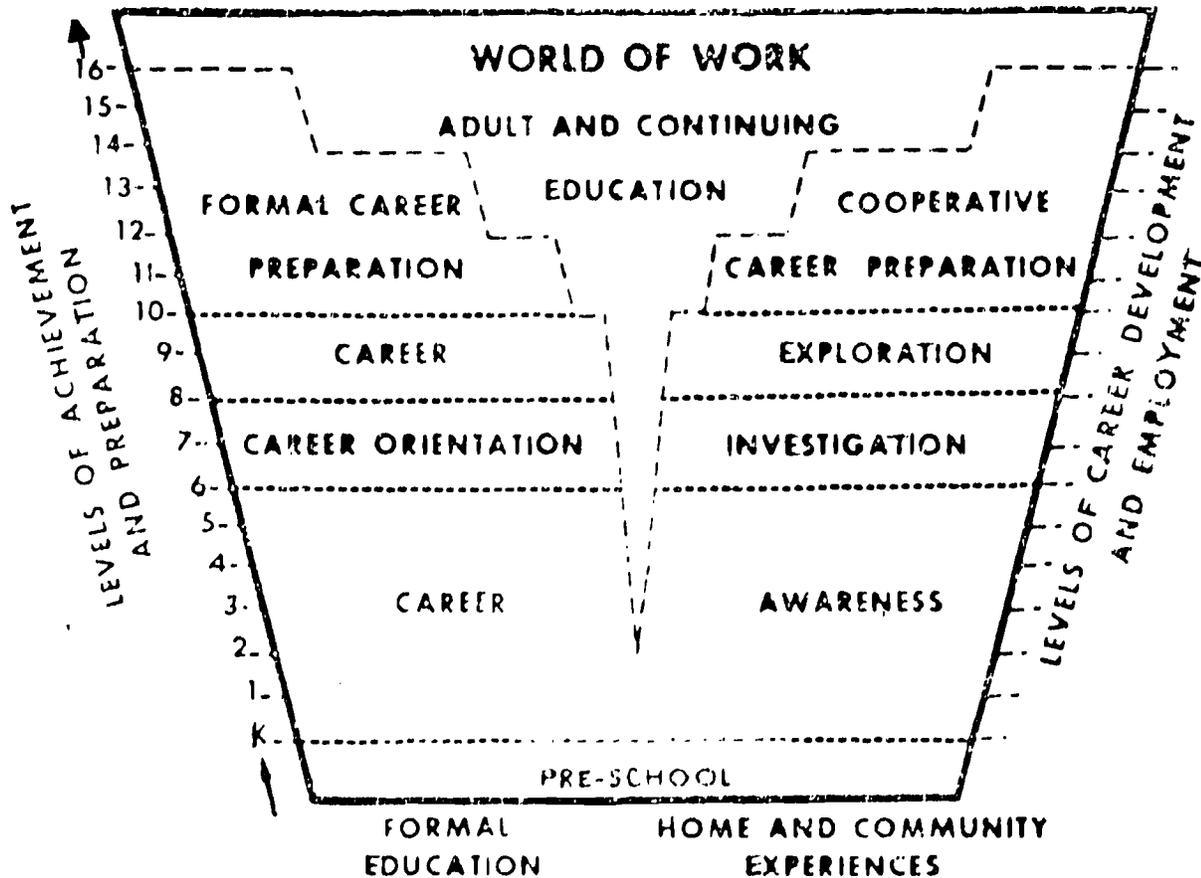
Source: K-12 Guide for Integrating Career Development into Local Curriculum, 1971, p. 13.

from Parts C and D. No state monies are used for development of career education programs in either the K-12 system or at the post-high school level. Federally funded projects employ a full-time coordinator. Because of the success of these programs, districts have been encouraged to continue these projects without specific federal funding. Projects at the post-secondary level have stressed development of personality relating to personal interrelationships, to the structuring of individual personal goals and to awareness and knowledge involving personal finances as they relate to the economics of living. The Career Education Model used in Wisconsin is the same as that used in the State of Texas (see Figure 32). In this model, career education is viewed as something one experiences and is not taught as a course or a program.

Two K through adult career education projects have been in operation for 3 years and expired in June of 1976. One has taken place at the Western Wisconsin Technical Institute at La Crosse and the other at the North Central Technical Institute in Wasaw.

Administrative personnel at the state level hope that state dollars will help to support career education programs so that implementation can occur from the kindergarten through adult levels of instruction throughout the state.

Figure 32: Wisconsin - A Career Education Model



CHAPTER VI

TEACHERS, TEACHER EDUCATION AND CERTIFICATION

This chapter describes the instructional staff in each of the States and provides information about how they are trained and certified.

Vocational Education Teachers and Professional Development

Table 13 provides information on numbers of teachers by state and level. Since the states vary in population, it would be expected that the numbers of teachers would vary greatly. However, several facts become apparent from reviewing the table. For instance, there is a difference in the relative importance among the states on the emphasis placed on post-high school and high school vocational education when one compares the proportion of teachers in each area. Wisconsin, for example, is the only state that has a greater number of post-secondary teachers than secondary teachers. The most dramatic comparison is revealed in Ohio which has approximately 14 times as many secondary teachers as post-secondary teachers.

Another interesting fact is apparent, namely, that in all states a large number of part-time teachers are used in the adult program. In fact, in Iowa and Minnesota the part-time teachers amount to approximately half of the total number teaching at all levels. Looking at the total number of adult teachers in each state compared to the total number of teachers in the respective states suggests that adult education is indeed an area of service in which each of the states is providing substantial service.

Trades and industry has the largest number of teachers in each of the states as seen in Table 14. A relatively small number of teachers, compared to the total, teach in the field of agriculture. This is a fact that historically would not have been true.

It is interesting to note that in 3 states, Illinois, Iowa and Michigan, health teachers outnumber teachers of consumer and homemaking education.

A totally new responsibility of vocational education first identified in the Vocational Education Act of 1963, and made mandatory in the 1968 Amendments, was that of serving disadvantaged and handicapped students. Information on teachers of these two categories is shown in Table 15. Reporting in this category has continued to be a challenge, since a goal is usually the integration or mainstreaming of disadvantaged and handicapped into "regular programs." Also, if students are in a vocational education program, much of their training will be spent in training for a particular occupational area. The reporting of teachers, therefore, often reflects only specifically funded projects for these groups.

Table 13. Vocational Education Teachers by Level

States	Illinois	Indiana	Iowa	Michigan	Minnesota	Ohio	Wisconsin
Total (Unduplicated)	15,357	3,383	6,570	14,331	7,254	21,435	8,281
Secondary (FTE)	10,006	2,040	1,812	3,790	3,014	8,883	1,565
Post-Secondary (FTE)	2,661	556	975	2,492	1,971	605	1,972
Adult	2,525	1,163	3,783	2,780	4,075	5,211	3,928
Full-Time	419	-	211	148	252	35	424
Part-Time	2,106	1,163	3,572	2,632	3,823	5,176	3,504

Note. State's Federal 346 - 2 reports for FY '75.

Table 14: Vocational Education Teachers In Secondary, Post-Secondary and Adult Vocational Education by Program

States	Illinois	Indiana	Iowa	Michigan	Minnesota	Ohio	Wisconsin
Total (Unduplicated)	15,357	3,383	5,671	14,331	6,615	12,851	8,805
Agriculture	865	280	514	312	659	734	681
Distribution	1,192	140	235	1,020	485	1,560	490
Health	1,191	328	1,191	1,517	513	933	635
Consumer and Homemaking	1,092	751	1,015	1,123	933	1,982	1,371
Occupational Preparation Home Economics	1,098	153	219	496	429	598	367
Office	4,421	325	827	2,464	1,098	2,399	1,926
Technical	1,073	115	159	1,169	503	290	626
Trades and Industry	4,549	1,100	1,511	3,528	1,995	4,355	2,709

Note. State's Federal 346 - 2 reports for FY '75.

All program areas are unduplicated teacher counts

Table 15: Vocational Education Teachers of the Handicapped and Disadvantaged

States	Illinois	Indiana	Iowa	Michigan	Minnesota	Ohio	Wisconsin
Total Handicapped (Unduplicated)	2,469	190	63	17	364	67	215
Secondary (FTE)	1,104	190	28	1	143	56	76
Post-Secondary (FTE)	48	-	35	11	181	8	-
Adult	198	-	-	1	40	-	-
Full-Time	130	-	-	0	-	-	-
Part-Time	68	-	-	1	40	-	-
Total Disadvantaged (Unduplicated)	4,627	154	91	246	949	1,438	661
Secondary (FTE)	2,349	154	57	158	414	1,315	227
Post-Secondary (FTE)	301	-	74	33	115	29	-
Adult	90	-	-	2	19	84	-
Full-Time	50	-	-	0	-	25	-
Part-Time	40	-	-	2	19	59	-

Note. State's Federal 346 - 2 reports for FY '75.

Official figures are reported to the U. S. Office of Education on vocational teacher education trainees as shown in Table 16. The researchers realize the great difficulty in compiling such figures due to the variety of ways through which teachers become qualified for vocational education teaching positions. Training patterns vary as do certification requirements. In lieu of these facts and missing data, it appears somewhat risky to make comparisons among the states. However, the figures are shown as reported.

Teacher Education Institutions and Programs

A traditional argument in vocational education had been related to how best to organize the vocational teacher education program. One strongly held philosophy would suggest that a number of service areas should be found on a single campus and that even within single service areas the program should be large enough to accommodate a number of teacher educators. In some states there has been an attempt to limit the number of institutions while in other states there were few restraints on approval of institutions that applied. This fact tends to make opportunities more available geographically, but at the same time, it promotes a proliferation of programs, many times with a relatively small number of students and faculty. Figure 33 lists the approved teacher education institutions in each state. It is noted that Iowa has only 3 approved institutions each offering programs in 3 or more service areas as compared to Michigan with 14 approved institutions with 8 offering 3 or more programs. In Wisconsin 7 campuses of the University of Wisconsin System offer approved programs with only 2 of them having 3 or more service areas.

Table 17 provides information on the number of teacher education programs by service area in each state. In Wisconsin, office occupations is offered in four institutions, agricultural and home economics education in 3 and trades and industry and distributive education in 2.

The researchers do not draw conclusions from the data presented, however, they suggest that each state needs to continue to evaluate its practices in light of how the best teacher education can be provided at an acceptable expenditure level.

Teacher Education in Illinois

In the State of Illinois, inservice education is provided to vocational educators through funding by the Department of Adult, Vocational and Technical Education. It can be provided by state board staff or people in local communities or whomever depending upon who is most qualified to give an inservice course. It should be noted that almost all the workshops are offered for credit. Some credits are granted through the university system. Rarely are outside university staff called in as consultants to the various workshops and seminars. Local

Table 16: Vocational Education Teacher Trainees

States	Illinois	Indiana	Iowa	Michigan	Minnesota	Ohio	Wisconsin
Total Enrollees in Teacher Training	NA	1,605	5,428	7,140	7,142	4,974	8,604
Preservice		1,605	1,305	3,034	2,614	2,841	2,222
Inservice		-	4,123	4,106	4,528	2,133	6,382
Total Trainees Completing State Plan	NA	879	357	1,474	5,492	2,237	614
Preservice		361	275	1,006	964	1,153	658
Inservice		518	82	468	4,528	1,084	146

Note. State's Federal 346 - 2 reports for FY '75.

Figure 33: Educational Institutions Offering Vocational Teacher Education Programs

ILLINOIS		INDIANA	IOWA	
*Chicago State University		*Ball State University	*Iowa State University	
*Eastern Illinois University		*Indiana State University	*University of Northern Iowa	
*Illinois State University		*Indiana University	*State University of Iowa	
*DeKalb Southern Illinois University- Carbondale		*Purdue University		
*Southern Illinois University- Edwardsville				
*University of Illinois-Urbana				
*Western Illinois University-Macomb				
MICHIGAN		MINNESOTA	OHIO	WISCONSIN
Adrian College	Bemidji State College	Ashland College	University of Wisconsin	
Albion College	*Mankato State College	Bowling Green State University	*Madison Campus	
*Central Michigan University	Morehead State College	Central State University	Eau Claire Campus	
*Eastern Michigan University	*St. Cloud State College	Cleveland State University	Flatteville Campus	
*Ferris State College	Southwest State College	Findlay College	River Falls Campus	
Madonna College	Winona State College	*Kent State University	Stevens Point Campus	
Marygrove College	*University of Minnesota	Miami University	*Stout Campus	
Mercy College of Detroit		*Ohio State University	Whitewater Campus	
*Michigan State University		Ohio University		
*Northern Michigan University		University of Akron		
Siena Heights College		*University of Cincinnati		
*University of Michigan		University of Dayton		
*Wayne State University		University of Toledo		
*Western Michigan University				

Source: State Plans of: Illinois, (1975, pp. 164-1660; Indiana, (1975, pp. 126-128); Iowa, (1975-79, pp. 65-66); Michigan, (1974-75), Appendix H; Minnesota, Appendix II-ii to II-iv; Ohio, (revised 1975), p. 118-120.

Note: * Institutions offering teacher education programs in 3 or more service areas.

Table 17: Number of Vocational Teacher Education Units by State and by Program Area

	ILLINOIS	INDIANA	IOWA	MICHIGAN	MINNESOTA	OHIO	WISCONSIN
<u>Program Area</u>							
Agriculture Education	4	1	1	1	1	2	2
Distributive Education	8	3	2	8	7	3	2
Home Economics	6 ^b	4	3	12	3	9	3
Office Education	8	3	1	8	7	12	4
Trade & Industry Education	7	3	2	9	6	5	2
Health Occupations	1	1	1				
Total Teacher Education Units	34	15	10	38	24	31	14

Note. Illinois (1975, pp. 164-166); Indiana (1975, pp. 126-128); Iowa (1975-79, pp. 65-66); Michigan (1974-75, Appendix H); Minnesota, Interview,

George Boroff, Consultant, EPDA Program; Ohio (Revised 1975, pp. 118-120); Wisconsin (1976-80, pp. 70-72).

^b Found under personal and public service occupations.

people who are well qualified are essentially made into adjunct professors. Workshops are provided on each of the campuses as well as at the state convention. Requests for specific workshops or seminars are directed to the Office of Professional and Curriculum Development which provides the funding through contract on a request for proposal basis. Those people making the requests, that are funded, act as the mentors for the inservice course that is provided. (See Figure 34 which illustrates the articulation that exists between the University System and the Division of Vocational and Technical Education.)

Contracts for inservice amount to \$120 - \$125 thousand per year. To skirt this problem Illinois anticipates entering a model with the cooperation of the various universities to provide inservice. When needs are predetermined the universities are reimbursed for teacher inservice. They are provided for financially, in a block form, such as by head count. The purpose of this arrangement is to provide better rapport with the universities and for better management of resources. Very often the inservice provided is piloted under the direction of the liaison person at the university working in cooperation with districts to see that the inservice model is functional.

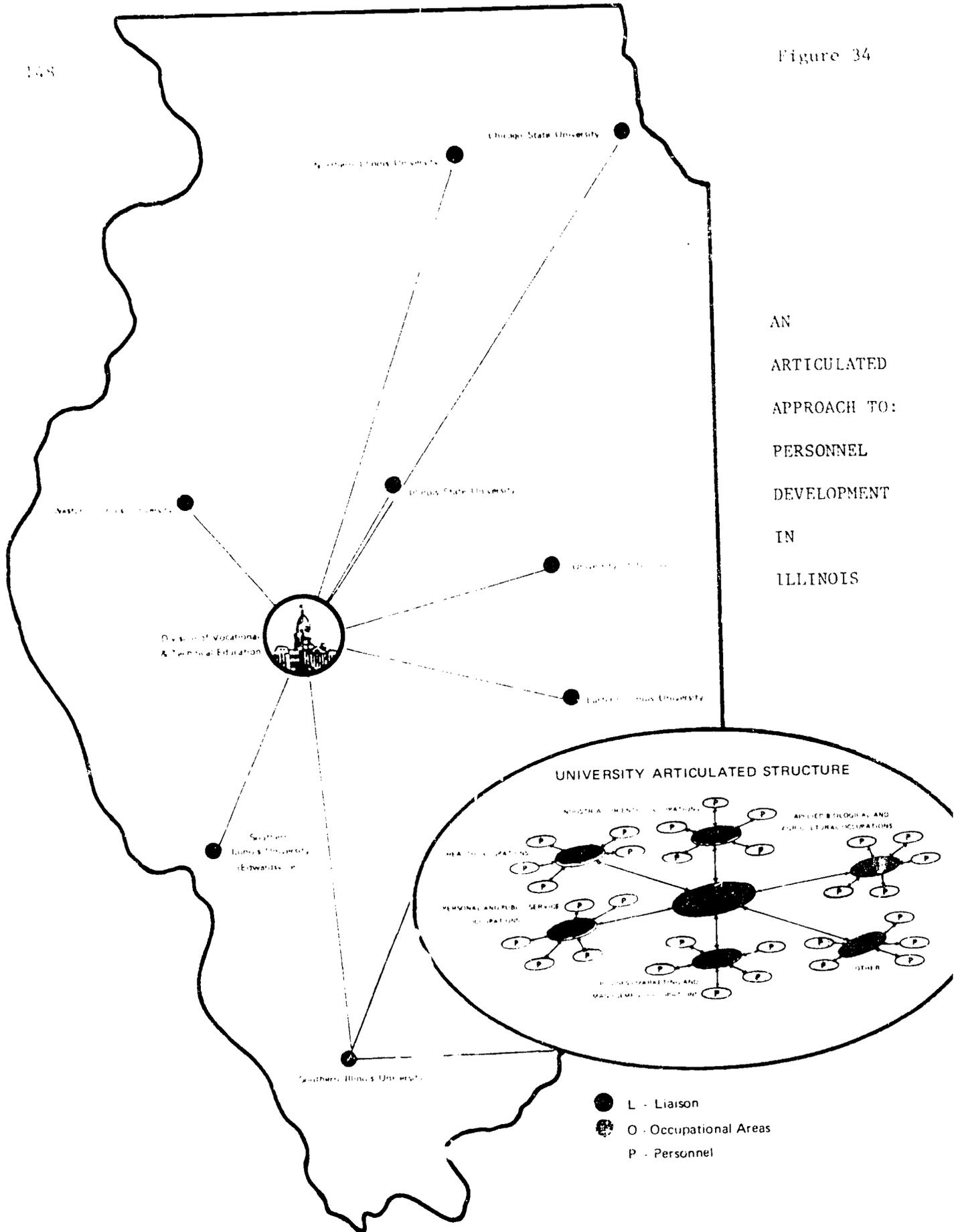
One of the problems of inservice is that there is no mandate at the state level requiring people to participate in inservice. Thus, in-service becomes a strictly voluntary activity on the part of teachers. A change in legislation would eliminate this problem. Some provision is being made for this now that may require teachers possessing a provisional certificate to participate in some inservice instructional activities.

It is noted that since 1969 there have been no certification requirements to speak of in the state of Illinois as long as one possesses a valid teacher's certificate. Certified teachers are allowed to teach in community colleges. There are some provisions required of community college teachers; they must possess 2,000 hours of work experience. A teacher in the post-secondary system may possess one of two types of provisional certification. The first may have less than a B.S. degree but have 2,000 hours of experience and be skilled in an occupation or trade. The second type of provisional certification is the temporary certification which requires that a teacher who continues to teach in the community college take 3 credits per year for renewal of certification. Since 1969, Department of Public Instruction has awarded 1,900 provisional certificates. Most of these have been in highly skilled areas in the technologies and in health occupations particularly for those people who have health care licenses within the state.

When an inservice workshop is conducted in one of the several service areas, administrative personnel have found that articulation occurs without duplication if teachers from both the secondary and post-secondary systems are taught in one workshop.

Funds within Illinois pertaining to inservice and preservice education cannot be calculated. There will be fluctuation from year to

Note: The Division of Vocational and Technical Education is now called the Department of Adult, Vocational and Technical Instruction.



year depending on state needs in either preservice or inservice education. For instance, one year they may find that they will need to produce better teachers or administrators at the university level. Once these are trained they may find other uses for their funding and might revert again to inservice education.

The major mission of the institution of Higher Education is to train people in occupational and skilled areas. In addition to the two year technical program, 2,000 hours of work experience qualify enables graduates to obtain certification to teach.

Illinois has eight universities that provide comprehensive vocational programs for teacher education (Refer back to Figure 33). On each of the campuses there is one person in charge of activities pertaining to vocational educators. These persons comprise part of the state's University Occupational Education Coordinators Council for which the State of Illinois expends \$75,000 per year. Usually university representatives are appointed by the university president and are either deans, department chairmen, or work in the provost office. They are members of the above mentioned council also composed of representatives from such bodies as the Board of Higher Education, the Junior College Board, and the Director of Professional and Curriculum Development from the State Board Office. The purpose of this advisory council group is to provide a vehicle for articulation between the state board and the universities for the preparation of vocational education teachers. Since 1970, all teacher education has been handled through this council. The council gives input to the state board, but the state board manages teacher education within those universities through approval of RFP's and contracts. The advantage of this is that state board has one contact at each of the universities to deal with.

Teacher Education in Indiana

Because a statement relating to teacher education was prepared, parts relevant to this study are quoted directly below.

The professional development system in Indiana encompasses both pre-service and in-service components. The four state universities provide pre-service professional development in the areas of agribusiness, distributive education, business and office education, industrial education, home economics education, and health occupations education. Graduate courses are offered in these areas as well as in administration and related support services. The intensive educational program necessary for the certification of eligible persons from business and industry is handled by the teacher education staff from the four universities as is the follow-up of the conditionally licensed teachers. The in-service of employed staff in each local education (LEA) is the responsibility of the local school. Services of the state staff and the

university are available for consultation and assistance in planning and implementing the local in-service education effort. Professional development programs are also conducted at the institutions offering postsecondary education using both federal and local funds. The summer vocational conference is planned for the professional development of teachers, supervisors and administrators of vocational programs at both the secondary and postsecondary levels. Supplementary funds such as EPDA, Part F, are very important to the total professional development effort as projects are directed at target groups in need of in-service education for which no other funding is available. A state professional development advisory committee provides valuable input into the state system, as do the regional advisory committees.

TITLE: Professional Development Agreements--
Teacher Education Contracts

AGENCIES: Ball State University, Indiana State University,
Indiana University, Purdue University

YEAR: Annually

- A. UNDERGRADUATE AND GRADUATE COMPONENT
(University credit courses where there is tuition payment)

FUNDS:	BSU	ISU	IU	PU
1972-73	\$35,050	\$97,251	\$39,396	\$116,046
1973-74	21,027	59,945	18,827	63,424
1974-75	47,492	87,127	54,397	87,562

SOURCE OF FUNDS: Part B Ancillary - Professional Development
Part F Professional Development

PARTICIPANTS: Undergraduates and graduate vocational teacher education personnel. (Involves tuition payment and course credit.)

OFFERINGS INCLUDED:

Ball State University offers undergraduate programs in Business Office Education, Distributive Education, Home Economics Education and Industrial Education and graduate programs in the same areas.

Indiana State University offers the undergraduate programs for Business Office Education, Distributive Education, Home Economics Education and Industrial Education. Graduate programs include these as well as Vocational Education.

Indiana University offers the undergraduate program in Home Economics Education and Distributive Education. The

graduate offerings include Home Economics Education, Distributive Education and Vocational Education. Purdue University offers both the undergraduate and graduate program in each of the following: Agribusiness, Home Economics Education and Industrial Education.

OBJECTIVES: The purpose of this funding is to provide services and program components in addition to those supported by tuition and the state legislated funds. The objectives of these programs include:

1. To provide for the baccalaureate degree to meet certification requirements.
2. To provide graduate courses to meet a) individually identified in-service needs of vocational personnel, b) to provide for initial certification of those individuals desiring to move from the general area into the vocational area and c) to professionalize a license according to certification requirements.
3. To provide a base for research and dissemination for vocational professional development.

DELIVERY METHOD AND EVALUATION: The delivery method for these areas have been in the form of college credit courses, offered both on and off campus. The individual program area emphasis on recruitment, counseling, job placement and follow-up has been minimal. Student teacher supervision by the program area specialist has varied from university to university, with Purdue providing the largest amount of university supervision by the program area specialist personnel. The other universities are moving toward a greater percentage of this type of supervision, yet greater encouragement and support is needed to accomplish this in light of present university procedures and policies. (See Figure 35.)

Efforts are being made at each of the universities for all vocational areas to function as a coordinated team. Great progress has been made recently in implementing this concept of total vocational education, which has contributed to a combining of strengths and a minimizing of overlapping efforts.

Each university's vocational faculty is addressing the new certification course requirements. A concern is being expressed for intra-university cooperation and coordination and for interuniversity communication in the development of these courses.

The funding for this portion of the professional development effort is based on 20% of the faculty salaries and a final amount based on partial funding on

travel and workshop expenses plus a contact hour reimbursement rate. (See attachment for actual figures.)

B. NON-CREDIT OFFERINGS SUCH AS CONDITIONAL CERTIFICATION AND SERVICES TO LOCAL EDUCATION AGENCIES (LEA's).

FUNDS:	BSU	ISU	IU	PU
1973-74	\$14,500	\$68,382	\$31,287	\$47,980
1974-75	14,500	68,382	31,287	47,980

SOURCE OF FUNDS: Part B-Ancillary - Professional Development

OBJECTIVES, DELIVERY METHOD & EVALUATION: Each of the universities has been assigned an area of the state as their prime responsibility for professional development activities. The conditional clock-hour program is provided for qualified individuals from business and/or industry who have been selected and hired to teach vocational subjects. This educational program is designed to meet the minimum certification requirements for the initial and renewal certification. Concern has been expressed regarding the adequacy of the program to meet the basic needs of these teachers. Individual teacher follow-up has been accomplished in varying amounts, although in most cases a greater amount would have been beneficial. There has been concern about the delivery system with regard to timing of instruction, content and the availability of sufficient time to adequately accomplish the objectives of the program.

Funds are provided for 100% of the salaries of teaching staff, secretarial staff, travel and other expenses necessary for this program. The delivery method consists of class work, with individual projects and approved workshops applicable for minor portions of the required 30 hours renewal. Plans are underway to offer the 15 clock-hours in a series of workshop settings prior to the opening of school this coming year.

The universities provide resource personnel and resource materials upon request from the LEA's as well as seeking ways in which their services can be utilized. Efforts are being made to initiate a needs assessment on a statewide basis with both individual and local education agency professional development plans being developed.

The secondary and postsecondary levels are both being addressed by this program although vocational certification is required for only the faculty in approved vocational programs at the secondary level. The postsecondary utilization of these professional development services is open to teachers, supervisors and/or administrative personnel.

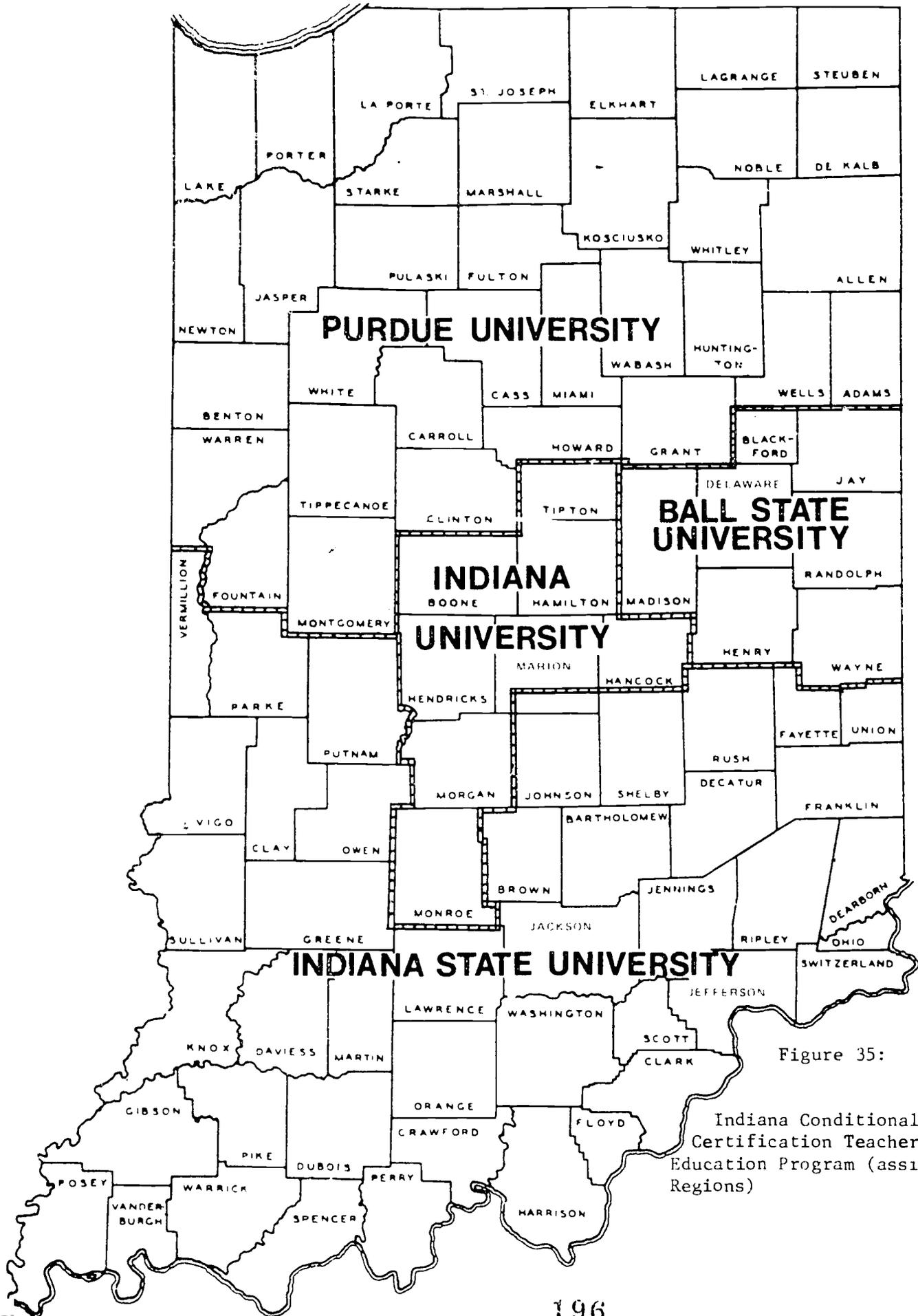


Figure 35:

Indiana Conditional Certification Teacher Education Program (assigned Regions)

Teacher Education in Iowa

Iowa has 3 state supported universities at which pre-service teacher education takes place. (Refer back to Figure 33.) Pre-service training consists of both technical and professional courses. Teacher educators supervise teacher trainees to insure preparation and adequate background.

Inservice education is provided teaching personnel through numerous workshops given throughout the state in addition to scheduled regional meetings and summer courses. Trade performance examinations are administered to instructors.

The Department of Public Instruction has provided concise statements relating to professional development in their State Plan for the Administration of Career Education. The following is quoted from pp. 19-23 of this document.

Policies and Procedures for Personnel Preparation and Development

Career education under the State Plan will include teacher training program(s) (both pre-service and in-service) which are adequate to provide for a sufficient supply of qualified teachers, supervisors, and other career personnel in the State including those capable of meeting needs of the disadvantaged and handicapped.

Pre-service and in-service training for professional career education occupations may be provided for positions such as teachers, supervisors, directors, administrators, and other personnel related to career education including those capable of meeting the special needs of the disadvantaged and handicapped.

Funds for teacher training may be used for curriculum development, research, special demonstration and experimental program development of instructional materials, and provision for equipment.

Teacher training may be delegated to appropriate designated teacher training institutions. The teacher training services of these institutions may include graduate degree, undergraduate degree, college credit programs for both in-service and pre-service qualified personnel, and short, intensive training for non-college credit to meet the needs of the instructional personnel.

Teacher training, which is provided by an agency or institution shall be supported by a cooperatively developed written agreement between the State Board and the agency or institution providing such training. Such agreement shall describe the responsibilities and duties of the parties involved; specify the major kinds of activities to be conducted; indicate the financial commitment on the part of both the institutional agency and the State Board; and procedure to be used in evaluating the effectiveness of the program so described. Such agreements shall be reviewed and, when necessary, renegotiated on an annual basis.

Objectives of Personnel Development System

The ultimate objective for all programs or projects related to this system will be the expansion and improvement of activities for individuals who can profit by vocational and technical education. The thrust of projects to be supported or sanctioned by this system will be directed toward the personnel who advise, teach or are in other ways associated with career activities. More specifically, programs or projects will be designed to achieve one or more of the objectives listed below:

To adjust the supply to the needs and improve the competencies of career education personnel in the elementary, secondary, and postsecondary institutions offering vocational-technical education.

To prepare teachers, administrators, and supervisors who are capable of successfully integrating career/occupational preparation and academic education at all levels.

To prepare vocational education teachers, administrators, counselors and supervisors who have a commitment to, and the capability for, working with disadvantaged individuals whose needs for programs or services result from such conditions as poverty, neglect, delinquency, cultural or linguistic isolation as well as physical and mental handicaps.

To promote the need for, and to improve the competency of, educational personnel who can provide a program of guidance services for all individuals; to include vocational counseling, appraisal, placement, informational and follow-up services.

To improve the competency of vocational and technical education personnel to do both short- and long-range planning and evaluation.

To reorient and instruct (or indoctrinate) presently employed teachers at all levels to work effectively and constructively within the career education concept and philosophy.

To recruit persons with a wide range of educational, industrial and social backgrounds to enter vocational and technical education, particularly for categories and areas where critical shortages exist.

To encourage and facilitate the expanded use of a wide range of personnel who, though not designated as vocational educators, have expertise which can provide considerable assistance to the improvement of vocational and technical education.

Conducting the Professional Development Program

Entry level career education professional development is required through certification rules and regulations. In addition to the above required professional development

activities, professional improvement is encouraged through the administration of EPDA Leadership Development Awards, the activities of career consultants which encourage local in-service programs for elementary, secondary and postsecondary personnel. Statewide career education conferences, seminars for career teacher educators and the annual reviews of currently funded activities all provide vehicles which are used for stimulating professional development of career education personnel.

All institutions involved in career education professions development activities which receive financial support from state and federal monies administered and/or coordinated by the DPI, have their offerings, throughout the state, coordinated by career education personnel. This procedure prevents duplication and insures the most efficient utilization of available resources.

New career education instructors receive intensive orientation to their new professional responsibilities through attendance at specially designed workshops. This activity provides participants with experiences directly related to their new teaching assignments.

In-Service and Pre-Service Personnel Development

The state has developed a delivery system for in-service activities. This system will be modified as necessary to continually meet emerging professional development needs. This system will utilize the capabilities of all institutions of higher education in Iowa engaged in Career Education professional development as well as providing for the use of training capabilities of business, industry and other agencies. A consortium has been organized to develop performance criteria for the measurement of technical skills possessed by teachers. Performance-based teacher certification will be initiated so as to provide training which is closely related to actual employment situations.

Meeting Personnel Needs

Cooperation between many agencies is necessary to meet the multiplicity of professional development needs of career educators. The state education agency community colleges, vocational schools, colleges, and universities, and local education agencies play important roles in both pre-service and in-service training. In addition, private enterprise provides many high quality experiences in business, industry and commercial activities. The special expertise of each of these operations must be orchestrated to insure the high quality preparation required to improve instruction in career education.

Current policies of the Iowa State Board of Public Instruction allow for resources to be allocated to the most appropriate public or private agency to fund activities which will result in the attainment of desired objectives.

Professional development activities which are provided by an agency or institution shall be supported by a cooperatively developed written agreement between the State Board and the agency or institution providing such service. Such agreement shall describe the responsibilities and duties of the parties involved; specify the major kinds of activities to be conducted; indicate the financial commitment on the part of both the institutional agency and the State Board; and procedure to be used in evaluating the effectiveness of the program so described. Such agreements shall be reviewed and, when necessary, renegotiated on an annual basis.

Resource Utilization

The Iowa State Board of Public Instruction is charged with responsibility for elementary and secondary education as well as the area community colleges and vocational schools. The consolidation of this broad range of responsibility under one administrative structure provides for articulation of career education goals from the elementary school to the secondary school and on to postsecondary and adult programs.

The Iowa Board of Regents is the policy making body for the three state supported universities. Cooperative action by the Iowa Board of Regents and the Iowa Board of Public Instruction resulted in the assignment of primary and secondary responsibility for the preparation of career educators, in categorical programs, to the various regents universities. These universities have subsequently received financial support from the Department of Public Instruction, to aid in the provision of career education professional development experiences both on campus and throughout the state.

The State Career Education Advisory Council will be consulted in the identification of priority needs for professional development. The input of this group is extremely valuable because of the diverse groups they represent.

Determination of Personnel Preparation and Development Priorities

The determination of priorities is an ongoing process which includes data collection, evaluation and analyzation.

The staff of the department, area school, elementary-secondary school, and university personnel all contribute to the process. In addition, this information is supplemented by the recommendations of local and state advisory councils. The advisory committee (see 1.44) has priority determination as a primary role.

National, state, area and local employment trends are considered.

The state staff considers the input from all of the above. Subsequent priority rankings become an integral part of the Department of Public Instruction's management system.

Currently identified priorities include:

- Interdisciplinary programs through which all personnel become knowledgeable about career education.
- The pre-service and in-service development of personnel who will serve in the pre-career program. The objective of this preparation is to provide educators with the competencies required to deliver educational programs at the elementary and secondary levels which will increase student awareness of the range of options open to them in the world of work.
- The development of preparation programs which utilize competency based criteria.
- Involvement of all personnel entering career education positions in pre-service programs of preparation.
- Interdisciplinary programs which provide the knowledge and skill required to deal effectively with special needs populations.
- Development of flexible programs which can rapidly respond to emerging needs, e.g., programs for veterans.

Teacher Education in Michigan

A great deal of autonomy is exercised by local vocational personnel in providing their instructors with in-service education. Presently, a teachers' need assessment system is not in operation, so in-service needs are determined by local administrators. Inservice education is supported by state monies and also supported by local funds since the present system tends to stimulate local contributions.

In fiscal year 1975 state contributions for inservice teacher education amounted to approximately \$200,000 as determined by the added on cost formula. Standard procedure asks that 5% of local monies be spent on inservice teacher education. State monies for teacher inservice amounted to \$225,000 from Part B funds and \$560,000 from Parts C, D and other Part B grants. The later monies were given in response to requests for proposals. The use of the RFP's stimulates both competition and cooperation between universities and local education agencies for state and federal funds that support inservice education. University based teacher educators do not readily accept the responsibility of leaving their campuses to provide inservice education, however, the state supports this outreach concept. It is noted that the inservice provided is such that competence-based curriculum is stressed as well as individualized instruction methodology.

Two vocational teacher education consortia exist among the 14 Michigan institutions cited in Figure 33. The Vocational Consortium is composed of representative deans associated with vocational teacher education while the Career Education Consortium is made up of higher education personnel who are interested in the contributions made by career education to their institutions and to teacher education. Monthly meetings are attended by these consortia and state vocational personnel to outline and follow through on annual activities to be accomplished.

Inservice teacher education presents many challenges. One of these involves the concept of "transfer." To be of more assistance to vocational teachers, inservice is being provided more and more at the local site rather than at a workshop away from the teaching-learning environment of the vocational education classroom. Therefore, some grants are awarded to local districts in which a four-person technical team furnishes instruction and materials for teachers. These teachers receive release-time to participate in such 3-month inservice activities. The state has 4 of these technical teams that are composed of 2 teacher educators and 2 teachers representing individual school districts. In the length of time provided, it is intended that necessary curricular and/or structural changes be made at the local site. This method has become an important process vehicle for constructive change.

Michigan state personnel believe pre-service teacher education is the sole responsibility of the teacher trainee and the institution of higher education found in their state.

Teacher Education in Minnesota

The state vocational personnel in Minnesota exert control over inservice teacher education by acting as implementors, monitors and coordinators. Programs for inservice are generally provided through agreements with state institutions of higher education. In fiscal year 1975, \$600,000 of Minnesota's federally allocated Part E funds went to provide outreach inservice programs for vocational teachers. The programs are implemented by staff development personnel at local area vocational technical institutes while university personnel take the responsibility for determining inservice needs, for establishing workshop procedures and estimating their cost.

The emphasis in the inservice programs provided is on competency-based teacher and administrator education. Professional growth becomes the goal. For example, the state vocational personnel are presently making an effort to establish the content of an inservice program for vocational directors on school finance. In the process surveys are circulated to determine directors' needs in relation to administrative tasks. Completed surveys are reviewed by inservice instructors, and the workshop agenda is formulated into concurrent sessions. The local director reviews the agenda in light of his professional needs with his superintendent to determine problem areas that may be resolved by attending the workshop.

Teacher Education in Ohio

Professional development of vocational educators in Ohio is strongly supported whether it is met through the preservice or inservice approach. Reimbursement for such activities occurs at the rate of 50% of the teacher educators' salary, fringe benefits, 100% for travel expenses and a small amount for supplies.

State needs relating to inservice education are usually determined by state vocational education supervisors with a view toward the vocational education needs of the state. Once identified needs are met by arranging for educational services through institutions of higher education. Through a joint effort, state supervisors and teachers provide inservice for vocational education teachers. Each of the service areas receives 4 to 5 grants amounting to a \$4,000 to \$5,000 allotment per grant, per annum to coordinate inservice activities.

A primary goal of Ohio state vocational personnel is to develop committed and competent administrators and supervisory personnel so that teachers might be assisted and provided for educationally with the goal being better teacher instruction. With a philosophy of providing training to develop leadership as close to the point of action as possible, vocational leaders are given an opportunity for further specialized learning through summer workshops and twelve month internships. This approach began in 1966 commencing with the training of vocational education directors. In 1976, this type of program will be expanded to include supervisors. The summer workshops are generally six weeks in length and are held at Kent State University. A subsistence allowance is given educators who attend the summer workshops while \$7,500 is given toward salary for those educators who participate in the internship program. A 92% placement record exists in Ohio for 272 vocational educators who have participated in this leadership program.

Teacher Education in Wisconsin

Playing a major role in pre-service education of vocational teachers are 7 campuses of the University of Wisconsin System. (Refer back to Figure 33.) Figure 27 shows their areas of vocational education specialization. In addition to the state supported schools, a number of private colleges and Marquette University, in the area of dental hygiene, contribute to pre-service vocational teacher preparation activities. Pre-service education is not financially supported from state or federal vocational education funds.

In-service teacher education is another major activity in Wisconsin. The State Board Staff have accepted responsibility for considerable numbers of inservice workshops and other activities primarily by special occupations or interest groups. Universities provide off campus courses and a limited amount of non-credit type activity. Vocational teacher educators receive no salary support from state vocational funds therefore, they are limited in the time they can spend in non-credit activities.

Additional inservice is provided through the Center - University of Wisconsin-Stout and by the Wisconsin Vocational Studies Center at University of Wisconsin-Madison often supported in whole or in part by vocational funds usually from EPDA moneys.

Teacher Certification

Research has shown that one of the most important, if not the most important, variable in providing quality vocational education is the quality of the teacher. The main purpose of certification is to attempt to assure that teachers are adequately prepared.

Academic teachers' certification requirements are complex enough, however they have been based on a traditional four-year college program with the main variables being the specific courses to be taken. For vocational teachers in a number of the service areas, the problem of qualification is much more complex. First, there is the philosophy that in order to teach an occupation a person should have demonstrated competence in the occupation being taught. Thus, a requirement exists that the teacher have occupational experience in the occupation and often at a level that denotes a skilled worker. Secondly, in the case of a number of occupations, appropriate training in the skilled area is not provided in a teacher education institution and perhaps it should not be. For many occupations, tradition and practice has shown that it is much more sound to recruit persons who have been prepared for an occupation and then to train them to be teachers. Many examples of this can be drawn from the trade and technical areas. The health area can be used as another example. If one believes that a teacher should be qualified in the area that she or he is to teach, then, it is logical that the person has met the license or registry requirement in the occupational area in order to be qualified to teach. For teachers of the respective health occupations it is common to recruit into the teaching ranks licensed nurses and certified persons from the allied health occupations after they have had occupational experience. The above factors plus the fact that vocational programs are on a continuum in terms of depth of occupational competence required by the instructor with programs ranging from basic exploratory programs to very highly skilled or technical programs.

One additional dimension is that vocational education serves both youth and adults in full-time and part-time programs in many occupations and in different institutional settings.

Appendices D-1 through D-10 provide detailed tables of the specific requirements for teacher certification in each state by service area.

Among the states studied, only three states have post-secondary certification standards. Wisconsin is one of these states. Certification of teachers in Wisconsin is accepted as being one control for attempting to achieve quality instruction.

REFERENCES

Information used in Chapter I other than specifically cited sources was drawn heavily from the Encyclopedia Britannica. Throughout the report, certain information was extracted from individual state plans and other official state publications which appear in the body of the text as well as in certain of the figures. Legislation not specifically cited and mainly included as Appendix C was extracted from the individual State Codes and should be current legislation to date.

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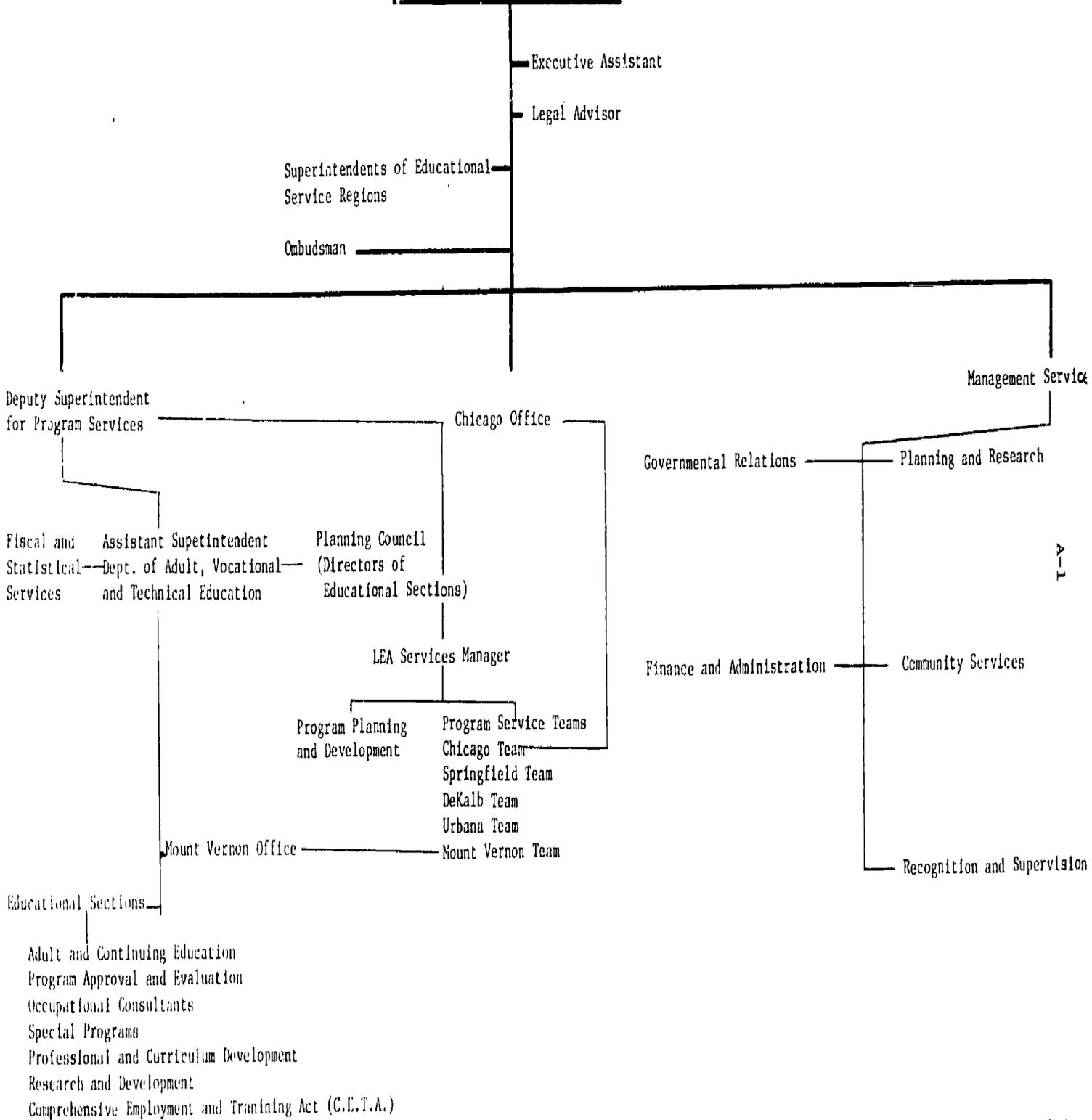
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- Wisconsin Sessions Laws. Chapter 414, Section 1 (1963-64). (b)
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- Wisconsin Statutes. Chapter 41, Section 15 (9) (1963). (c)
- Wisconsin Statutes. Chapter 115, Section 54 (1973).
- Wisconsin Statutes. Chapter 20 (1973).

A P P E N D I C E S

APPENDIX A

1. Illinois, Organizational Chart of the State Board of Education
2. Indiana, Organizational Chart of the State Superintendent of Public Instruction
3. Iowa, Department of Public Instruction Organization
4. Michigan, Department of Education, 1973
5. Minnesota, Department of Education Organization Chart
6. Ohio, Department of Education Organization Chart
7. Wisconsin, Department of Public Instruction Organization Chart

State Superintendent of Education



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note: Taken from official state publication, but only shows major line titles.

APPENDIX A

1. Illinois, Organizational Chart of the State Board of Education
2. Indiana, Organizational Chart of the State Superintendent of Public Instruction
3. Iowa, Department of Public Instruction Organization
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5. Minnesota, Department of Education Organization Chart
6. Ohio, Department of Education Organization Chart
7. Wisconsin, Department of Public Instruction Organization Chart

State Superintendent of Education

Executive Assistant
Legal Advisor

Superintendents of Educational Service Regions
Ombudsman

Management Service

Deputy Superintendent for Program Services

Chicago Office

Fiscal and Statistical Services
Assistant Superintendent
Dept. of Adult, Vocational and Technical Education

Planning Council
(Directors of Educational Sections)

Governmental Relations
Planning and Research

LEA Services Manager

Finance and Administration
Community Services

Program Planning and Development

Program Service Teams
Chicago Team
Springfield Team
DeKalb Team
Urbana Team

Mount Vernon Office
Mount Vernon Team

Recognition and Supervision

Educational Sections

- Adult and Continuing Education
- Program Approval and Evaluation
- Occupational Consultants
- Special Programs
- Professional and Curriculum Development
- Research and Development
- Comprehensive Employment and Training Act (C.E.T.A.)

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Note: ^aTaken from official state publication, but only shows major line titles.

Indiana Organizational Chart of the State Superintendent of Public Instruction

State Superintendent

Administrative Assistants

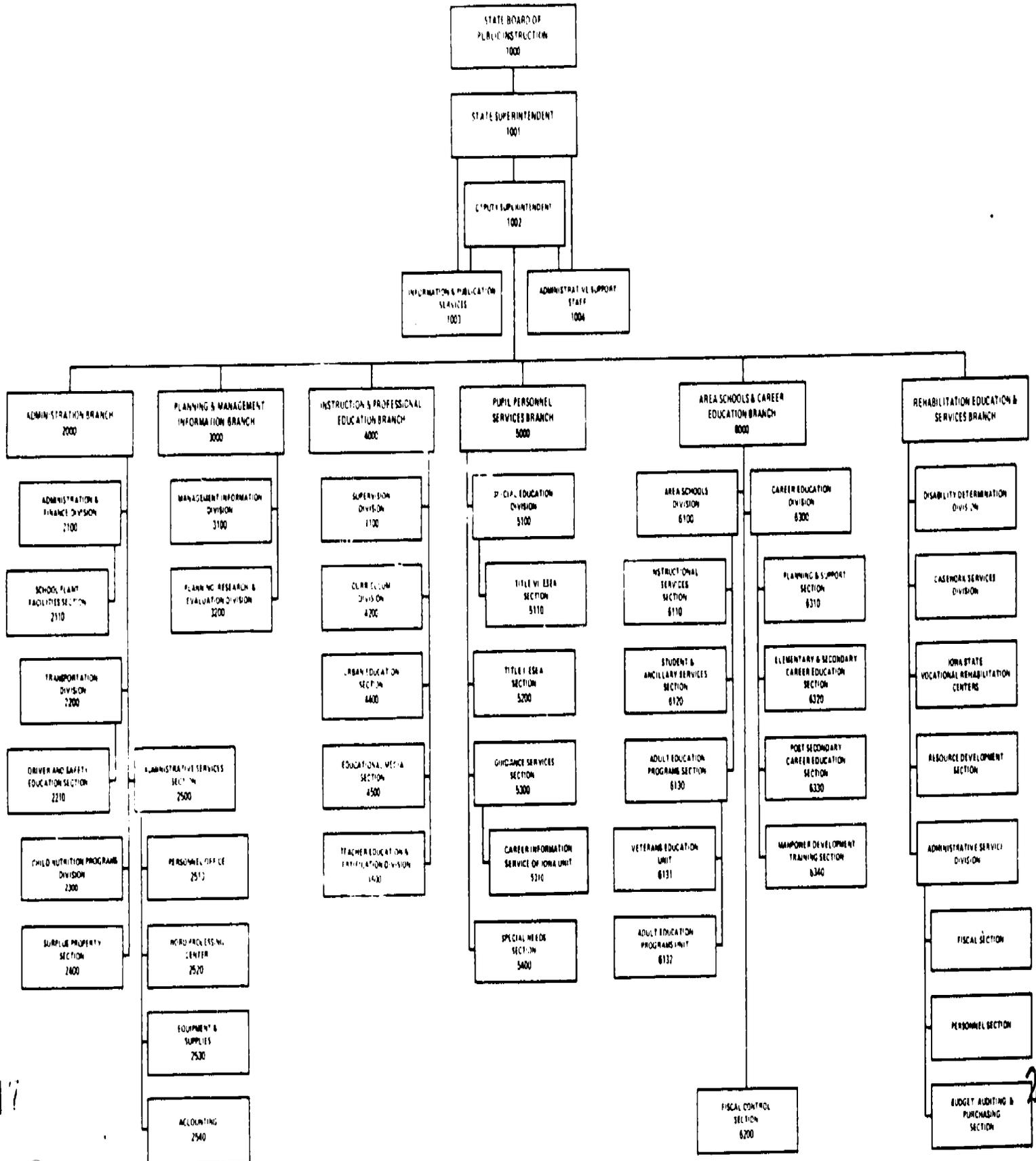
Division of Accounting and Business Management

Associate Superintendent	Associate Superintendent	Associate Superintendent	Associate Superintendent	Associate Superintendent	Associate Superintendent
Division of Pupil Personnel Services	Division of School Inspection	Division of School Finance	Division of Adult and Community Education	Division of Migrant, Bilingual-Bicultural Education	Development and Long Range Planning
Division of Curriculum	Division of Schoolhouse Planning	Division of Civil Defense Education	Division of Teacher Education and Certification	Division of Instructional Materials	Administrative Handbook Revision
Division of Reading Effectiveness	ESEA Title IV-C	Division of School Traffic Safety	Division of Vocational Education	Division of Public Information & Publications	
Division of Compensatory Education	Division of School Food & Nutrition Programs	Division of Educational Information	News Bureau	Personnel	
Arts Commission	Division of Special Projects	Division of Special Education	Division for Year-Round Schools	Private Foundations Grants	
Textbook Commission	Division of Equal Educational Opportunities	Higher Education Commission Liaison	Division of Crisis Prevention	Affirmative Action Program	
	General Commission	Private School Accrediting Commission Liaison	Criminal Justice Liaison	Staff Development & Training	
	Northern Regional Service Center	State School Property Tax Control, Board Member	Teacher Training & Licensing Commission	Space Management	
	Liaison Indiana Association, Jr/Sr Principals	Energy Coordinator		Division of Information System Services	
	Division of Professional Relations	CCSSO Study Commission Representative			

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DEPARTMENT OF PUBLIC INSTRUCTION ORGANIZATION

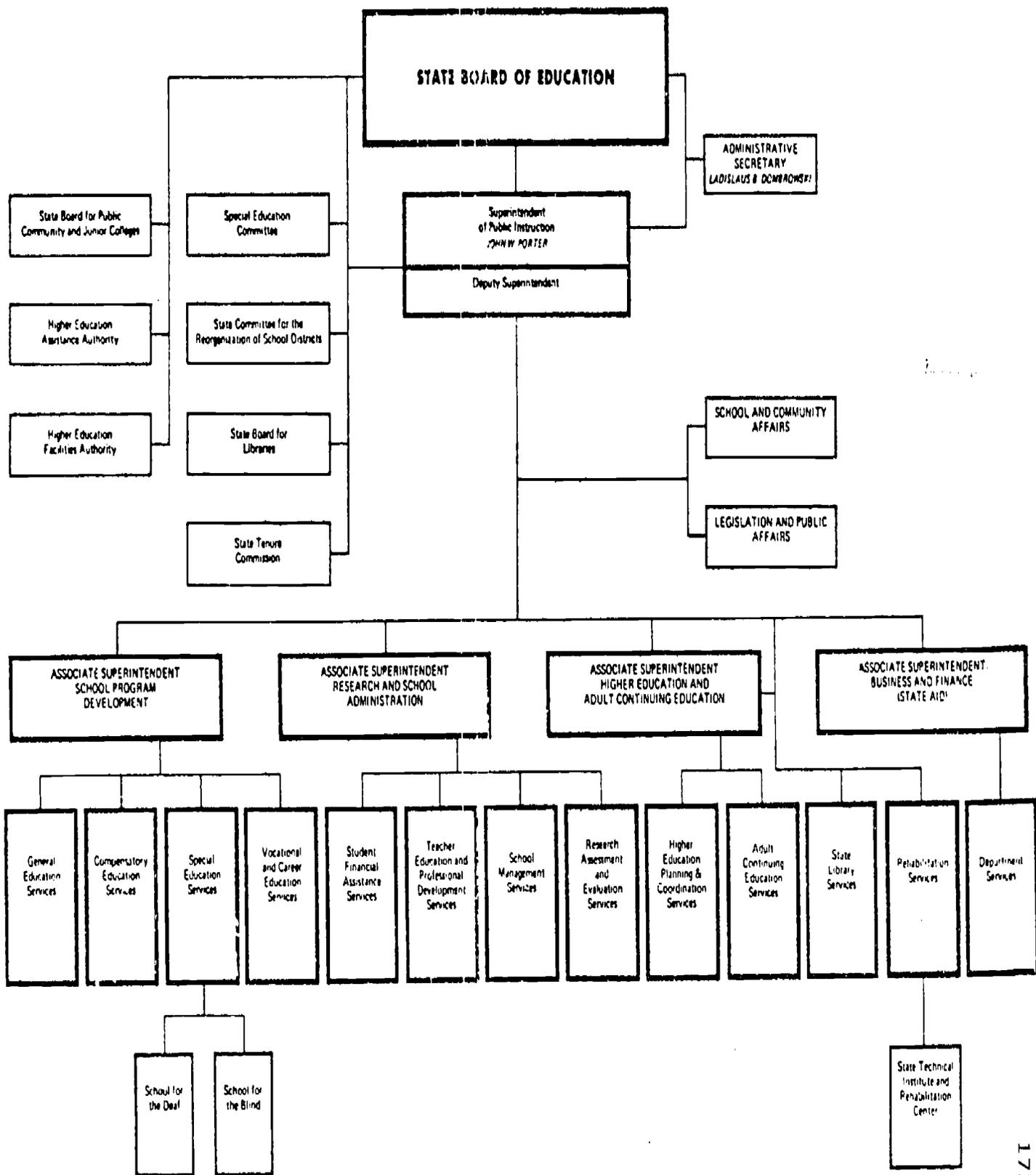


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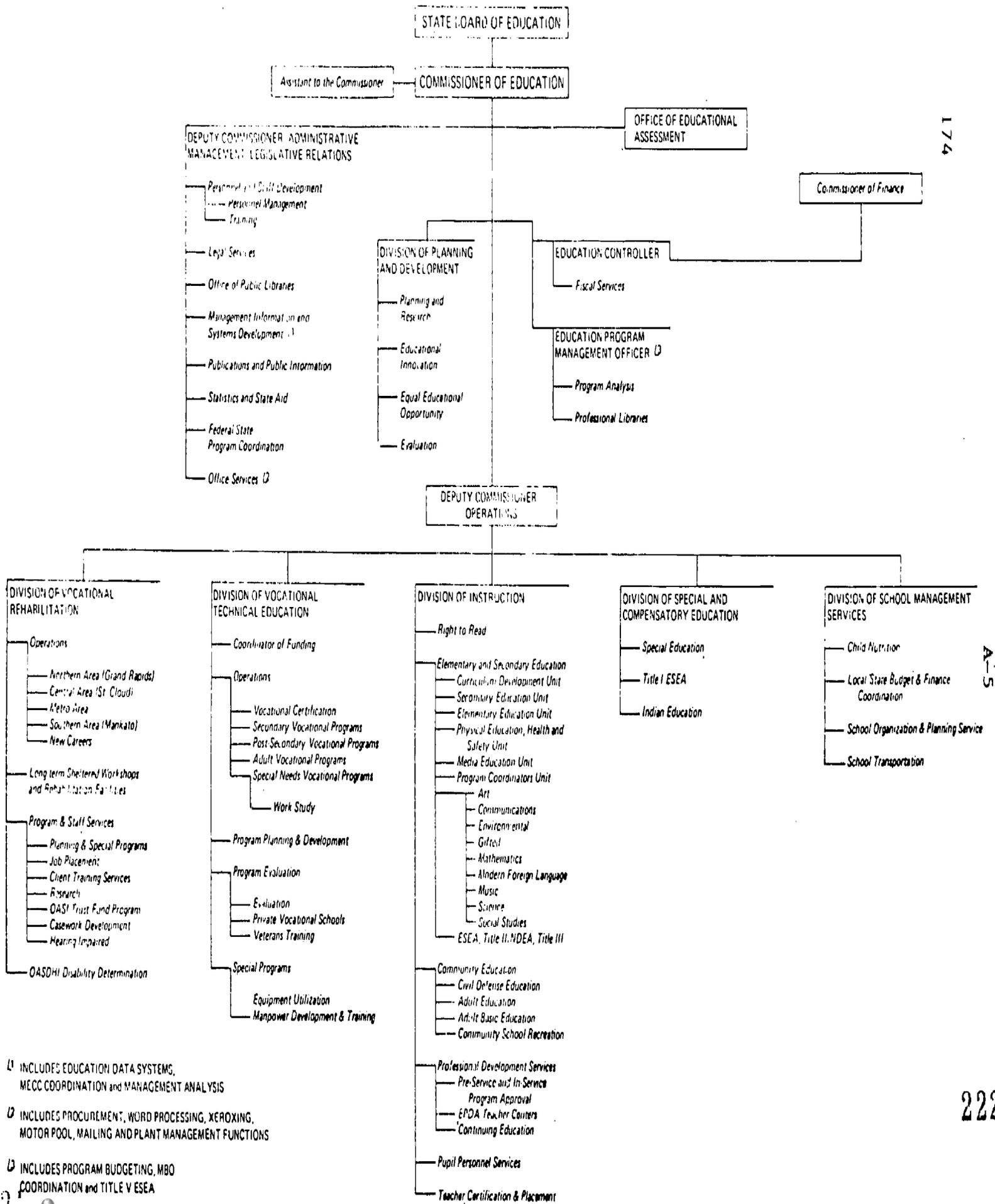
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MICHIGAN DEPARTMENT OF EDUCATION 1973



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MINNESOTA



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OHIO DEPARTMENT OF EDUCATION ORGANIZATION CHART



STATE OF OHIO
BOARD OF EDUCATION
SUPERINTENDENT OF
PUBLIC INSTRUCTION
DEPUTY SUPERINTENDENT

EXECUTIVE PLANNING COUNCIL
 Assistant Superintendent Department Services
 Assistant Superintendent Instruction
 Assistant Superintendent School Administration
 Assistant Superintendent Urban Education
 Administrative Assistant
 Director Division of Planning & Evaluation
 Director Division of Personnel, Publications
 and Legal Services

ASSISTANT SUPERINTENDENT
DEPARTMENT SERVICES

- DIVISION OF COMPUTER SERVICES AND STATISTICAL REPORTS
 - Computer Services
 - State and Local Compatibility
 - Statistical Reports
 - Business Office
- DIVISION OF SCHOOL FOOD SERVICES
 - State Agency for Property Utilization
 - Legislative Liaison
 - Public Data Information

ASSISTANT SUPERINTENDENT
INSTRUCTION

- DIVISION OF ELEMENTARY AND SECONDARY EDUCATION
 - Elementary
 - Health Physical Education and Recreation
 - Industrial Arts
 - Secondary
 - Special Services
- DIVISION OF FEDERAL ASSISTANCE
 - ESEA Title I
 - ESEA Title II NDEA Title III
 - Fiscal and Reporting
 - Social Programs
- DIVISION OF TEACHER EDUCATION AND CERTIFICATION
 - Certification
 - Teacher Education
 - Educational Media Center
- DIVISION OF GUIDANCE AND TESTING
 - Guidance Counseling and Development Services
 - Ohio Testing Services

DIVISION OF REDESIGN AND RENEWAL

- Curriculum Development
- Inservice Education
- Right to Read

DIVISION OF PLANNING AND EVALUATION

- Administrative Section
- Project Development Section

DIVISION OF SPECIAL EDUCATION

- Educable Mentally Retarded
- Physically Handicapped
- Pupil Services

DIVISION OF VOCATIONAL EDUCATION

- Administration and Planning
 - Business and Office Education
- Construction and Equipment
 - Distributive Education
- Research, Survey, Evaluation and Exemplary Programs
 - Home Economics Education
- Special Needs
 - Manpower Development and Training
- Professional Staff and Curriculum Development
 - Trade and Industrial Education
- Programs Training
 - Vocational Agriculture
- Career Development

ASSISTANT SUPERINTENDENT
SCHOOL ADMINISTRATION

DIVISION OF SCHOOL FINANCE

- Driver Education
- Field Services
- Foundation Program
- Pupil Transportation
- School Building

DIVISION OF PERSONNEL, PUBLICATIONS AND LEGAL SERVICES

- Community Education
- Environmental Education
- Legal Counsel
- Mailing and Duplicating
- Publications

OHIO SCHOOL FOR THE DEAF

STATE SCHOOL FOR THE BLIND

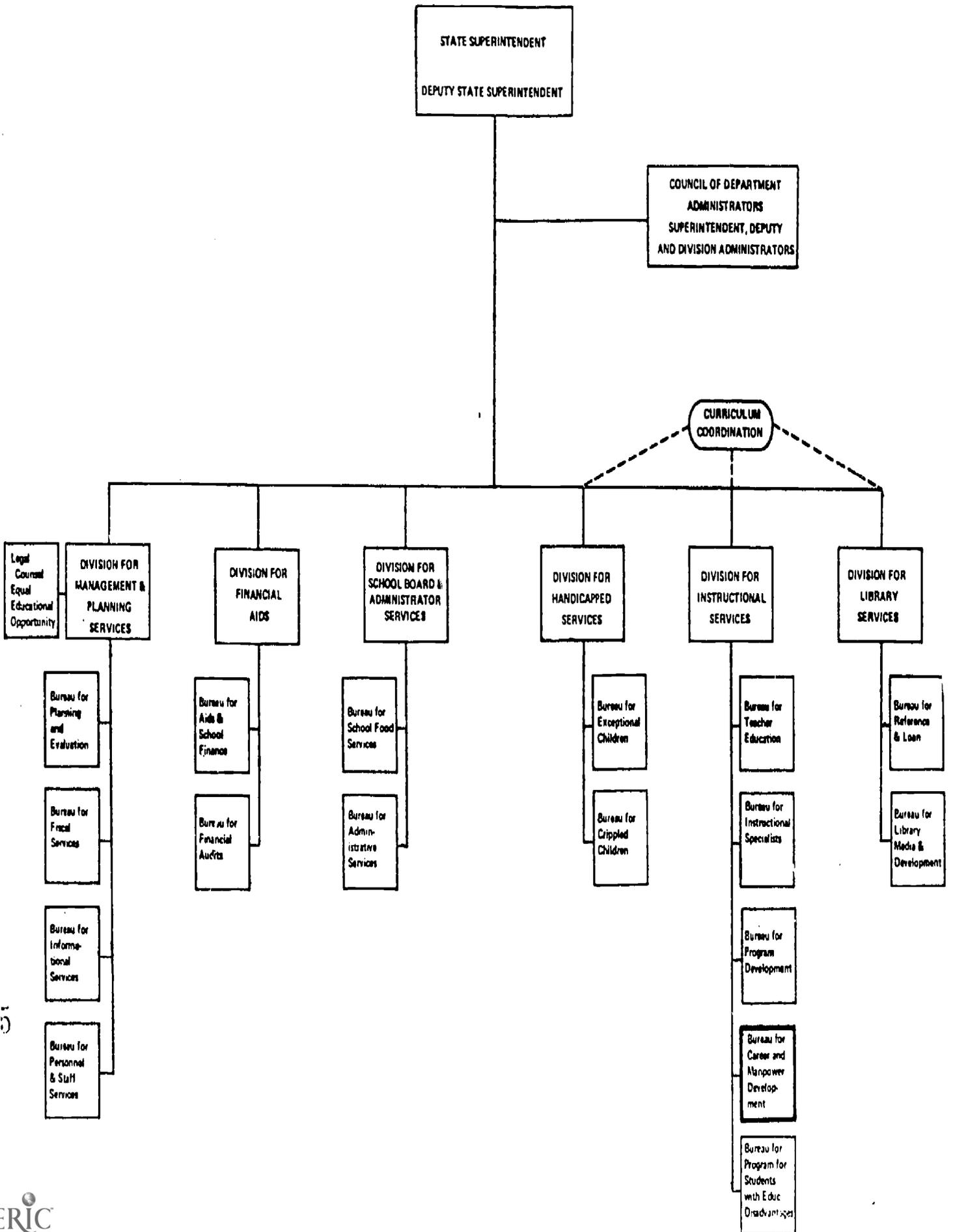
ASSISTANT SUPERINTENDENT
URBAN EDUCATION

- Committee on Urban School Development
- URBAN PROGRAMS
 - Program Coordination and Planning
 - ESEA Title I
 - ESEA Title III
 - ESEA Title VII
 - Student Rights and Responsibilities
 - Improving State Leadership
- MODEL CITIES TECHNICAL ASSISTANCE
- OFFICE OF EQUAL EDUCATIONAL OPPORTUNITY
- AFFIRMATIVE ACTION COMPLIANCE OFFICE
 - Title VI Compliance Assurance
 - Title VII ESAA
 - Title IX

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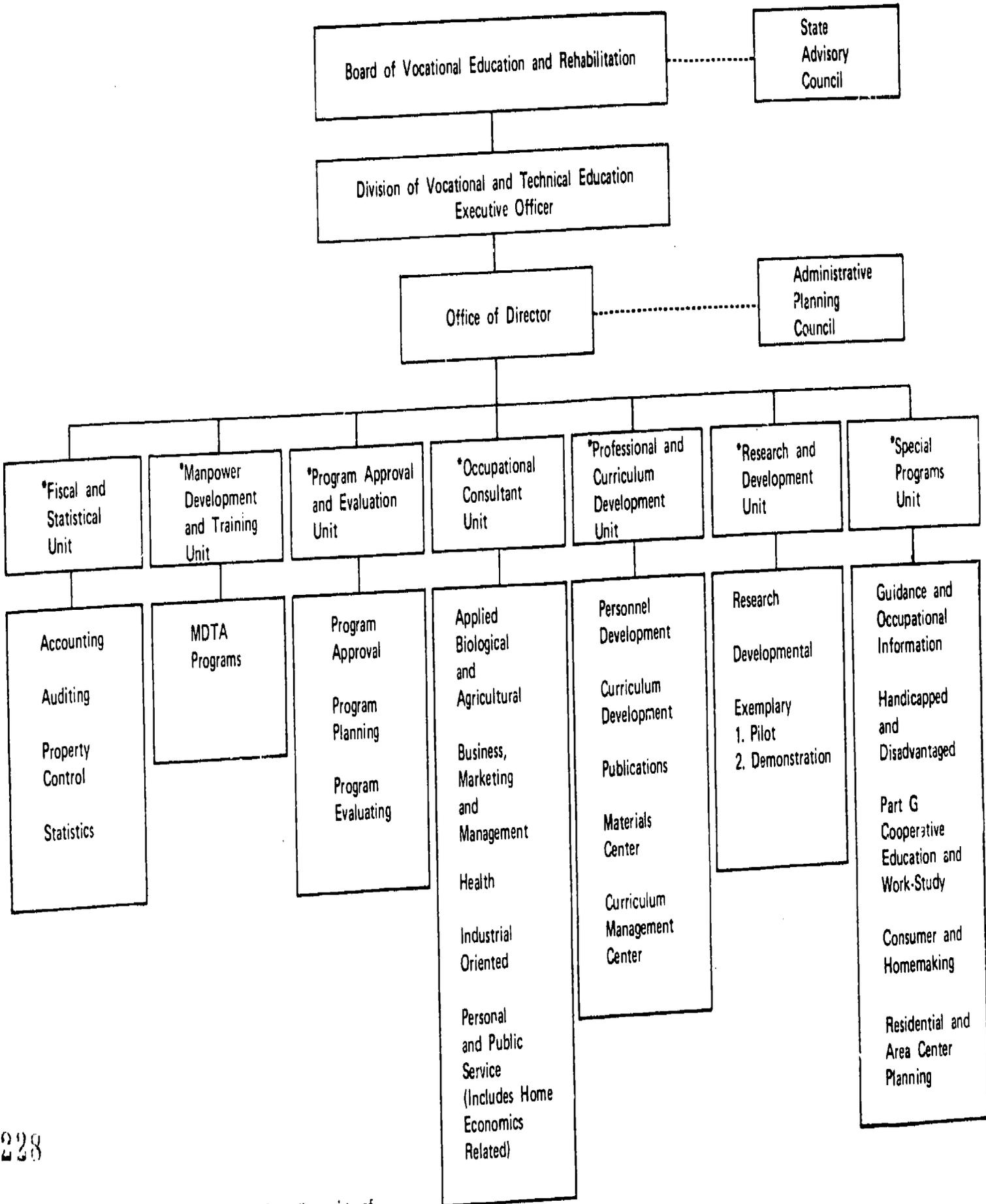
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1. Illinois, Organizational Chart Division of Vocational and Technical Education
2. Indiana, Organizational Chart of the State Board of Vocational and Technical Education
3. Indiana Organizational Chart of Secondary Vocational Education Under the Department of Public Instruction
4. Indiana Functional Chart of the State Department of Public Instruction Division of Vocational Education and the State Board of Vocational and Technical Education
5. Indiana State Board of Vocational and Technical Education Relationship with the Department of Public Instruction and the Commission for Higher Education
6. Iowa State Department of Public Instruction Organizational Chart of Area School and Career Education Branch
7. Michigan Organizational Chart of Vocational-Technical Education Service
8. Minnesota Organizational Chart of Educational Professions Development
9. Minnesota Organizational Chart of the Division of Vocational-Technical Education
10. Organization of Ohio State Board Staff for Vocational Education
11. Wisconsin Organizational Chart for the Wisconsin Board of Vocational, Technical and Adult Education

Illinois Organizational Chart Division of Vocational and Technical Education

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* The Administrative Planning Council consists of Coordinators of Units designated



Indiana Organizational Chart of Secondary Vocational Education Under the
Department of Public Instruction

State Superintendent
Department of Public Instruction

Associate Superintendent
Department of Public Instruction

Director
Division of Vocational Education

Assistant Director

Chief Consultant
Level: ↓

Agri-Bus. Program Area Business Educ. Program Area Distributive Educ. Program Area Health Occup. Program Area Home Econ. Program Area Industrial Educ. Program Area Interdisciplinary Program Area *

Consultant
Level: ↓

230A

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*Includes personnel with disadvantaged and handicapped, interdisciplinary cooperative education, and guidance responsibilities

Indiana Functional Chart

State Department of Public Instruction
Division of Vocational Education

Functions:

Provides services to public school system.

1. Program development services.
2. Program improvement services.
3. Curriculum and materials development.
4. Student leadership organization services.
5. Certification of public school personnel.
6. State Plan input : to public schools.
7. Distribution of state funds to public schools.
8. Approved program monitoring and supervision.
9. Cooperate with State Board staff for program review and evaluation.

- A. Staffing pattern will reflect functions assigned to the Department.
- B. Personnel selection, while requiring conformity to personnel standards established in the State Plan for Vocational Education, will be the responsibility of the State Department of Public Instruction or its designate.
- C. Federal funds may be granted to the Department of Public Instruction for approved services as specified in a contract for administrative services between the State Board and the State Department of Public Instruction.

State Board of Vocational and
Technical Education

Functions:

1. Development of the State Plan for vocational education.
2. State-wide coordination of the vocational education system and all approved programs.
3. Definition of vocational education missions and goals of all public vocational institutions and programs.
4. Needs assessments and projection of fiscal and personnel resource needs.
5. Review of legislative budget requests for vocational-technical purposes (operating and capital) of all state institutions and agencies applying for state funds, and make recommendations to the General Assembly.
6. Program approval for state and federal funds.
7. Receive and distribute federal funds available for vocational education and meet federal requirements.
8. Annually evaluate vocational education activities and report findings.
9. Serve as state approval agency for public post-secondary vocational education desiring federal funds eligibility.
10. Adopt rules and regulations for the operation of vocational education in Indiana.
11. Appoint necessary advisory committees needed to perform duties of the State Board.
12. Contract for necessary services.
13. Employ necessary staff to perform the duties of the State Board.
14. Maintain necessary fiscal and statistical data for required reports, audits and for public information.
15. Provide vocational services to prime sponsors under CETA contract.

- A. Staffing pattern will reflect functions assigned to the State Board.
- B. Personnel selection, while requiring conformity to personnel standards established in the State Plan for Vocational Education, will be the responsibility of the State Board or its designate.
- C. Federal funds will be budgeted for necessary staff services.

Commission for Higher Education

Functions:

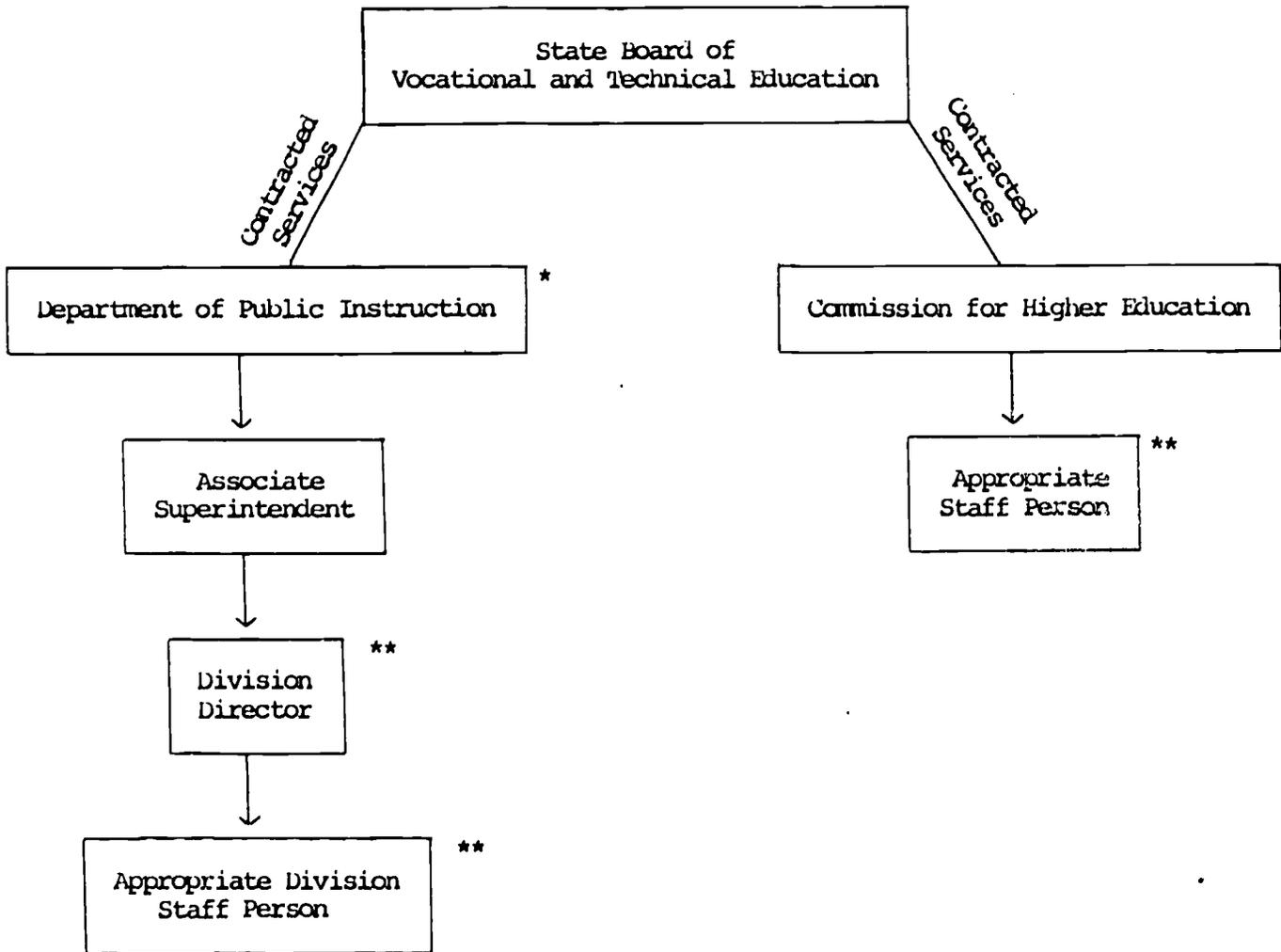
Provides services to post-secondary institutions.

1. State Plan input relative to higher education institutions.
2. Cooperate with State Board for program coordination and fiscal analysis.
3. Cooperate with State Board for program review and evaluation.

- A. Staffing pattern will reflect functions assigned to the Commission.
- B. Personnel selection, while requiring conformity to personnel standards established in the State Plan for Vocational Education, will be the responsibility of the Commission for Higher Education or its designate.
- C. Federal funds may be granted to the Commission for approved services as specified in a contract for administrative services between the State Board and the Commission.

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Indiana
 State Board of Vocational and Technical Education
 Relationship with the Department of Public Instruction
 and the Commission for Higher Education

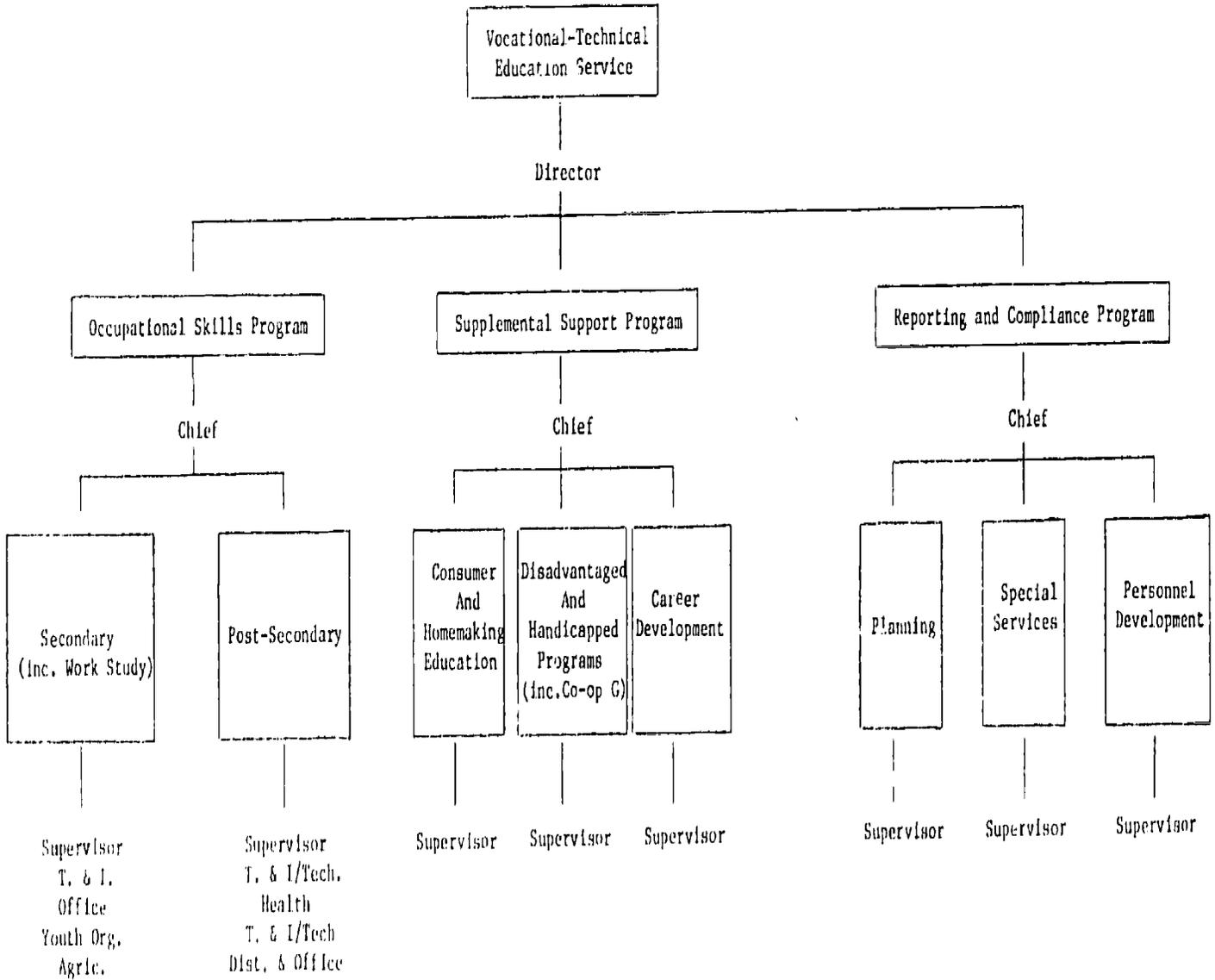


*See page 3b for staff organizational chart

**Personnel providing state administrative, supervisory or consultative services shall meet the qualifications outlined in section 1.31 of this plan

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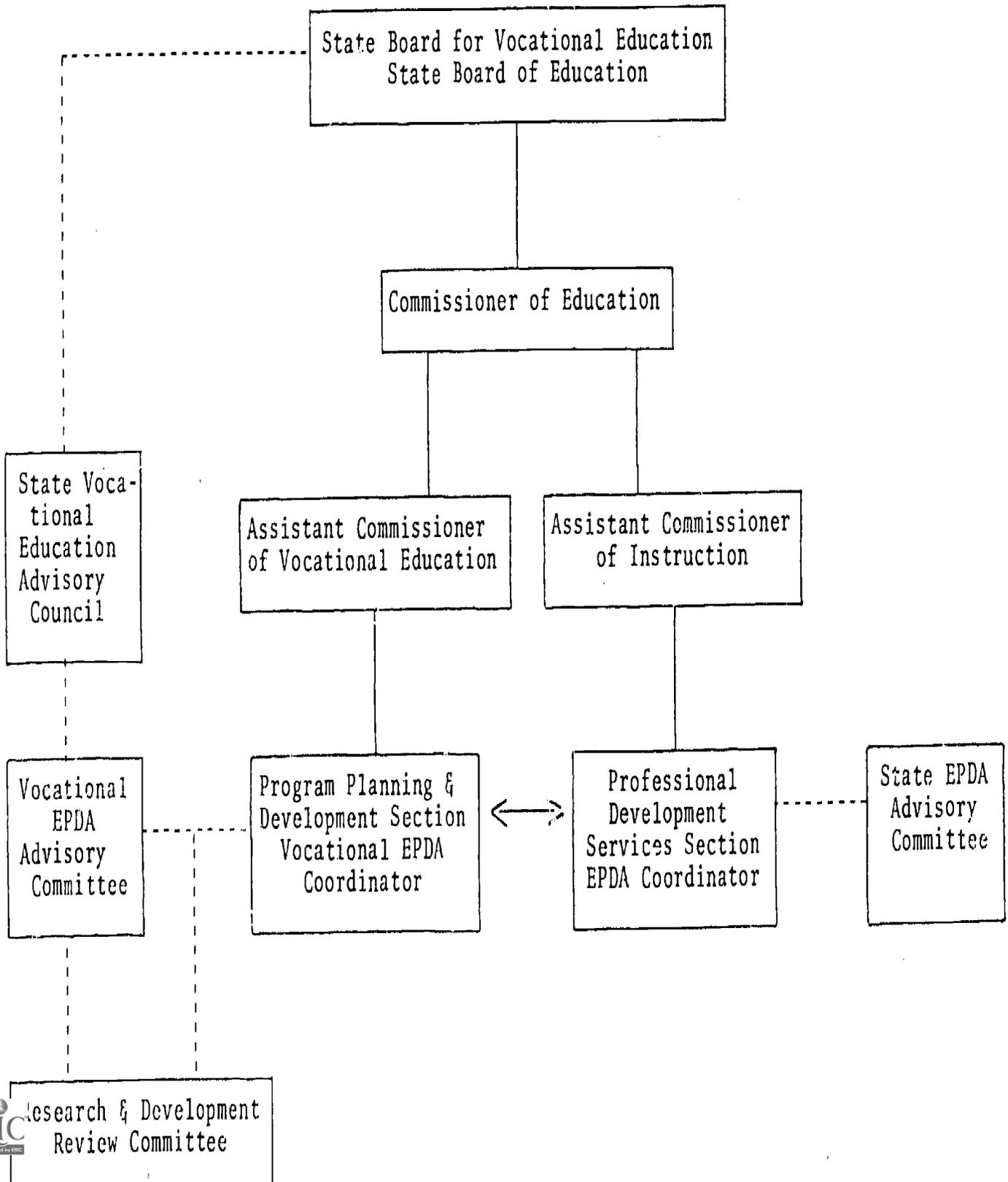
Michigan Organizational Chart of Vocational-Technical Education Service



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Minnesota Organizational Chart of Education
Professions Development



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Minnesota Organization Chart of the Division of Vocational-Technical Education

(Continued)

Assistant Commissioner

└ Coordinator of Funding

Program Operations Section Director

└ Certification Specialist

└ Secondary Vocational-Technical Education Coordinator

└ Secondary Vocational Program Supervisor, Agriculture,
Natural Resources, and Marine Science Occupations

└ Secondary Vocational Program Supervisor, Business and
Office, Fine Arts, and Humanities Occupations

└ Secondary Vocational Program Supervisor, Career Education

└ Secondary Vocational Program Supervisor, Consumer-
Homemaking Occupations

└ Secondary Vocational Program Supervisor, Consumer-
Homemaking Occupations

└ Secondary Vocational Program Supervisor, Environmental
Occupations

└ Secondary Vocational Program Supervisor, Health and
Public Service Occupations

└ Secondary Vocational Program Supervisor, Manufacturing
and Construction Occupations

└ Secondary Vocational Program Supervisor, Marketing and
Distribution, Interrelated Cooperative, and Diversified
Occupations Programs

└ Secondary Vocational Program Supervisor, Personal
Services, Hospitality and Recreation Occupations

└ Secondary Vocational Program Supervisor, Transportation,
Communication and Media, and Industrial Education
Occupations

Post-Secondary Vocational-Technical Education Coordinator

└ Post-Secondary Vocational Program Supervisor, Agriculture
Occupations

└ Post-Secondary Vocational Program Supervisor, Business
and Office Occupations

└ Post-Secondary Vocational Program Supervisor, Health
Occupations

└ Post-Secondary Vocational Program Supervisor, Home
Economics Occupations

└ Post-Secondary Vocational Program Supervisor, Industrial
Occupations

└ Post-Secondary Vocational Program Supervisor, Industrial
Occupations

└ Post-Secondary Vocational Program Supervisor, Marketing
and Distribution Occupations

└ Post-Secondary Vocational Program Supervisor, Technical
Occupations

└ Student Financial Aids Supervisor

Adult Vocational-Technical Education Coordinator

└ Adult Vocational Program Supervisor, Agriculture,
Natural Resources, Marine Science, and Environmental
Occupations

└ Adult Vocational Program Supervisor, Consumer-Homemaking,
Personal Services, Hospitality, Recreation, and Health
Occupations

└ Adult Vocational Program Supervisor, Marketing and
Distribution, Communication and Media, Business and
Office, Fine Arts, and Humanities Occupations

└ Adult Vocational Program Supervisor, Transportation,
Manufacturing, Public Service, Construction Occupations,
and Home-Study Programs

Field Instructor, Firemanship Instruction

Field Instructor, Municipal Utilities

Field Instructor, Municipal Utilities

Field Instructor, Municipal Utilities

Field Instructor, Power Lineman Instruction

Field Instructor, Power Lineman Instruction

Field Instructor, Power Lineman Instruction

Field Instructor, Rescue Squad Training

Field Instructor, Rescue Squad Training

Field Instructor, Rescue Squad Training

Field Instructor, Stationary Engineering

Field Instructor, Waste-Water Treatment Operator Training

Field Instructor, Water Treatment Operator Training

Vocational-Technical Education Special Needs Programs

└ Coordinator

Vocational-Technical Education Programs for the Handicapped

└ Coordinator

Program Evaluation Section Director

└ Private Vocational School Supervisor

└ Private Vocational School Assistant Supervisor

└ Private Vocational School Assistant Supervisor

Evaluation Supervisor

└ Evaluation Consultant

Veterans Supervisor

└ Veterans Assistant Supervisor

└ Veterans Assistant Supervisor

└ Veterans Assistant Supervisor

└ Veterans Assistant Supervisor

Program Planning and Development Section Director

└ Program Planning and Development Consultant

└ Teacher Education Consultant

└ Public Information Officer

Special Programs and Services Section Director

└ Manpower Development Training Supervisor

└ Manpower Development Training Consultant

└ Manpower Development Training Consultant

└ Manpower Development Training Consultant

└ Manpower Development Training Accountant

└ Manpower Development Training Auditor

└ Equipment Utilization Consultant

└ Equipment Utilization Specialist

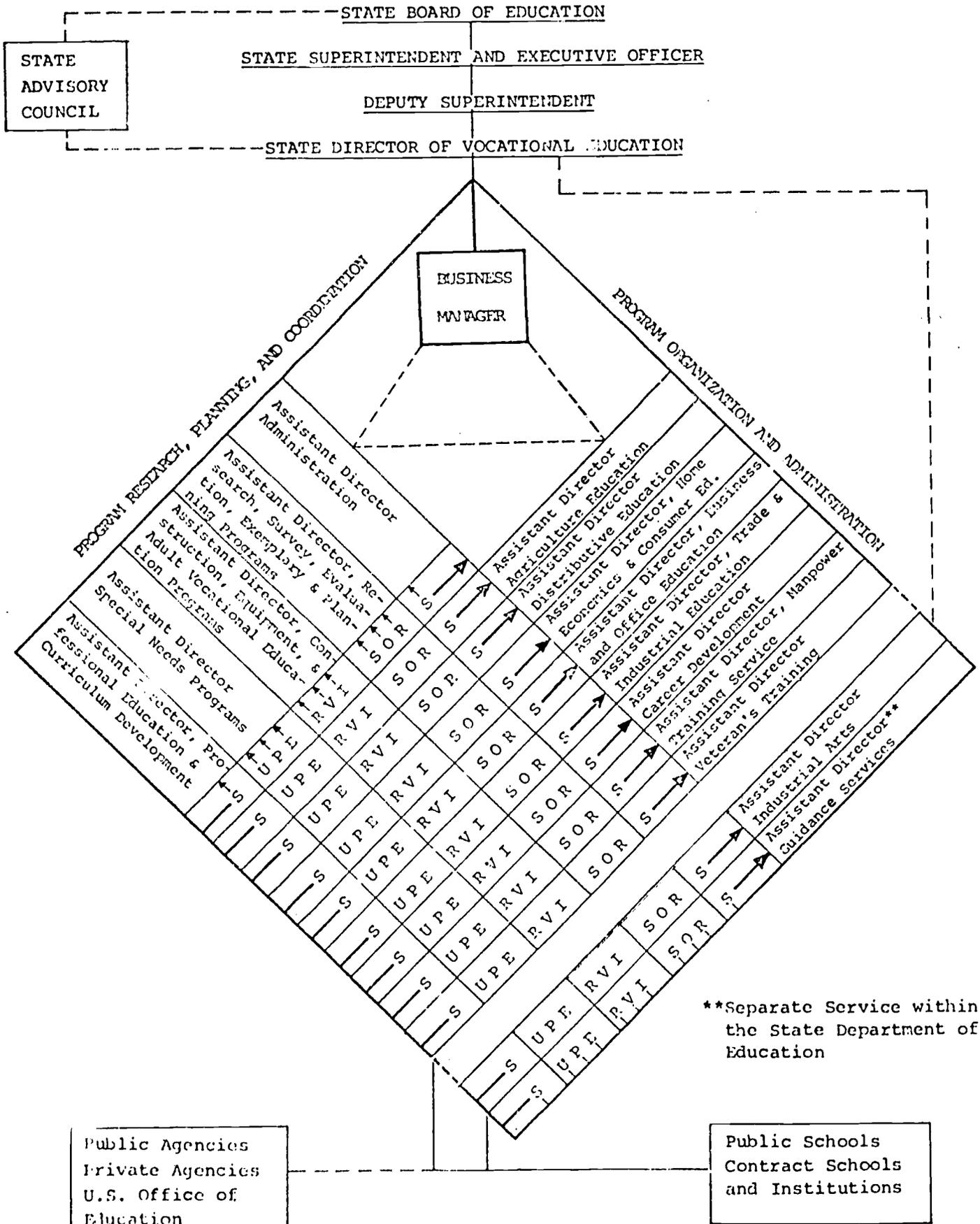
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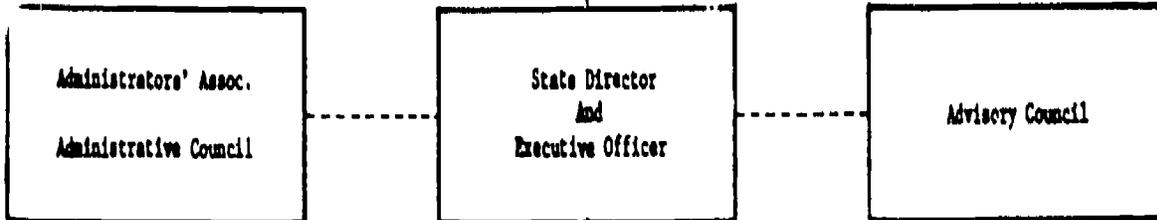
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ORGANIZATION OF OHIO STATE BOARD STAFF FOR VOCATIONAL EDUCATION



WISCONSIN BOARD OF VOCATIONAL, TECHNICAL AND ADULT EDUCATION

1 Commissioner, Department of Industry, Labor and Human Relations	3 Employers 3 Employees 3 Farmers	1 President U.W. Board of Regents 1 Supt. of Public Instruction
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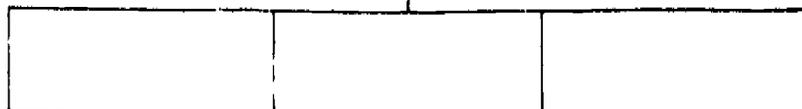
Educational
Approval Board

Information
Analysis

State and
Federal Affairs

Division Of
Community And
Manpower Education

Division Of
Administration And Planning



Bureau Of
Program
Development

ERIC
Full Text Provided by ERIC

Bureau Of
Program
Accountability

Bureau Of
Research, Professional
& Student Development

Bureau Of
Community and Special
Project Coordination

Bureau Of
Administrative
Services

Bureau Of
Planning And
Budget

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APPENDIX C

1. Illinois State Legislation Effecting Vocational Education Delivery
2. Indiana State Legislation Effecting Vocational Education Delivery
3. Iowa State Legislation Effecting Vocational Education Delivery
4. Michigan State Legislation Effecting Vocational Education Delivery
5. Minnesota State Legislation Effecting Vocational Education Delivery
6. Ohio State Legislation Effecting Vocational Education Delivery
7. Wisconsin State Legislation Effecting Vocational Education Delivery

Illinois State Legislation Effecting Vocational Education Delivery

VOCATIONAL EDUCATION

§ 694. Federal Vocational Education Law—Acceptance of**Title of Act:**

An Act in relation to vocational education. July 9, 1951, L. 1951, p. 1201 and by P.A. 79-1175, § 3, eff. Dec. 18, 1975.

§ 695. Board of Vocational Education and Rehabilitation

Text of section effective until July 1, 1976.

There is hereby established the Board of Vocational Education and Rehabilitation hereinafter referred to as the Board in the Office of the Superintendent of Public Instruction. The Board shall consist of the Director of Registration and Education, the Superintendent of Public Instruction, the Director of Agriculture, the Director of Children and Family Services, the Director of Labor, the Director of Mental Health and Developmental Disabilities, the Director of Public Health, and 6 members to be appointed by the Governor.

The Governor shall designate the chairman of the Board. The Board shall employ a Director of Vocational Rehabilitation who shall be the executive officer of the Board for all of its work pertaining to vocational rehabilitation according to the provisions of "An Act in relation to vocational rehabilitation of disabled persons", approved June 29, 1921, as amended.¹

The Superintendent of Public Instruction shall be the executive officer for all of its work pertaining to Vocational and Technical Education, with responsibility to represent the Board in administration of its plans and programs for vocational and technical education.

The Director of Registration and Education, the Director of Agriculture, the Director of Children and Family Services, the Director of Labor, the Director of Mental Health and Developmental Disabilities, the Director of Public Health, and the Superintendent of Public Instruction, may serve as members of the Board during the respective terms of office for which they shall have been appointed or elected, or may, by official order file in the Office of the Secretary of State, appoint a qualified assistant or other subordinate in his department who shall have the power and the duties of the member appointing him.

Amended by 1963, June 4, Laws 1963, p. 1053, § 1; P.A. 76-1172, § 1, eff. Sept. 4, 1969; P.A. 78-092, § 43, eff. Oct. 1, 1974.

¹ Chapter 23, § 3431 et seq.

Repealed effective July 1, 1976.

Section 6 of P.A. 79-1175, certified Dec. 18, 1975, provided:

"This amendatory Act of 1975 shall take effect upon July 1, 1975 or upon its becoming a law, whichever is later, provided, however, that Section 1 of this Act [repealing this section and § 696 of this chapter] and the amendments in Section 4 of this Act to Sections 1, 2 and 3 of "An Act in relation to vocational rehabilitation of disabled persons", approved June 28, 1921, as amended, shall take effect on July 1, 1976, and that, in order to assure an orderly transition of responsibilities to the Board of Vo-

national Rehabilitation, provided for by the new Section 1, added in Section 4 of this Act, to "An Act in relation to vocational rehabilitation of disabled persons", approved June 28, 1921, as amended, the Board established by Section 2 of "An Act in relation to vocational education and vocational rehabilitation of disabled persons", approved March 6, 1919, as amended, shall continue to exercise its functions in relation to vocational rehabilitation until July 1, 1976."

This section was repealed by P.A. 79-1175, § 1, effective July 1, 1976.

696. Compensation and expenses of board members.] § 3. The members of the Board or their representatives shall serve without compensation, but they shall be reimbursed for their actual and necessary expenses incurred in the discharge of duties under the provisions of this Act. As amended by act approved June 4, 1963. L.1963, p. 1053.

697. Powers and duties of board.] § 4. The Board shall have power and it shall be its duty:

(a) To co-operate with the federal government in the administration of the provisions of the Federal Vocational Education Law,¹ to the extent and in the manner therein provided;

(b) To promote and aid in the establishment of schools and classes of the types and standards provided for in the plans of the Board, as approved by the federal government, and to co-operate with State agencies maintaining such schools or classes and with State and local school authorities in the maintenance of such schools and classes;

(c) To conduct and prepare investigations and studies in relation to vocational education and to publish the results of such investigations and studies;

(d) Upon the recommendation of the executive officer for vocational and technical education to appoint, without reference to any civil service law which is now or which hereafter may be in force in this State, a Director of Vocational and Technical Education and such professional and technical assistants as may be necessary in his division and to prescribe their duties, compensation and terms of employment;

(e) Upon the recommendation of the executive officer for Vocational and Technical Education to appoint, without reference to the provisions of any civil service law which is now or which hereafter may be in force in this State, such clerks and stenographers and other employees as may be necessary in his division and to prescribe their duties, compensation and terms of employment;

(f) To promulgate reasonable rules and regulations relating to the enforcement of the provisions of this Act;

(g) To report, in writing, to the Governor, annually on or before the first day of December, and at such other times and in such manner and upon such subjects as the Governor may require. The annual report shall contain (1) a statement of the extent to which vocational education has been established and maintained in the State; (2) a statement of the existing condition of vocational education in the State; (3) a statement of suggestions and recommendations with reference to the development of vocational education in the State; and (4) an itemized statement of the amounts of money received from Federal and State sources, and of the objects and purposes to which the respective items of these several amounts have been devoted; and

(h) To make such reports to the federal government as may be required by the provisions of the Federal Vocational Education Law, and by the rules and regulations of the federal agency administering the Federal Vocational Education Law.

(i) To furnish financial assistance to deserving blind or deaf residents of Illinois who are regularly enrolled students, pursuing a course of study in a university, college, conservatory of music or a normal, professional or vocational school. The amount of aid to any student shall not, under ordinary circumstances exceed \$400 per annum, but where the board may consider that added assistance is necessary, the amount may be increased to \$1000 per annum. Money so furnished shall be expended under the direction and supervision of the board

ADULT EDUCATION ACT

Act of Aug. 14, 1967

Art.		Sec.
I. Short Title—Construction	201—1
II. Superintendent of Public Instruction	...	202—1
III. Apportionment	203—1

AN ACT in relation to adult and continuing education in the State of Illinois. Approved Aug. 14, 1967. L.1967, p. 3066.

Be it enacted by the People of the State of Illinois, represented in the General Assembly:

ARTICLE I. SHORT TITLE—CONSTRUCTION

- Sec.
 201—1. Short title.
 201—2. Construction.
 201—3. Definitions.

201—1. § 1-1. Short Title.) This Act shall be known and may be cited as The Adult Education Act.

201—2. § 1-2. Construction.) The provisions of this Act, so far as they are the same as those of any prior statute, shall be construed as a continuation of such prior provisions, and not as a new enactment.

201—3. § 1-3. Definitions.) The following terms shall have the meanings respectively prescribed for them, except as the context otherwise requires:

(a) "Adult and Continuing Education": Organized, systematic instruction, and related educational services, for students enrolled in a program conducted by a publicly supported educational institution. Such students are beyond compulsory education age, not currently enrolled in a regular elementary or high school, and are not seeking junior college or college credit toward an associate degree or degree. The instruction may be full-time or part-time for the purpose of providing students or groups with opportunities for personal improvement and enrichment, preparation for effective participation as citizens (including English for foreign-speaking individuals), family life and parent education, elementary and high school education, for which credit may be granted toward diploma requirements, occupational and technical training and retraining.

ARTICLE II. SUPERINTENDENT OF PUBLIC INSTRUCTION

- Sec.
 202—1. Contracting with other state agencies.
 202—2. Agreement with public or private agencies.
 202—3. Adult and Continuing Education Council.

202—1. § 2-1. Contracting with other state agencies.) For the purpose of promoting and establishing special classes for the instruction (1) of persons of age 21 or older and (2) of persons less than age 21 and not otherwise in attendance in the public schools, the Superintendent of Public Instruction may contract with other state agencies to accept and expend appropriations given such agencies for educational purposes to reimburse the junior college district or local school district for the cost of such program.

202—2. § 2-2. Agreement with public or private agencies.) If in the judgment of the Superintendent of Public Instruction a school district or junior college district is failing to provide or is providing unsatisfactory or insufficient classes for the instruction or training of adults and youths whose schooling has been interrupted, pursuant to the provisions of Section 10-22.20 of "The School Code," approved, March 18, 1961, as amended, he may enter into agreements with public or private welfare, educational, or other agencies, other than the public common schools, competent to provide the education or training defined in said Section, for the establishment of such special classes by such agencies.

The Superintendent of Public Instruction shall establish the standards for such courses of instruction and supervise the administration thereof. He shall determine the cost of such instruction, including therein such incidental costs of student transportation, facilities, or provision for child care for students who are parents, and other special needs of the students, as authorized by Section 10-22.20 of The School Code.

The provisions of Section 10-22.20 of The School Code respecting the reimbursement of the total cost of such instruction or training by the Bureau of Employment Security in the Illinois Department of Labor for students who may be authorized under the Illinois Public Aid Code, approved April 11, 1967,² shall be applicable to classes established under this Act. Each agency entering into an agreement shall keep accurate and detailed accounts of students assigned to it and receiving instruction in such special classes and submit claims for reimbursement in the manner provided for school districts or junior college districts under said Section 10-22.20, and claims for reimbursement shall be processed as therein provided.

Any such agreement may be terminated by the Superintendent of Public Instruction when he determines (1) that such classes are no longer necessary, or (2) that the instruction or training established by an agency fails to meet the established standards, or (3) that the classes established by a school district or junior college district, within whose geographical limits the agency is located, pursuant to Section 10-22.20 of The School Code, are adequate for the purpose.

Amended by P.A. 77-346, § 1, eff. July 22, 1971.

202-3. § 2-3. Adult and Continuing Education Council.) An Adult and Continuing Education Council is established and shall consist of 12 members. The State Librarian, the State Historian, the Director of the Illinois State Museum, the Executive Director of the Board of Higher Education, and the Executive Secretary of the Illinois Junior College Board shall serve as members. The Director of Children and Family Services, the Director of Corrections, the Director of Mental Health, the Director of Public Aid, the Director of Public Health, the Director of Vocational Rehabilitation and the Superintendent of Public Instruction shall serve as ex officio members of the Council. Any such ex officio member of the Council may designate an individual employed by his Department to serve in his place and represent his Department on the Council. All members of the Council shall serve without compensation but shall be reimbursed for necessary expenses incurred in performing their duties.

The Council shall coordinate Adult and Continuing Education in the State of Illinois so as to provide a more uniform and complete program and so as to coordinate funding and accounting activities of such agencies involved.

The Council shall select a Chairman and establish rules and procedures for its proceedings not inconsistent with the provisions of the Act. The Council shall meet at least 4 times a year. Amended by P.A. 77-1094, § 1, eff. Aug. 17, 1971.

203-1. § 3-1. Apportionment for Adult Education Courses.) Any school district or junior college district maintaining adult education classes for the instruction of persons over 21 years of age and youths under 21 years of age whose schooling has been interrupted shall be entitled to claim an apportionment for each school year ending on June 30, of \$3.50 for each 40 minute period of approved classroom instruction.

Reimbursement as herein provided shall be limited to courses regularly accepted for graduation from elementary or high schools and for Americanization and General Educational Development Review classes which are approved by the Superintendent of Public Instruction.

Each school district or junior college district entitled to a claim for the instruction of persons over 21 and youths under 21 whose schooling has been interrupted shall submit its claim to the county superintendent of schools not later than August 1, of each year for apportionment due for the preceding school year upon blanks prepared and furnished by the Superintendent of Public Instruction. The County superintendent of schools shall prepare and

certify to the Superintendent of Public Instruction not later than August 15, of each year the county report of classes for persons over 21 and youths under 21 whose schooling has been interrupted claims for state aid. The Superintendent of Public Instruction shall prepare and certify to the State Comptroller not later than September 5 of each year the State report of claims for classes for persons over 21 and youths under 21 whose schooling has been interrupted aid and vouchers setting forth the amount of money due each school district. The Comptroller shall cause his warrants to be drawn for the respective amounts due by September 15, of each year payable to the county superintendent of schools having supervision and control of the respective districts submitting such claims. If the amount appropriated for this purpose is less than the amount required under the provisions of this Section, the apportionment for each school district or junior college district shall be proportionately reduced. Amended by P.A. 78-592, § 45, eff. Oct. 1, 1973.

203-2. § 3-2. Agreements by Boards of Education.) Two or more Boards of Education or Junior College Boards may provide by agreement, adopted by resolution of the participating boards, for the joint employment of a Director of Adult Education, for an adult education program, and for utilization of buildings, equipment, and other school facilities under the control of one or more of the participating boards. Such an agreement shall direct one of the Board of Education or Junior College Boards to receive and disburse funds and to administer the program for the benefit of all participating school districts or junior college districts.

Indiana State Legislation Effecting Vocational Education Delivery

PUBLIC LAW NO. 227

[S. 85. Approved April 24, 1975.]

AN ACT to amend IC 1971, 20-1-1; IC 1971, 20-12.0.5; and IC 1971, 20-1 by adding a new chapter; all concerning vocational education and repealing IC 1971, 20-1-18, as amended, except for IC 1971, 20-1-18-7.

Be it enacted by the General Assembly of the State of Indiana:

SECTION 1. IC 1971, 20-1 is amended by adding a new chapter to be numbered 18.1 and to read as follows:

Chapter 18.1. State Board of Vocational and Technical Education.

Sec. 1. Definitions. As used in this chapter:

- (a) "board" means the state board of vocational and technical education.
- (b) "vocational education" means any educational program of vocational, occupational, manpower, or technical training and retraining that enhances an individual's career potential, encompassing secondary levels (9-12 grades) and post-secondary levels through the associate degrees of competency.

Sec. 2. Membership. The governor shall appoint the following members to the board:

- (1) the state superintendent of public instruction (ex-officio);
- (2) the executive officer of the commission for higher education (ex-officio);
- (3) a member of the state board of education;
- (4) a member of the commission for higher education;
- (5) a member of a governing board of a secondary vocational institution;
- (6) a member of a governing board of a post-secondary vocational institution;
- (7) a member representing secondary vocational administration;

- (8) a member representing post-secondary vocational administration;
- (9) a member representing labor;
- (10) a member representing business, and
- (11) a member representing agriculture.

Of the initial appointments, except ex-officio appointments, the governor shall appoint one (1) for a one (1) year term, two (2) for two (2) year terms, three (3) for three (3) year terms, and three (3) for four (4) year terms. All subsequent appointments shall be for four (4) years. The governor shall promptly make an appointment to fill any vacancy for the duration of the unexpired term.

Sec. 3. Organization. The chairmanship and the vice-chairmanship of the board shall alternate annually between the state superintendent of public instruction and the executive officer of the commission for higher education. The superintendent shall assume the chairmanship the first year and shall call the first meeting of the board before July 1, 1975. Each member is entitled to be reimbursed per diem and mileage for attendance at meetings of the board and for necessary expenses incurred on other official duties subject to the approval of the state budget agency.

Sec. 4. The board shall have the following powers and duties:

- (1) Planning and Coordination. The board shall coordinate all programs of public vocational education as it is defined in this chapter. The board shall develop the annual state plan for vocational education defining the educational missions and goals of all public vocational institutions and programs, projecting job opportunities, as well as fiscal and personnel resources. The plan shall give due consideration to the private vocational sector of the state and shall meet federal regulations concerning the distribution of federal funds in vocational education. The plan shall be prepared annually for the governor, the general assembly, and the appropriate federal agency.
- (2) Budget Review. Before each legislative session, the board shall review the legislative budget requests, operating

and capital, of all state institutions and agencies applying for state funding of vocational education and shall make recommendations to the general assembly concerning state appropriations for vocational education.

(3) Program Review. Before any vocational program is eligible for federal or state funds, the board must approve the program, though an institution may apply for funds prior to program approval.

(4) Federal Funds. The board shall serve as the state agency for purposes of receiving and distributing federal funds available for vocational education within the state.

(5) Evaluation and Accreditation. The board shall annually evaluate vocational education activities in the state and shall report their findings to the governor and to the general assembly. Subject to federal recognition, the board shall serve as the state approval agency for a public post-secondary institution or a program of vocational education which desires eligibility for receipt of federal funds and is not otherwise accredited by a federally recognized authority.

(6) Rules and Committees. The board may adopt such rules and regulations under IC 1971, 4-22-2 and may appoint such advisory committees as it deems necessary to perform the duties imposed by this chapter.

(7) Contracts. The board may contract for such services as it deems necessary to exercise the powers authorized in this chapter.

Sec. 5. Staff. The board shall employ an executive officer, designated state director of vocational education, and any staff as it may deem necessary to perform the duties imposed by this chapter and shall fix the compensation and terms of their employment, subject to approval by the state budget agency. The board's staff shall serve as liaison between the vocational staff of the state department of public instruction and the vocational staff of the commission for higher education, but no board staff member may be an employee of any other state institution or agency.

Sec. 6. Restriction. The board has no power relating to the management, operation, and financing of any state institution or agency except those specifically set forth in this chapter.

Iowa State Legislation Effecting Vocational Education Delivery
CHAPTER 258

VOCATIONAL EDUCATION

Referred to in secs. 257.10, subsection 10, 282.7, 268.4, subsection 3

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|---|---|
| <p>258.1 Federal Act accepted.
258.2 State board for vocational education.
258.3 Personnel.
258.4 Duties of board.
258.5 Federal aid---conditions.
258.6 Definitions.
258.7 Advisory committee---qualifications---
tenure---meetings.</p> | <p>258.8 Vocational education aid
fund---appropriation.
258.9 Local advisory committee.
258.10 Powers of district boards.
258.11 Salary and expenses.
258.12 Custodian of funds---reports.
258.13 Biennial report.
258.14 Vocational youth organization fund.</p> |
|---|---|

258.1 Federal Act accepted. The provisions of the Act of Congress entitled "An Act to provide for the promotion of vocational education; to provide for co-operation with the states in the promotion of such education in agriculture and in the trades and industries; to provide for co-operation with the states in the preparation of teachers of vocational subjects; and to appropriate money and regulate its expenditure", approved February 23, 1917, [39 Stat. L. 929, 20 U.S.C., ch 2] and all amendments thereto and the benefit of all funds appropriated under said Act and all other Acts pertaining to vocational education, are accepted. [C24, 27, 31, 35, 39, sec. 3837; C46, 50, 54, 58, 62, sec. 258.1]

258.2 State board for vocational education. The state board of public instruction shall constitute the board for vocational education. [C24, 27, 31, 35, 39, sec. 3838; C46, 50, 54, 58, 62, sec. 258.2]

258.3 Personnel. The superintendent of public instruction as executive officer of the state board of public instruction shall, with its approval, appoint, and direct the work of such personnel as may be necessary to carry out the provisions of this chapter [C24, 27, 31, 35, 39, sec. 3839; C46, 50, 54, 58, 62, sec. 258.3]

258.4 Duties of board. The board shall:

1. Co-operate with the federal board for vocational education in the administration of said Act of Congress.
2. Provide for making studies and investigations relating to prevocational and vocational training in agricultural, industrial, and commercial subjects, and home economics.
3. Promote and aid in the establishment in local communities and public schools of departments and classes giving instruction in such subjects.
4. Co-operate with local communities in the maintenance of such schools, departments, and classes.
5. Establish standards for teachers of such subjects in approved schools, departments, and

classes.

6. Co-operate in the maintenance of teachers training schools, departments, and classes, supported and controlled by the public, for the training of teachers and supervisors of such subjects.

7. Establish standards for, and annually inspect as a basis of approval, all schools, departments, and classes, area vocational technical high schools and programs, area vocational schools and programs and all teachers training schools, departments, and classes, applying for federal and state moneys under the provisions of this chapter. [C24, 27, 31, 35, 39, sec. 3840; C46, 50, 54, 58, 62, sec. 258.4; 61GA, ch 247, sec. 34]

Part-time schools, ch 289

258.5 Federal aid---conditions. Whenever a school corporation maintains an approved vocational school, department, or classes in accordance with the rules and regulations established by the state board and the state plan for vocational education, adopted by that board and approved by the United States office of education or other federal agency to which its functions are assigned, the state board shall reimburse such school corporation at the end of the fiscal year for its expenditures for salaries and authorized travel of vocational teachers from federal and state funds: Provided, that no school corporation shall receive from federal and state funds a larger amount than one-half the sum which has been expended by the school corporation for that particular type of program; further, provided that in the event federal and state funds are not sufficient to make such reimbursement to the extent herein provided, the state board shall prorate the respective amounts available to the corporations entitled to such reimbursement.

The state board shall have the authority to use federal funds to reimburse approved teacher training schools, departments, or classes for the training of teachers of agriculture, home economics, trades and industrial education, distributive education, and for the training of guidance counselors. [C24, 27, 31, 35, 39, secs. 3841, 3844; C46, 50, secs. 258.5, 258.8;

258.5, VOCATIONAL EDUCATION

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C54, 58, 62, sec. 258.5; Ch. 1025 (S.F. 1083), sec. 14, 63 G.A.(2)]

258.6 Definitions. "Approved school, department, or class" shall mean a school, department, or class approved by said board as entitled under the provisions of this chapter to federal and state moneys for the salaries and authorized travel of teachers of vocational subjects. "Approved teachers training school, department, or class" shall mean a school, department, or class approved by the board as entitled under the provisions of this chapter to federal moneys for the training of teachers of vocational subjects. [C24, 27, 31, 35, 39, sec. 3842; C46, 50, 54, 58, 62, sec. 258.6]

258.7 Advisory council. There is hereby established a state advisory council for vocational education, consisting of thirteen members, which shall be appointed by the governor. The term of each member shall be for three years, except that for the initial appointments the governor shall specify the terms of each member so that as nearly as possible, the terms of an equal number of members shall expire on the first day of July of each year.

The advisory council shall serve in an advisory capacity to the state board and shall perform such functions as may be necessary in order for the state of Iowa to qualify for federal aids and grants to vocational education.

The advisory council shall include members who are:

1. Familiar with the vocational needs and the problems of management and labor in the state.
2. Representative of state industrial and economic development agencies.
3. Representative of community and junior colleges and other institutions of higher education, area vocational schools, technical institutes, and postsecondary or adult education institutions, which provide programs of vocational or technical education and training.
4. Familiar with the administration of state and local vocational education programs.
5. Persons having special knowledge, experience, or qualifications with respect to vocational education and who are not involved in the administration of state or local vocational education programs.
6. Familiar with programs of technical and vocational education, including programs in comprehensive secondary schools.
7. Representative of local educational agencies.
8. Representative of school boards.
9. Representative of manpower and vocational education agencies in the state, including the comprehensive area manpower planning system of the state.
10. Representative of school systems with large concentrations of academically, socially,

economically, and culturally disadvantaged students.

11. Persons having special knowledge, experience, or qualifications, with respect to the special educational needs of physically or mentally handicapped persons.

12. Representative of the general public, and not qualified for membership under the preceding subsections, including a person representative of and familiar with the problems of the poor and disadvantaged.

13. Representative of prospective employers of vocationally trained students.

The council shall meet at the call of the chairman at least once each quarter of the year. [Ch. 176(S.F. 544), sec. 1, 63dG.A.]

258.8 Vocational education fund—appropriation. REPEALED 63 G.A., Ch. 39 (S.F. 622), sec. 2.

258.9 Local advisory committee. The board of directors of any school district having a population of more than five thousand persons, maintaining a school, department, or class receiving the benefit of federal moneys under the provisions of this chapter shall, as a condition of approval by such state board as herein provided, appoint a local advisory committee for vocational education, consisting of persons of experience in agriculture, industry, home economics, and business, to give advice and assistance to such board of directors in the establishment and maintenance of such schools, departments, and classes. The state board may require the board of directors of any school district that maintains an approved school, department, or class, to appoint such an advisory committee. Members of such advisory committee shall serve without compensation. [C24, 27, 31, 35, 39, sec. 3845; C46, 50, 54, 58, 62, sec. 258.9]

258.10 Powers of district boards. The board of directors of any school district is authorized to carry on prevocational and vocational instruction in subjects relating to agriculture, commerce, industry, and home economics, and to pay the expense of such instruction in the same way as the expenses for other subjects in the public schools are now paid. [C24, 27, 31, 35, 39, sec. 3846; C46, 50, 54, 58, 62, sec. 258.10]

258.11 Salary and expenses. The board is authorized to make such expenditures for salaries of assistants, actual expenses of the board and the state advisory committee incurred in the discharge of their duties, and such other expenses as in the judgment of the board are necessary to the proper administration of this chapter. [C24, 27, 31, 35, 39, sec. 3847; C46, 50, 54, 58, 62, sec. 258.11]

258.12 Custodian of funds—reports. The

treasurer of state shall be custodian of the funds paid to the state from the appropriations made under said Act of Congress, and shall disburse the same on vouchers audited as provided by law. He shall report the receipts and disbursements of said funds to the general assembly at each biennial session. [C24, 27, 31, 35, 39, sec. 3848, C46, 50, 54, 58, 62, sec. 258.12]

258.13 Biennial report. The superintendent of public instruction shall embrace in his biennial report a full report of all receipts and expenditures under this chapter, together with such observations relative to vocational education as may be deemed of value [C24, 27, 31, 35, 39, sec. 3849; C46, 50, 54, 58, 62, sec. 258.13]

VOCATIONAL EDUCATION, 258.14

258.14 Vocational youth organization fund

1. There is created within the office of the treasurer of state a vocational youth organization fund. Moneys deposited in the fund shall be used to develop leadership in the youth of Iowa who are enrolled in vocational and occupational education programs and to encourage the youth of Iowa to pursue vocational and occupational education.

2. The board for vocational education is authorized to award grants from the vocational youth organization fund to the following organizations: distributive education clubs of America, future farmers of America, office education clubs of America, and vocational industrial clubs of America. No moneys shall be used for salaries and travel of state or local advisors of vocational educational organizations. No vocational organization shall receive more than one-fifth of the moneys appropriated to the vocational youth organization fund in any year. [65G.A., Ch.10 (S.F. 586), sec 4]

AREA VOCATIONAL SCHOOLS AND COMMUNITY COLLEGES

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|---------|-------------------------------------|---------|--------------------------------------|
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280A.1 Statement of policy. It is hereby declared to be the policy of the state of Iowa and the purpose of this chapter to provide for the establishment of not more than seventeen areas which shall include all of the area of the state and which may operate either area vocational schools or area community colleges offering to the greatest extent possible, educational opportunities and services in each of the following, when applicable, but not necessarily limited to:

1. The first two years of college work including preprofessional education.
2. Vocational and technical training.
3. Programs for in-service training and retraining of workers.
4. Programs for high school completion for students of post-high school age.
5. Programs for all students of high school age who may best serve themselves by enrolling for vocational and technical training while also enrolled in a local high school, public or private.
6. Student personnel services.
7. Community services.
8. Vocational education for persons who have academic, socio-economic, or other handicaps which prevent succeeding in regular vocational education programs.
9. Training, retraining, and all necessary preparation for productive employment of all citizens.
10. Vocational and technical training for persons who are not enrolled in a high school and who have not completed high school.

It is further declared to be the policy of the state that all of the area of the state shall be in a merged area by July 1, 1971. If any area of this state is not within one of the existing merged areas of this state by April 1, 1971, or is not included in a plan pending before the state board of public instruction under the provisions of this chapter on or before that date, the state board of public instruction shall attach all such areas to an existing merged area or shall form such areas into new merged areas. Such attachment or formation shall become effective by resolution of the board, and by filing notice, if applicable, with the secretary of the school board of the merged areas to which such area is to be attached. Any area included in a merged area plan filed with the state board on or before April 1, 1971, and not becoming a part of a merged area because of the subsequent failure of the plan, shall be attached to an existing merged area by the state board of public instruction. The state board shall, where possible, carry out the provisions of this Act by July 1, 1971, but may defer action as may be necessary. The state board in carrying out the provisions of this Act shall investigate the desires of the residents of the area affected, and obtain the advice and recommendation of the advisory committee. All actions made by the state board shall be accomplished by resolution of the board. Such resolution shall be adopted by roll call vote entered in the minutes of the board and the action of the board shall be final.

At any time before April 1, 1971, any school district not included in a merged area may join any adjacent merged area in the following manner:

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The school district board of directors shall publish notice of the proposal to join a specific adjacent merged area, in a newspaper of general circulation within the school district. The notice shall be published at least twice, no oftener than once a week.

The school district shall become part of the adjacent merged area, as proposed in the notice, thirty days after second publication of the notice, unless a petition requesting an election on the proposal and signed by electors equal to ten percent of those voting in the last regular school election in the district is filed with the school board.

If such a petition is filed, the school board shall submit the question of whether the district shall join the adjacent merged area as proposed, or shall join another adjacent merged area, at the next regular school election, or at a special election. If a special election is called, notice shall be published at least three times, no oftener than once a week, in a newspaper of general circulation within the district.

Upon receiving notification from a school board that it is proceeding under the above provisions to join an adjacent merged area, the state board shall stay its attachment proceedings until the procedures are completed. If a majority of those voting favor joining any adjacent merged area, the state board shall proceed to attach the district to that merged area. [C66, 280A.1; Ch. 244 (S.F. 616), sec. 10, 62 G.A.; Ch. 1118 (H.F. 333), sec. 1, 63 G.A. (2)]

280A.2 Definitions. When used in this chapter, unless the context otherwise requires:

1. "Vocational school" means a publicly supported school which offers as its curriculum or part of its curriculum vocational or technical education, training, or retraining available to persons who have completed or left high school and are preparing to enter the labor market; persons who are attending high school who will benefit from such education or training but who do not have the necessary facilities available in the local high schools; persons who have entered the labor market but are in need of upgrading or learning skills; and persons who due to academic, socio-economic, or other handicaps are prevented from succeeding in regular vocational or technical education programs.

2. "Junior college" means a publicly supported school which offers as its curriculum or part of its curriculum two years of liberal arts, preprofessional, or other instruction partially fulfilling the requirements for a baccalaureate degree but which does not confer any baccalaureate degree.

3. "Community college" means a publicly supported school which offers two years of liberal arts, preprofessional, or other instruction partially fulfilling the requirements for a baccalaureate degree but which does not confer any baccalaureate degree and which offers in whole or in part the curriculum

of a vocational school.

4. "Merged area" means an area where two or more county school systems or parts thereof merge resources to establish and operate a vocational school or a community college in the manner provided in this chapter.

5. "Area vocational school" means a vocational school established and operated by a merged area.

6. "Area community college" means a community college established and operated by a merged area.

7. "State board" means the state board of public instruction.

8. "State superintendent" means the state superintendent of public instruction.

9. "Planning board" means any county board of education which is a party to a plan for establishment of an area vocational school or area community college.

10. "Area school" means an area vocational school or area community college established under the provisions of this Act. [Ch. 244 (S.F. 616), sec. 11, 62nd G.A.]

280A.3 Combination of school systems. Boards of education of two or more counties are hereby authorized to plan for the merger of county school systems, or parts thereof, for the purpose of providing an area vocational school or area community college. Such plans shall be effectuated only upon approval by the state board and by subsequent concurrent action of the county boards of education at special meetings, called for that purpose, or at the regular July meetings of the county boards. No area which has less than four thousand public and private pupils in grades nine through twelve shall be approved by the state board as a merged area. [61GA, ch 247, sec. 3]

280A.4 Division of county systems. Upon recommendation of the county board of education and approval by the state board in an area plan, a county school system may be divided to permit parts of the system to merge with one or more merged areas in establishing an area vocational school or area community college. When division is permitted, the county school system shall be divided along local school district boundaries. No local school district shall be a part of more than one merged area. The county board of education shall be the planning board for any portion of the county school system which is to become a part of a merged area. [61GA, ch 247, sec. 4]

280A.5 Submission of plan to state board. Plans formulated for a merged area when submitted to the state board shall include the following:

1. A description of the geographic limits of the proposed area.

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2. Total population, population trends, population density, and projected population density of the area.

3. Total school enrollments in grades one through eight within the area.

4. Total school enrollments in grades nine through twelve within the area.

5. Projections of school enrollments within the area.

6. A description of the types of educational offerings and capacities of educational facilities beyond high school existing within the area, or within fifty miles of the center of the area, at the time of submission of plans.

7. Identification of educational programs needed within the area.

8. An evaluation of local interest in and attitude toward establishment of the proposed area vocational school or area community college.

9. An evaluation of the ability of the area to contribute to the financial support of the establishment and operation of the proposed area vocational school or area community college.

10. Estimated number of students within the area who are eligible to attend the proposed area vocational school or area community college.

11. The curriculum intended to be offered in the proposed area vocational school or area community college and assurances that adequate and qualified personnel will be provided to carry on the proposed curriculum and any necessary related services.

12. The location or locations where the proposed area vocational school or area community college is to be constructed or established if such location or locations have been agreed upon. The site or sites of any proposed area vocational school or area community college shall be of sufficient size to provide for additional future expansion.

13. The boundaries of director districts which shall number not less than five or more than nine if such districts have been agreed upon. Director districts shall be of approximately equal population.

14. When it is intended that one or more existing vocational schools, community colleges, or public junior colleges are to become an integrated part of an area vocational school or area community college, specific information regarding arrangements agreed upon for compensating the local school district or districts which operate or operated any existing school or college.

15. Such additional information as the state board may by administrative rule require. [61 GA, ch 247, sec. 5]

280A.6 Formulating plans - cost. County boards of education may expend public funds for the purpose of formulating plans for a merged area and may arrive at an equitable distribution of cost, subject to approval of the state board, to be paid by

each participating board. [61GA, ch 247, sec. 6]

280A.7 Investigation of plan. Upon receipt of any plan submitted, the state board shall cause the plan to be examined, conduct further investigation of and hearings on the plan if deemed necessary, and evaluate the plan in relation to all vocational schools, community colleges, and junior colleges existing, proposed, or needed throughout the state. The state board may approve or disapprove the plan or may return the plan to the planning boards for modification and resubmission. [61GA, ch 247, sec. 7]

280A.8 Approval of plan. When a plan is approved, the state board shall issue an order of the approval, a copy of which shall be sent to each of the respective planning boards. The order shall:

1. Officially designate and classify the area school to be established as an area vocational school or area community college.

2. Describe all territory included in the county school systems which is to be a part of the approved area.

3. Officially designate the location or locations of the area vocational school or area community college. If the plan did not specify a location, the state board shall so determine.

4. Officially designate the boundaries of director districts. If the plan did not specify such boundaries, the state board shall so determine. [61GA, ch 247, sec. 8]

280A.9 Disapproval of plan. When a plan is disapproved, a statement of the reasons for such disapproval shall be forwarded to each of the planning boards. Within fifteen calendar days from the date of receiving such statement, the planning boards or their authorized representative may request a hearing by the state board on the disapproved plan. The state board shall grant the hearing within thirty calendar days after receipt of the request. Upon receiving all evidence and arguments presented by the planning boards or their representative, the state board may reaffirm or reconsider its previous action with respect to the disapproved plan or may request the planning boards to modify and resubmit the plan. [61GA, ch 247, sec. 9]

280A.10 Procedure after approval. When a plan proposing formation of a merged area is approved by the state board, each county board of education which is a planning board with respect to the approved plan shall:

1. Within thirty calendar days after approval of the plan by the state board, order published, in all official newspapers of the county, notice of intent to form the proposed merged area. The state board shall prescribe by administrative rule the form and content

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of such published notices.

2. Within seventy calendar days after approval of the plan by the state board hold a meeting to accept or reject the merger plan. In the event no decision has been made by a county board of education within seventy days, the county board shall be deemed to have approved the merger plan. The secretaries of the respective boards shall immediately notify the state board of the action taken at the meetings. [61GA, ch 247, sec. 10]

280A.11 Procedure of state board. Upon receiving notice that all planning boards have given final approval to the proposal to form a merged area, the state board shall:

1. Officially designate all territory included in the plan approved by the county school systems as a merged area.

2. Direct the county commissioner of elections of the county in which the physical plant facilities of the area vocational school or area community college are to be located to call and conduct a special election to choose the members of the initial governing board of the merged area. If physical plant facilities are to be located in more than one county, the county commissioner of elections of the county in which the school or college administrative offices are to be located shall be responsible for calling and conducting the special election. [61GA, ch 247, sec 11; 65G.A., Ch.136 (H.F. 745), sec 275]

280A.12 Governing board. The governing board of a merged area shall be a board of directors composed of one member elected from each district district in the area by the electors of the respective district. Members of the board shall be residents of the district from which elected. Successors shall be chosen at the annual school elections for members whose terms expire on the first Monday in October following such elections. Terms of members of the board of directors shall be three years except that members of the initial board of directors elected at the special election shall determine their respective terms by lot so that the terms of one-third of the members, as nearly as may be, shall expire on the first Monday in October of each succeeding year. Vacancies on the board which occur more than ninety days prior to the next annual school election shall be filled at the next regular meeting of the board by appointment by the remaining members of the board. The member so chosen shall be a resident of the district in which the vacancy occurred and shall serve until the next annual school election, at which election a member shall be elected to fill the vacancy for the balance of the unexpired term. A vacancy shall be deemed as in section 27729. No member shall serve on the board of directors who is a member of a board of directors of a local school district or a member of a county board of education. [61GA, ch

247, sec. 12]

280A.13 Directors of merged area. In each merged area, the initial board of directors elected at the special election shall organize within fifteen days following the election and may thereafter proceed with the establishment of the designated area vocational school or area community college. The board of directors shall thereafter organize on the first Monday in October of each year. Organization of the board shall be effected by the election of a president and such other officers from the board membership as board members so determine. The board of directors shall appoint a secretary and a treasurer who shall each give bond as prescribed in section 291.2 and who shall each receive such salary as shall be determined by the board. The secretary and treasurer shall perform such duties as are prescribed in chapter 291 and such additional duties as the board of directors may deem necessary. The frequency of meetings other than organizational meetings shall be as determined by the board of directors but the president or a majority of the members may call a special meeting at any time. [61GA, ch 247, sec. 13]

280A.14 Expenses prorated. All expenses incurred in electing the initial board of a merged area shall be prorated among the several county school systems included in the area, in the proportion that the value of taxable property in each county school system, or any portion thereof which is part of the merged area, bears to the total value of taxable property in the area. The county commissioner of elections responsible for conducting the election shall certify to each county board of education the amount which each board owes. [61G.A., ch 247, sec. 14; 65G.A., Ch.136 (H.F. 745), sec 276]

280A.15 Conduct of elections. The nomination of candidates, preparation of ballots, and canvass for all elections of members of the board of directors of an area vocational school or an area community college, except as otherwise directed, shall be conducted in the manner provided in sections 2735, 2736, and 2737 for members of county boards of education. Nomination papers in behalf of a candidate shall be filed with the secretary of the board of the merged area. Each candidate shall be nominated by a petition signed by not less than fifty qualified electors of the district from which the member is to be elected. The notice shall be published as provided in chapter 49 and the election shall be conducted by the county commissioner of elections pursuant to the provisions of chapters 39 through 53. The votes cast in the election shall be canvassed by the county board of supervisors and the county commissioner of elections shall issue certificates of election as prescribed in section 2737.

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Members elected to the board of directors of a merged area shall qualify by taking the oath of office prescribed in section 277.28. [65G.A., Ch.136 (H.F. 745), sec 277]

280A.16 Status of merged area. A merged area formed under the provisions of this chapter shall be a body politic as a school corporation for the purpose of exercising powers granted under this chapter, and as such may sue and be sued, hold property, and exercise all the powers granted by law and such other powers as are incident to public corporations of like character and are not inconsistent with the laws of the state. [C71, 73, 280A.16]

280A.17 Preparation of budget. The board of directors of each merged area shall prepare an annual budget designating the proposed expenditures for operation of the area vocational school or area community college. The board shall further designate the amounts which are to be raised by local taxation and the amounts which are to be raised by other sources of revenue for such operation. The budget of each merged area shall be submitted to the state board no later than June 1 preceding the next fiscal year for approval. The state board shall review the proposed budget and shall, prior to July 1, either grant its approval or return the budget without approval with the comments of the state board attached thereto. Any unapproved budget shall be resubmitted to the state board for final approval. Upon approval of the budget by the state board, the board of directors shall prorate the amount to be raised by local taxation among the respective county school systems, or parts thereof, in the proportion that the value of taxable property in each system, or part thereof, bears to the total value of taxable property in the area. The board of directors shall certify the amount so determined to the respective county auditors and the boards of supervisors shall levy a tax sufficient to raise the amount. No tax in excess of three fourths mill shall be levied on taxable property in a merged area for the operation of an area vocational school or area community college. Taxes collected pursuant to such levy shall be paid by the respective county treasurers to the treasurer of the merged area in the same manner that other school taxes are paid to local school districts.

It is the policy of the state that the property tax for the operation of area schools shall not in any event exceed three fourths mill, and that the present and future costs of such operation in excess of the funds raised by such three fourths mill levy shall be the responsibility of the state and shall not be paid from property tax. The general assembly in 1971 shall review the need for and the advisability of such three fourths mill levy. [C71, 73, 280A.17]

280A.18 Other funds received. In addition to revenue derived by tax levy, a board of directors of a merged area shall be authorized to receive and expend:

1. Federal funds made available and administered by the state board, for such purposes as may be provided by federal laws, rules, and regulations.

2. Other federal funds for such purposes as may be provided by federal law, subject to the approval of the state board.

3. Tuition in accordance with section 280A.23(3).

4. State aid to be paid in accordance with the statutes which provide such aid.

5. State funds for sites and facilities made available and administered by the state board.

6. Donations and gifts which may be accepted by the governing board and expended in accordance with the terms of the gift without compliance with the local budget law.

7. Student fees collected from students for activities, laboratory breakage, instructional materials, and other objects and purposes for which student fees other than tuition are customarily charged by colleges and universities, as provided in a schedule of fees adopted by the area board of directors. The expenditure of funds collected from students for activities shall be determined by the student government unit with administrative and board approval.

After June 30, 1971, any increases in student fees for activities shall be determined by the student government unit with administrative and board approval. [C71, 73, 280A.18; 65G.A., Ch.110 (H.F. 775), sec 10]

280A.19 Acquisition of sites and buildings. Boards of directors of merged areas may acquire sites and erect and equip buildings for use by area vocational schools or area community colleges and may contract indebtedness and issue bonds to raise funds for such purposes. [61GA, ch 247, sec. 19]
(referred to in secs. 280A.20, 280A.21)

280A.20 Payment of bonds. Taxes for the payment of bonds issued under section 280A.19 shall be levied in accordance with chapter 76. The bonds shall be payable from a fund created from the proceeds of such taxes in not more than twenty years and bear interest at a rate not exceeding seven percent per annum, and shall be of such form as the board issuing the bonds shall by resolution provide. Any indebtedness incurred shall not be considered an indebtedness incurred for general and ordinary purposes. [C71, 73, 280A.20, 64G.A., (2), Ch 108B (H.F. 574), sec 247]

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280A.21 Election to incur indebtedness. No indebtedness shall be incurred under section 280A.19 until authorized by an election. A proposition to incur indebtedness and issue bonds for area vocational school or area community college purposes shall be deemed carried in a merged area if approved by a sixty percent majority of all voters voting on the proposition in the area. [C71, 73, 280A.21]

280A.22 Additional tax. In addition to the tax authorized under section 280A.17, the voters in any merged area may at the annual school election vote a tax not exceeding three-fourths mill on the dollar in any one year for a period not to exceed five years for the purchase of grounds, construction of buildings, payment of debts contracted for the construction of buildings, purchase of buildings and equipment for buildings, and the acquisition of libraries, and for the purpose of maintaining, remodeling, improving, or expanding the area vocational school or area community college of the merged area which tax shall be collected by the county treasurers and remitted to the treasurer of the merged area as other taxes are collected and remitted, and the proceeds of said tax shall be deposited in a separate and distinct fund to be known as the voted tax fund, to be paid out upon warrants drawn by the president and secretary of the board of directors of the merged area district for the payment of costs incurred in providing the school facilities for which the tax was voted.

In order to make immediately available to the merged area the proceeds of the voted tax hereinbefore authorized to be levied, the board of directors of any such merged area is hereby authorized, without the necessity for any further election, to borrow money and enter into loan agreements in anticipation of the collection of such tax, and such board shall, by resolution, provide for the levy of an annual tax, within the limits of the special voted tax hereinbefore authorized, sufficient to pay the amount of any such loan and the interest thereon to maturity as the same becomes due. A certified copy of this resolution shall be filed with the county auditors of the counties in which such merged area is located, and the filing thereof shall make it a duty of such auditors to enter annually this levy for collection until funds are realized to repay the loan and interest thereon in full. Said loan must mature within the number of years for which the tax has been voted and shall bear interest at a rate or rates not exceeding seven percent per annum. Any loan agreement entered into pursuant to authority herein contained shall be in such form as the board of directors shall by resolution provide and the loan shall be payable as to both principal and interest from the proceeds of the annual levy of the voted tax hereinbefore authorized, or so much thereof as will be sufficient to pay the loan and interest thereon. In furtherance of the foregoing the board of directors of

such merged area may, with or without notice, negotiate and enter into a loan agreement or agreements with any bank, investment banker, trust company, insurance company, or group thereof, whereunder the borrowing of the necessary funds may be assured and consummated. The proceeds of such loan shall be deposited in a special fund, to be kept separate and apart from all other funds of the merged area, and shall be paid out upon warrants drawn by the president and secretary of the board of directors to pay the cost of acquiring the school facilities for which the tax was voted.

Nothing herein contained shall be construed to limit the authority of the board of directors to levy the full amount of the voted tax, but if and to whatever extent said tax is levied in any year in excess of the amount of principal and interest falling due in such year under any loan agreement, the first available proceeds thereof, to an amount sufficient to meet maturing installments of principal and interest under the loan agreement, shall be paid into the sinking fund for such loan before any of such taxes are otherwise made available to the merged area for other school purposes, and the amount required to be annually set aside to pay the principal of and interest on the money borrowed under such loan agreement shall constitute a first charge upon all of the proceeds of such annual special voted tax, which tax shall be pledged to pay said loan and the interest thereon.

This law shall be construed as supplemental and in addition to existing statutory authority and as providing an independent method of financing the cost of acquiring school facilities for which a tax has been voted under this section and for the borrowing of money and execution of loan agreements in connection therewith and shall not be construed as subject to the provisions of any other law. The fact that a merged area may have previously borrowed money and entered into loan agreements under authority herein contained shall not prevent such merged area from borrowing additional money and entering into further loan agreements provided that the aggregate of the amount payable under all of such loan agreements does not exceed the proceeds of the voted tax. All acts and proceedings heretofore taken by the board of directors or by any official of any merged area for the exercise of any of the powers granted by this section are hereby legalized and validated in all respects. [C71, 73, 280A.22]

280A.23 Authority of area directors. The board of directors of each area vocational school or area community college shall

1. Determine the curriculum to be offered in such school or college subject to approval of the state board. If an existing private educational or vocational institution within the merged area has facilities and curriculum of adequate size and quality which would duplicate the functions of the area school, the board

of directors shall discuss with the institution the possibility of entering into contracts to have the existing institution offer facilities and curriculum to students of the merged area. The board of directors shall consider any proposals submitted by the private institution for providing such facilities and curriculum. The board of directors may enter into such contracts. In approving curriculum, the state board shall ascertain that all courses and programs submitted for approval are needed and that the curriculum being offered by an area school does not duplicate programs provided by existing public or private facilities in the area. In determining whether duplication would actually exist, the state board shall consider the needs of the area and consider whether the proposed programs are competitive as to size, quality, tuition, purposes, and area coverage with existing public and private educational or vocational institutions within the merged area.

2. Change boundaries of director districts in merged areas after each decennial census or change in boundaries of the merged area to compensate for changes in population if such population changes have taken place.

3. Have authority to determine tuition rates for instruction. Tuition for residents of Iowa shall not exceed the lowest tuition rate per semester, or the equivalent, charged by an institution of higher education under the state board of regents for a full-time resident student. However, if a local school district pays tuition for a resident pupil of high school age, the limitation on tuition for residents of Iowa shall not apply, the amount of tuition shall be determined by the board of directors of the area school with the consent of the local school board, and the pupil shall not be included in the full-time equivalent enrollment of the area school for the purpose of computing general aid to the area school. Tuition for nonresidents of Iowa shall be not less than one hundred fifty percent and not more than two hundred percent of the tuition established for residents of Iowa. Tuition for resident or nonresident students may be set at a higher figure with the approval of the state board. A lower tuition for nonresidents may be permitted under a reciprocal tuition agreement between a merged area and an educational institution in another state, if the agreement is approved by the state board.

4. Have the powers and duties with respect to such schools and colleges, not otherwise provided in this chapter, which are prescribed for boards of directors of local school districts by chapter 279.

5. Have the power to enter into contracts and take other necessary action to insure a sufficient

curriculum and efficient operation and management of the school or college and maintain and protect the physical plant, equipment, and other property of the school or college.

6. Establish policy and make rules, not inconsistent with law and administrative rules, regulations, and policies of the state board, for its own government and that of the administrative, teaching, and other personnel, and the students of the school or college, and aid in the enforcement of such laws, rules, and regulations.

7. Have authority to sell any article resulting from any vocational program or course offered at an area vocational school or area community college. Governmental agencies and governmental subdivisions of the state within the merged areas shall be given preference in the purchase of such articles. All revenue received from the sale of any article shall be credited to the funds of the board of the merged area.

8. With the consent of the inventor, and in the discretion of the board, secure letters patent or copyright on inventions of students, instructors, and officials of any vocational school or community college of the merged area, or take assignment of such letters patent or copyright and make all necessary expenditures in regard thereto. Letters patent or copyright on inventions when so secured shall be the property of the board of the merged area and the royalties and earnings thereon shall be credited to the funds of the board.

9. The area board, when setting the salary of the area superintendent, shall take into consideration the salaries of administrators of educational institutions in the area and the enrollment of the area schools; the salary range shall be from seventeen thousand dollars to twenty-seven thousand five hundred dollars per annum including additional benefits, over and above the additional benefits given all full-time employees. The superintendent shall not be required to hold any teacher's certificate.

10. Tax-sheltered annuities: At the request of an employee through contractual agreement the board may arrange for the purchase of an individual annuity contract for any of their respective employees from any company the employee may choose that is authorized to do business in this state and through an Iowa-licensed insurance agent that the employee may select, for retirement or other purposes and may make payroll deductions in accordance with such arrangements for the purpose of paying the entire premium due and to become due under such contract. The deductions shall be made in the manner which will qualify the annuity premiums for the

benefits afforded under section 403b of the Internal Revenue Code of 1954 and amendments thereto. The employee's rights under such annuity contract shall be nonforfeitable except for the failure to pay premiums. [Ch. 244 (S.F. 616), sec. 14, 62 G.A.; Ch. 185 (S.F. 593), sec. 1, 63 G.A.]

280A.24 Area community college. The board of directors of a merged area initially organized for the establishment of, and which is operating, an area vocational school may with the approval of the state board expand the curriculum of the school to qualify as an area community college. The state board shall upon approval officially classify the school as an area community college.

The standard academic workload for an instructor in arts and science courses shall be fifteen credit hours per school term, and the maximum academic workload for any instructor shall be sixteen credit hours per school term, for classes taught during the normal school day. In addition thereto, any faculty member may teach a course or courses at times other than usual day-course hours, or on days other than the regular school week, involving total class instruction time equivalent to not more than a three-credit-hour course. The total workload for such instructors shall not exceed the equivalent of eighteen credit hours per school term. [Ch. 244 (S.F. 616), sec. 15, 62nd G.A.]

280A.25 Power of state board. The state board shall:

1. Have authority to designate any vocational school or community college as an "area vocational education school" within the meaning of, and for the purpose of administering, the Act of Congress designated the "Vocational Education Act of 1963". No vocational school or community college shall be so designated by the board for the expenditure of funds under section 35c, subsection (a), paragraph 5, Title 20, U.S.C., which has not been designated and classified as an area vocational school or area community college by the state board.

2. Change boundaries of director districts in any merged area when the board of directors of the area fails to change boundaries as required under section 280A.23, subsection 2.

3. Change boundaries of merged areas to take into account mergers of local school districts and changes in boundaries of local school districts, when necessary to maintain the policy of this chapter that no local school district shall be a part of more than one merged area. The state board may also make other changes in boundaries of merged areas with the approval of the board of directors of each merged area affected by the change. At any time when the boundaries of a merged area are so changed, the state board may authorize the board of directors of the merged area to levy additional taxes upon the

property within the merged area, or any part thereof, and distribute the same so that all parts of the merged area are paying their share toward the support of the school or college.

4. Administer, allocate, and disburse any federal or state funds made available to pay any portion of the cost of acquiring sites for and constructing, acquiring, or remodeling facilities for area vocational schools or area community colleges, and establish priorities for the use of such funds.

5. Administer, allocate, and disburse any federal or state funds available to pay any portion of the operating costs of area vocational schools or area community colleges.

6. Approve, in such manner as it may prescribe, sites and buildings to be acquired, erected, or remodeled for use by area vocational schools or area community colleges.

7. Have authority to adopt such administrative rules and regulations as it deems necessary to carry out the provisions of this chapter.

8. Have the power to enter into contracts with local school boards within the area that have and maintain a technical or vocational high school and with private schools or colleges in the co-operative or merged areas to provide courses or programs of study in addition to or as a part of the curriculum made available in the community college or area vocational schools.

9. Make arrangements with boards of merged areas and local school districts to permit students attending high school to participate in vocational-technical programs and obtain credit for such participation for application toward the completion of a high school diploma. The granting of such credit shall be subject to the approval of the state board.

10. Prescribe a uniform system of accounting for area schools. [Ch. 244 (S.F. 616), sec. 16, 62nd G.A.]

280A.26 Former community or junior colleges.

Any local school district which operated a community or junior college for any period between September 1, 1964 and July 4, 1965 may continue to operate such college. Existing public community or junior colleges may be converted into area vocational schools or area community colleges in the manner provided in this chapter. In addition, an existing public community or junior college may be converted into an area vocational school or area community college by agreement between the board of directors of the local school district operating the community or junior college and the board of directors of the merged area. Such agreement shall be effective only if approved by the state board of public instruction. Such agreement shall provide for reasonable compensation to such local school district.

Where the board of any local school district

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operating a community or junior college and the board of directors of the merged areas are not in agreement on the reasonable value of any public community or junior college which is to be converted, the matters of disagreement shall be decided by three disinterested arbitrators; one selected by the local board, one by the board of the merged area, and one by the two arbitrators so selected. The decision of the arbitrators shall be made in writing and a copy of the decision shall be filed with the secretary of the board of the merged area and the secretary of the local board. Any party to the proceedings may appeal therefrom to the district court by serving notice thereof within twenty days after the decision is filed. Such appeal shall be tried in equity and a decree entered determining the entire matter. The decree so entered shall be final. [61GA, ch 247, sec. 26]

280A.27 Area schools branch in department. There shall be an area schools branch within the state department of public instruction. The branch shall exercise the powers and perform the duties conferred by law upon the department with respect to area vocational schools and area and public community and junior colleges. [Ch. 244 (S.F. 616), sec. 17, 62nd G.A.]

280A.28 Assistant superintendent of branch. Repealed by Ch. 1106 (H.F. 1359), sec. 3, 63 G.A. (2).

280A.29 Advisory committee. There is further established a state advisory committee on area schools which shall consist of nine members. Members of the committee shall be appointed by the governor and shall include:

1. A member of the state board of regents.
2. A member of the state advisory committee for vocational education.
3. A member to represent private universities and colleges.
4. A member to represent industry and management.
5. A member to represent associations which have been established for the purpose of furthering the education and training of individuals with academic, socio-economic, and other handicaps.
6. A member to represent local school districts which offer programs of vocational education.
7. Two members to represent the general public.
8. A member to represent labor. [Ch. 244 (S.F. 616), sec. 19, 62nd G.A.]

280A.30 Members terms. The members of the state advisory committee shall serve for terms of four years but the nine initial appointees shall serve as follows: Four members shall serve from the date of appointment until June 30, 1967, and five members

shall serve from the date of the appointment until June 30, 1969. Any vacancy on the committee shall be filled for the unexpired term of the vacancy in the same manner as the original appointment. Members of the committee shall serve without compensation but shall be allowed actual and necessary expenses while engaged in official duties. [61GA, ch 247, sec. 30]

280A.31 Meetings. Prior to August 1 of each year, the advisory committee shall meet and organize. The committee shall annually elect a chairman and such other officers as committee members deem necessary. The chairman of the committee shall be responsible for calling meetings of the advisory committee. Advisory committee members shall meet at least four times a year and at such other times as the chairman or the state superintendent deems necessary. The state board shall meet with the advisory committee at least quarterly. [Ch. 244 (S.F. 616), sec. 20, 62nd G.A.]

280A.32 Advice. The advisory committee shall advise the state board on the establishment of area community colleges, on the adoption of standards for area and public community and junior colleges, on faculty salary schedules and other matters relating to area and public community and junior colleges under the jurisdiction of the state board and state superintendent. [Ch. 244 (S.F. 616), sec. 21, 62nd G.A.]

280A.33 Joint action with board of regents. Approval standards, except as hereinafter provided, for area and public community and junior colleges shall be initiated by the area schools branch of the department and submitted to the state board of public instruction and the state board of regents, through the state superintendent of public instruction, for joint consideration and adoption. No proposed approval standard shall be adopted by the boards until the standard has been submitted to the advisory committee created by this chapter and its recommendations thereon obtained.

Approval standards for area vocational schools and for vocational programs and courses offered by area community colleges shall be initiated by the area schools branch and submitted to the state board of public instruction through the state superintendent of public instruction, for consideration and adoption. No such proposed approval standard shall be adopted by the state board until the standard has been submitted to the advisory committee created by this chapter and to the advisory committee created by chapter 258 and their recommendations thereon obtained.

For purposes of this section, "approval standards" shall include standards for administration, qualifications and assignment of personnel,

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curriculum, facilities and sites, requirements for awarding of diplomas and other evidence of educational achievement, guidance and counseling, instruction, instructional materials, maintenance, and library. [Ch. 244 (S.F. 616), sec. 22, 62nd G.A.]

280A.34 Restriction for athletic facilities. Funds obtained pursuant to section 280A.17; subsections 3, 4, and 5 of section 280A.18; section 280A.19; and section 280A.22, shall not be used for the construction or maintenance of athletic buildings or grounds. [Ch. 244 (S.F. 616), sec. 7, 62nd G.A.]

280A.35 Limitation on sites. After January 1, 1969, a merged area may not purchase land which will increase the aggregate of land owned by such area, excluding land which has been or may be acquired by donation or gift, by more than three hundred twenty acres. Such limitation shall not apply to merged areas owning more than three hundred twenty acres, excluding land acquired by donation or gift, prior to January 1, 1969.

With the approval of the state board, the board of directors of any merged area at any time may sell any land in excess of one hundred sixty acres owned by the merged area, and no election shall be necessary in connection with such sale notwithstanding any other provisions of law. The proceeds of the sale may be used for any of the purposes stated in section 280A.22. This paragraph is in addition to any authority under other provisions of law. [Ch. 190 (H.F. 825), sec. 7, 63 G.A.]

280A.36 Faculty development. The administration of the college shall encourage the continued development of faculty potential by: (1) Regularly stimulating department chairmen or heads to meet their responsibilities in this regard; (2) lightening the teaching loads of first-year instructors whose course preparation and in-service training demand it; (3) stimulating curricular evaluation; and (4) encouraging the development of an atmosphere in which the faculty brings a wide range of ideas and experiences to the students, each other, and the community. [Ch. 244 (S.F. 616), sec. 29, 62nd G.A., amended section 5.4 (8), Rules of the Department of Public Instruction and enacted it as above.]

280A.37 Dues paid to association. Boards of directors of merged area schools may pay, out of funds available to them, reasonable annual dues to an Iowa association of school boards.

Membership in such an Iowa association of school boards shall be limited to those duly elected members of boards of directors of area schools. [Ch. 187 (S.F. 545), sec. 4, 63 G.A.]

280A.38 Lease-purchase agreements. The board of directors may, with the approval of the state

board, enter into lease agreements, with or without purchase options, not to exceed twenty years in duration, for the leasing or rental of buildings for use basically as classrooms, laboratories, shops, libraries and study halls for vocational school or community college purposes, and pay for the same with funds acquired pursuant to section two hundred eighty A point seventeen (280A.17), section two hundred eighty A point eighteen (280A.18), and section two hundred eighty A point twenty-two (280A.22) of the Code.

Such agreements may include the leasing of existing buildings on public or private property, buildings to be constructed upon real estate owned by the area school, or buildings to be placed upon real estate owned by the area school.

Before entering into a lease agreement with a purchase option for a building to be constructed, or placed, upon real estate owned by the area school, the board shall first adopt plans and specifications for the proposed building which it considers suitable for the intended use, and the board shall also adopt the proposed terms of the lease agreement and purchase option. Upon obtaining the approval of the state board, the board shall invite bids thereon, by advertisement published once each week for two consecutive weeks in the county where the building is to be located. Such lease agreement shall be awarded to the lowest responsible bidder, or the board may reject all bids and readvertise for new bids. [Ch. 189 (S.F. 630), sec. 1, 63 G.A.]

280A.39 Adjacent areas combined. Any merged area may combine with any adjacent merged area after a favorable vote by the electors of each of the areas involved. If the boards of directors of two or more merged areas agree to a combination, the question shall be submitted to the electors of each area at a special election to be held on the same day in each area. The special election shall not be held within thirty days of any general election. Prior to the special election, the board of each merged area shall publish notice of the election at least three times, no oftener than once a week, in one or more newspapers of general circulation within the merged area.

If the vote is favorable in each merged area, the boards of each area shall proceed to transfer the assets, liabilities, and facilities of the areas to the combined merged area, and shall serve as the acting board of the combined merged area until a new board of directors is elected. The acting board shall submit to the state board a plan for redistricting the combined merged area, and upon receiving approval from the state board, shall provide for the election of a director from each new district at the next regular school election. The directors elected from each new district shall determine their terms by lot as provided in section 280A.12. Election of directors for the

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combined merged area shall follow the procedures established for election of directors of a merged area. A combined merged area shall be subject to all provisions of law and regulations governing merged areas. [Ch. 1118 (H.F. 333), sec. 2, 63 G.A. (2)]

merged area shall provide an area vocational school attendance center within a county of the merged area which contains a city of fifty thousand population or more as determined by the most recent federal decennial census. [Ch. 1118 (H.F. 333), sec. 3, 63 G.A. (2)]

280A.40 Dubuque attendance center. Any

Michigan State Legislation Effecting Vocational Education Delivery

FEDERAL AND STATE AID

Act 149, 1919, p 275; eff August 14.

AN ACT to accept the requirements and benefits of an act of the sixty-fourth [64th] congress of the United States, approved February twenty-three [23], nineteen hundred seventeen [1917], known as the Smith-Hughes act, or public act number three hundred forty-seven [347], relating to appropriations to be made by the federal government to the several states for the support and control of instruction in agriculture, the trades, industries, and home economics, and for the preparation of teachers of vocational subjects; to designate a state board of control for vocational education; to provide for the proper custody and administration of funds received by the state from such appropriations; and to provide for appropriations by the state and by local school authorities to meet the conditions of said act of congress.

§ 15.821] Acceptance of federal act; appropriations.

SEC. 1. The provisions of an act of congress enacted by the sixty-fourth [64th] congress in the second [2nd] session thereof known as public act number three hundred forty-seven [347], entitled "An act to provide for the promotion of vocational education; to provide for co-operation with the states in the promotion of such education in agriculture and the trades and industries; to provide for co-operation with the states in the preparation of teachers of vocational subjects, and to appropriate money and regulate its expenditure," are hereby accepted by the state of Michigan as follows:

- (a) Appropriations for the salaries of teachers, supervisors and directors of agricultural subjects;
- (b) Appropriations for the salaries of teachers of trade, home economics, and industrial subjects;
- (c) Appropriations for the preparation of teachers of agricultural, trade, industrial and home economics subjects. (MCL § 395.1; CL '29, § 7712.)

Former act. Public Acts 1917, No. 189.

Statutory reference. Public Act 347, above referred to, is 20 USC: 11 et seq.

1-10 [Reserved for use in future supplementation.]

11. **Ownership of funds.** Under a former statute money turned over to the state by the federal government for vocational education belonged to the state as well as the interest thereon. Op Atty Gen, 1918, p 186.

Digest reference. See Callaghan's Mich Dig, Schools and Education, § 63.

Textbook reference. See Callaghan's Mich Civ Jur, Schools and Education § 139.

§ 15.822] Same; benefits of funds. SEC. 2. The benefits of said funds appropriated by the federal government under the provisions of said act are hereby accepted as provided in said act, and provision is herein made under which the state of Michigan will meet such appropriations and provisions. (MCL § 395.2; CL '29, § 7713.)

TRANSFER OF POWERS

Act 28, 1964, p 33; eff August 28.

AN ACT to transfer the powers, duties and functions of the state board of control for vocational education to the state board of education.

The People of the State of Michigan enact:

§ 15.857 Board of control for vocational education; powers transferred to state board of education.] SEC. 1. The state board of control for vocational education created under section 3 of Act No. 149 of the Public Acts of 1919, as amended, being section 395.3 of the Compiled Laws of 1948, is abolished, and all of its powers, duties and functions are transferred to the state board of education effective January 1, 1965. (MCL § 395.21.)

Statutory reference. Section 3 of Act No. 149 of 1919, above referred to, is § 15.823, supra.

Cross-reference. State board of education, see § 15.1023(1) et seq., infra.

§ 15.858(2) Acceptance of gifts, grants or devises; power and authority of state board of education; limitation on obligations.] SEC. 2. The state board of education is ♦ authorized to accept gifts, grants or devises of property, real, personal or mixed, for the benefit of the ♦ [state technical institute and rehabilitation center], and it is further authorized and empowered to do any other act or acts necessary in the proper management of ♦ [it: Provided, That the acceptance of such gifts, grants or devises of property does not obligate the state to continue these programs nor require state matching funds to make such programs operative]. (MCL § 395.152.)

§ 15.824] State treasurer, custodian of funds; annual report. SEC. 4. The state treasurer is hereby appointed as custodian of all funds for vocational education as provided in said act and in this act, and is charged with the duty and responsibility of receiving and providing for the proper custody, and for the proper disbursements of such moneys on requisition of the said board of control for vocational education. The state treasurer as custodian of such funds for vocational education shall make an annual report to the governor and the legislature concerning the receipts and disbursements of such moneys received by him under the provisions of said act and of this act. (MCL § 395.4; CL '29, § 7715.)

Digest references. See Callaghan's Mich Dig, Schools and Education, §§ 74, 75, 77 et seq.; State of Michigan, §§ 22, 23.

§ 15.825] Buildings and equipment, reimbursement by state, limit; training of vocational teachers; state appropriation. SEC. 5. The board of education or board of control of any approved public school, department, part time or evening class giving instruction in agricultural, industrial or home economics subjects, which receive the benefit of federal and state moneys as herein provided, shall provide suitable buildings and equipment in order to give such instruction; and shall also appropriate for the salaries of instructors a sum of money sufficient to cover the expense for instruction during the year. At the end of the fiscal year the state board of control for vocational education shall apportion to the several boards of education, or boards of control of schools maintaining approved departments for vocational education as herein described, the state and federal funds by way of reimbursements for expenditures for instruction, giving to each school its proportionate share: Provided, That no school shall receive a larger amount than three-fourths [$\frac{3}{4}$] of the sum which has been expended for the particular type of education for which it received state and federal funds. The institutions authorized to give training for vocational teachers shall provide suitable rooms and equipment, and appropriate sufficient funds to pay instructors and supervisors during the year, and at the end of the year such institutions shall be reimbursed from federal and state funds, equally. There is hereby authorized to be appropriated and paid from the state treasury to the several schools giving vocational instruction under the provisions of this act, and for their supervision, a sum of money equal to one-half [$\frac{1}{2}$] the federal allotment; and there is hereby further authorized to be apportioned and paid from the state treasury to the several institutions engaged in the training of teachers of vocational subjects a sum equal to the allotment of federal moneys as provided in said act. (MCL § 395.5; CL '29, § 7716.)

1-10. [Reserved for use in future supplementation.]

11. State appropriations. State legislature has power to make appropriations for vocational education. Board of Education of Detroit v. Superintendent of Public Instruction, 319 Mich 436.

Appropriation made in Act 331 of 1947 from general fund to state school district for use and benefit of vocational education to be administered by state board of control was valid, even though state school district sought to be created by that act was invalid as not constituting "school district" within meaning of Const 1908, art X, § 23 (as added by 1946 amendment) requiring legislature to make annual grants to school districts from general funds. Board of Education of Detroit v. Superintendent of Public Instruction, 319 Mich 436.

Digest reference. See Callaghan's Mich Dig, Schools and Education, §§ 64 et seq., 137.

§ 15.826] Board of control; rules and regulations; disbursements; annual report. SEC. 6. The state board of control for vocational education shall formulate such rules and regulations as may be necessary for the development and operation of such vocational schools, and for the training of teachers as are provided for in said act, subject to the approval of the federal board of control. All disbursements of state and federal money under the provisions of this act shall be made annually on or before the tenth [10th] day of July in each year. The board of education or board of control of any school where vocational instruction is given under the provisions of this act; also boards of control of institutions giving vocational teacher training, as herein provided, shall make an annual report to the state superintendent of public instruction at such time and in such form as he may require. (MCL § 395.6; CL '29, § 7717.)

§ 15.830] Same; annual report to governor. SEC. 10. The state board of control for vocational education shall make an annual report to the governor and to the legislature in regard to the administration of this act, and of the federal act herein mentioned, and said report shall contain an explicit statement of the expenditures of all moneys, both federal and state, for the purposes mentioned in this act. (MCL § 395.10; CL '29, § 7721.)

§ 15.831] (Repealed by Pub Acts 1945, No. 267, imd eff May 25.)

ACCEPTANCE OF FEDERAL FUNDS

Act 44, 1964, p 51; imd eff May 6.

AN ACT to authorize the state board of control for vocational education to accept federal funds as provided under the provisions of federal law.

The People of the State of Michigan enact:

§ 15.832(1) Compliance with federal law; acceptance and expenditure of federal funds.] SEC. 1. The state board of control for vocational education may take any necessary action consistent with state law to comply with the provisions of Public Law 210 of the 88th Congress known as the "vocational education act of 1963" and may accept and expend federal funds available under that law for the purpose of strengthening and improving the quality of vocational education and to expand vocational education opportunities in this state. (MCL § 395.31.)

Statutory reference. Public Law 210 of the 88th Congress, above referred to, is 20 USC 15aa-15bb(c), 35-35n, 237-239, 403, 421-423, 425, 426, 441-444, 462-464, 481-484, 491, 511, 521, 541, 551, 561, 563, 588, 589, 633, 644, 645.

Cross-references. State board of control abolished and powers and duties transferred to state board of education, see § 15.857, infra; state board of education, § 15.1023(1) et seq., infra.

§ 15.832(2) Expenditure of state funds; payment of appropriations; accounting.] SEC. 2. This act shall not be construed as authorizing such board to expend or to incur any obligation to expend any state funds in excess of any amount which may be appropriated for such purpose by the legislature. Any funds appropriated shall be paid out of the state treasury in accordance with any fund accounting procedures necessary to assure proper accounting for federal funds paid to the state. (MCL § 395.32.)

§ 15.832(3) Annual report.] SEC. 3. The state board of control shall make an annual report of all activities and expenditures made under this act to the state legislature. (MCL § 395.33.)

COMMUNITY COLLEGE ACT OF 1966

Act 331, 1966. p 594; eff October 1.

AN ACT to revise and consolidate the laws relating to community colleges; to provide for the creation of community college districts; to provide a charter for such districts; to provide for the government, control and administration of such districts; to provide for the election of a board of trustees; to define the powers and duties of the board of trustees; to provide for the assessment, levy, collection and return of taxes therefor; and to repeal certain acts and parts of acts.

The People of the State of Michigan enact:

§ 15.615(101) Short title.] SEC. 1. This act shall be known and may be cited as the "community college act of 1966". (MCL § 389.1.)

History. This section is new.

Textbook reference. See Callaghan's Mich Civ Jur, Schools and Education § 22.

PART 1

CHAPTER 1

COMMUNITY COLLEGE DISTRICT COMPRISED OF COUNTIES

§ 15.615(111) Counties forming district; approval; eligibility of counties.] SEC. 11. (1) One or more contiguous counties, excepting any portion previously included in an existing community college district, may join to form a community college district by a majority vote of the electors thereof. Before the election is held, approval of the formation of the proposed community college district and the proposed maximum annual tax rate shall be obtained from the state board of education by the board or joint boards of education of the intermediate school districts of the counties affected.

(2) For the purposes of this chapter a county is eligible for the formation of a community college district even though a portion thereof is a part of an existing community college district. Such portion shall not be included in the area of the proposed community college district nor shall persons residing in such areas be eligible to vote at the organizational election or at any succeeding community college district elections. (MCL § 389.11.)

History. This section is derived, in part, from Pub Acts 1955, No. 188, § 1, as amended (former § 15.615(11)).

§ 15.615(112) Including proposition in general election; special election.] SEC. 12. (1) When approval of a proposed community college district is filed with the appropriate county clerks at least [75] days but not more than 9 months prior to the next general state election, the clerks shall include the necessary community college propositions with the proceedings for the general election.

(2) When approval of a proposed community college district is filed with the appropriate county clerks more than 6 months prior to the holding of the next general state election, each county clerk shall call a special election for the purpose of submitting to the electors the propositions relating to the establishment of the community college district. (MCL § 389.12.)

History. As amended by Pub Acts 1967, No. 231, imd eff July 10.

This section is derived, in part, from Pub Acts 1955, No. 188, § 10, as amended (former § 15.615(20)).

§ 15.615(113) Organizational election; issues to be submitted.] SEC. 13. At the organizational election there shall be submitted the following issues:

(a) Proposition to establish the community college district. The ballots shall read substantially as follows:

Shall a community college district comprised of County (or counties) be established in accordance with Act No. of the Public Acts of 1966?

(b) Proposition to establish the maximum annual tax rate.

(c) Election of the first board of trustees. (MCL § 389.13.)

History. This section is new.

§ 15.615(114) Board of trustees; election; terms of office.] SEC. 14. (1) The community college district shall be directed and governed by a board of trustees, consisting of 7 members, elected at large in the proposed community college district on a nonpartisan basis. At the organizational election there shall be elected 3 members for 6-year terms, 2 for 4-year terms and 2 for 2-year terms. Thereafter, at the next regular community college election immediately preceding the expiration of their terms of office, their successors shall be elected for terms of 6 years. Any community college district which on the effective date of this act has 6 board members, shall elect an additional trustee for a 6-year term at the next regular election held in the district. In a community college district which is comprised of 3 counties and is in operation on the effective date of this act, the board of trustees shall continue to consist of 9 members elected for 6-year terms, 3 of such members being elected from each of the 3 counties.

(2) When the organizational election is held at the same time as the general state election, the term of office of each member elected shall commence on January 1 following the organizational election.

(3) When the organizational election is held on a date other than the date of the general state election, each board member shall take office on the fifteenth day following the date of the organizational election. Regular terms of office shall commence on January 1 following the next general state election, however, the period of time from the date of the organizational election until January 1 following the next general state election shall be in addition to the regular terms to which each member was elected. (MCL § 389.14.)

History. This section is derived from Pub Acts 1955, No. 188, § 5, as amended (former § 15.615(15)).

Digest reference. See Callagan's Mich Dig. Schools and Education, § 34 et seq.

§ 15.615(115) Approval of propositions by majorities; election of trustees.] SEC. 15. (1) A community college district shall be established if:

(a) A majority of the electors of each of the counties included in the proposed community college district voting thereon approve the organization of the district.

(b) ♦ [A board of trustees in the required number is elected by each county voting thereon.

(2) If the proposition to organize the district fails of a proper majority, or if a board of trustees in the proper number is not elected a community college district shall not be established.

(3) A combined majority of the electors of the counties voting thereon shall approve the establishment of the maximum annual tax rate. If the proposition to establish the maximum annual tax rate fails to receive approval of a proper majority of the electors of the counties voting thereon and a community college district is established under the provisions of this section, the proposition to establish the maximum annual tax rate may be resubmitted at a regular election or at a special election called by the board of trustees for that purpose. If the proposition to establish the maximum annual tax rate fails after being submitted 3 times, the community college district is dissolved.]

♦
(MCL § 389.15.)

History. As amended by Pub Acts 1967, No. 285, imd eff August 1.

This section is derived, in part, from Pub Acts 1955, No. 188, § 10a, as added by Pub Acts 1961, No. 200, and amended (former § 15.615(20a)).

§ 15.615(116) Applicability of general election laws; duties of officials.] SEC. 16. The general election laws, including the voting of absent voters, and all laws of the state relating to the hours for the opening and closing of the polls at elections and for preserving the purity of elections and for preventing fraud and corruption shall govern all elections under this act so far as the same are applicable and not inconsistent with the provisions of this act. All county and local election officials shall perform their election duties for all regular and special elections held in accordance with the provisions of this chapter, including the proper giving of notices of registration and election. (MCL § 389.16.)

History. This section is derived from Pub Acts 1955, No. 188, § 5a, as added by Pub Acts 1967, No. 182, and amended (former § 15.615(15a)).

§ 15.615(117) Canvass of results.] SEC. 17. (1) The final results of the organizational election and succeeding elections of the community college district shall be canvassed by the county board of canvassers established by law.

(2) Where the election area involves more than 1 county the canvass shall be made by the county board of canvassers of the county containing the highest valuation of the community college district or proposed community college district. (MCL § 389.17.)

♦
History. This section is derived from Pub Acts 1955, No. 188, § 10c, as added by Pub Acts 1964, No. 237 (former § 15.615(20c)).

Cross-reference. County canvass, see § 6.1821 et seq., supra.

§ 15.615(118) Regular elections; time; special propositions.] SEC. 18. Regular elections of the community college district shall be held on the same date as the general state elections. At regular elections, in addition to the election of trustees, special propositions may be submitted to the vote of the electors when authorized by the board of trustees. (MCL § 389.18.)

History. This section is derived, in part, from Pub Acts 1955, No. 188, § 4a, as added by Pub Acts 1957, No. 182, and amended (former § 15.615(14a)).

1-10. [Reserved for use in future supplementation.]

11. **Moving site of facility.** Under former act, question of moving site of community college facility could not be submitted to voters of district. Op Atty Gen, May 2, 1966, No. 4434

§ 15.615(119) Special elections; calling; procedure.] SEC. 19. (1) Special elections of the community college district may be called by the board of trustees. The secretary of the board shall file a copy of the resolution of the board calling the election with the county clerks at least 60 days prior to the date of the election. The resolution of the board shall contain a statement of the propositions to be submitted to the electors.

(2) Upon receipt of the resolution each county clerk shall notify the county and local election officials of the calling of the special election. The election officials shall perform their regular election duties. (MCL § 389.19.)

History. This section is derived, in part, from Pub Acts 1955, No. 188, § 4b, as added by Pub Acts 1957, No. 182, and amended (former § 15.615(14b)).

Digest reference. See Callaghan's Mich Dig, Elections, § 7.

1-10. [Reserved for use in future supplementation.]

11. **Moving site of facility.** Under former act, special election under this section may not be called to vote on moving site of community college facility. Op Atty Gen, May 2, 1966, No. 4434.

§ 15.615(120) Election expenses.] SEC. 20. Expenses of elections of the community college district shall be paid by the board of trustees to the county and the several cities and townships upon presentation of statements therefor which shall not include charges for use of equipment or services of regular personnel of the counties, cities and townships unless otherwise agreed upon between the board of the community college district and the boards of the counties, cities and townships. (MCL § 389.20.)

History. This section is derived from Pub Acts 1955, No. 188, § 4b, as added by Pub Acts 1947, No. 182, and amended (former § 15.615(14b)).

§ 15.615(121) Annexation of territory; procedure; effective date; taxation; eligibility of electors.] SEC. 21. (1) The board of trustees of a community college district comprised of a county or counties by resolution may annex to the community college district in the manner provided in this act any contiguous county or any contiguous township not already included within the area of a community college district.

(2) Prior to the annexation election, the board of trustees shall obtain approval of the proposed annexation from the state board of education. Upon receipt of the approval, the secretary of the board of trustees shall file certified copies of the annexation resolution and

the approval with the clerk of the county or township to be annexed. When the resolution and approval are filed more than 9 months from the date of the next general state election, the county board of supervisors, or the township board, shall call a special election for the purpose of voting on the question of annexation to the community college district and of approving the maximum tax rate existing in the community college district.

(3) If the resolution and approval are filed less than 9 months but more than 50 days prior to the next general state election, then the propositions shall be presented at such election. Annexation becomes effective on the date of the election if both propositions receive majority approval of the electors voting thereon. Final results of the annexation election shall be canvassed as provided in section 17, except in the case of annexation to a township where the results shall be canvassed by the township board of canvassers established by law.

(4) By virtue of annexation, any territory heretofore or hereafter annexed to a community college district shall be subject to taxes levied for principal and interest of outstanding bonded indebtedness of the community college district.

(5) If any portion of the county or township to be annexed lies within a community college district at the time of the annexation election, then the electors residing in such territory shall not be eligible to vote on the propositions and such territory shall not become a part of the community college district. (MCL § 389 21.)

History. This section is new.

Digest reference. See Callaghan's Mich Dig. Schools and Education, § 10 et seq.

CHAPTER 2

COMMUNITY COLLEGE DISTRICT COMPRISED OF SCHOOL DISTRICTS

§ 15.615(131) Formation by school districts; approval; eligibility of districts. Sec. 31. (1) [A school district or] 2 or more contiguous school districts which operate grades kindergarten through 12 may ♦ form a community college district. When resolutions of the boards of education of contiguous school districts requesting the organization of the community college district are filed with the secretary of the board of education of the intermediate school district having the highest valuation in the proposed community college district area, he shall refer the questions of organizing the community college district and the proposed annual tax rate to the state board of education for approval. [When the board of education of a single school district adopts a resolution requesting the organization of a community college district the secretary of the board of education of that district shall refer such questions to the state board of education for approval.]

(2) For the [purpose] of this chapter, a school district operating grades kindergarten through 12 shall be eligible for the formation of a community college district even though a part of the district is within an existing community college district. ♦ [Except as provided in section 46 the] part shall not be included in the area of the community college district nor shall [a person] residing in [the]

principal and interest of outstanding bonded indebtedness of the community college district. (MCL § 389.44.)

History. This section is new.

§ 15.615(145) Annexation of territory; taxation.] SEC. 45. Whenever a school district which is not within the area of a community college district was heretofore or is hereafter annexed to a school district which is within a community college district, the annexed school district shall be a part of the community college district and subject to taxes levied within the tax rate established in the community college district and to taxes for the payment of principal and interest of outstanding bonded indebtedness of the community college district. (MCL § 389.45.)

History. This section is new.

§ 15.615(146) Single school district operating college district; boundaries.] SEC. 46. When a community college district is established by a single school district operating a community college as a department of the school district under Act No. 269 of the Public Acts of 1955, as amended, being sections 340.1 to 340.984 of the Michigan Compiled Laws, the boundaries of the community college district shall be coterminous with the boundaries of the school district at the time the community college district is established. (MCL § 389.46.)

History. Added by Pub Acts 1974, No. 40, imd eff March 13.

Statutory reference. Act No. 269 of 1955, above referred to, is § 15.3001 et seq., infra.

CHAPTER 15

COMMUNITY COLLEGE DISTRICT COMPOSED OF INTERMEDIATE SCHOOL DISTRICTS

§ 15.615(151) Formation by intermediate school districts; election; designation of territory; approval.] SEC. 51. (1) The board of education of an intermediate school district or the boards of 2 or more adjoining intermediate school districts acting as a single board may direct that the question of coming under the provisions of this act be submitted to the school electors of the territory affected at the annual school elections or at special school elections held in the local school districts of such territory. If any school district holds its annual election on a different date, it shall call a special election to be held on the same day of the annual elections. (2) The board of education of the intermediate school district or the joint board of 2 or more intermediate school districts shall designate the territory to be included in the proposed community college district and a uniform property tax question for the support of the community college, both propositions being subject to the approval of the state board of education. (MCL § 389.51.)

History. This section is derived from Pub Acts 1955, No. 188, § 10b, as added by Pub Acts 1963, No. 98, and amended (former § 15.615(20b)).

Cross-reference. Intermediate districts, see § 15.3291(1) infra.

Minnesota State Legislation Effecting Vocational Education Delivery

124.53 Vocational education

The state board is hereby designated the state board for vocational education and has the duty of cooperating with the United States office of education or other federal agency in the administration of the program of vocational education and is given all power necessary to such cooperation. The state board is authorized to make such expenditures as it may deem necessary to carry out the provisions hereof from money available for the purposes.

The state board shall appoint such officials or assistants as may be necessary, fix the salaries of such persons appointed, and make expenditures from the state funds appropriated for the salaries and necessary expenses of such officials and assistants, or use a portion of such funds in matching federal funds available for the same purpose. Laws 1959, Ex.Sess., c. 71, art. V, § 41.

121.11 State board

Subdivision 1. Powers. The state board of education shall serve for all purposes as the state board for vocational education.

Subd. 2. Certificates issued. The state board shall, under the laws prescribed therefor, issue all certificates to all persons employed in a public school to give instruction or supervision of teaching.

Subd. 3. Secondary school areas. (1) To facilitate and control the transportation of non-resident pupils, the state board shall divide the state into secondary school areas and the state board shall continue the administration of the legal provisions and regulations regarding areas. Each area shall contain at least one classified public secondary school and such districts and parts of districts as may conveniently be served by the secondary school. Upon a vote of its governing board any part of a district or the whole thereof may be transferred to an adjoining school area of any district containing a classified public secondary school, if that district is willing to have such district assigned to its area. The decision of any board to transfer any area between secondary school areas is subject to a referendum vote of the electorate of the district at a special election on the question pursuant to statutes for conduct of special elections. After such election, or vote of the board, the board of the district having voted on such transfer shall report to the state board the results of the election for the purpose of recording the transfers.

(2) The state board may formulate such rules as may be necessary for establishing, maintaining, and administering such school areas.

(3) The state board of education shall keep maps showing the official school area boundaries within the state.

(4) The state board of education shall keep maps showing the official school area boundaries within the state.

Subd. 4. No competition for students. The state board shall formulate such rules and regulations as may be necessary to the end that there shall be no competition between school districts for the enrollment of students.

121.21 Area vocational-technical schools

Subdivision 1. The board or any independent or special district may petition the state board to classify one or more of its schools as an area vocational-technical school.

Subd. 2. Upon receipt of such petition, the state board shall examine the petition and any supporting evidence which it may require. The state board shall conduct hearings, and may investigate school records and such other facts relating to vocational-technical training as it may deem appropriate.

Subd. 3. It is the purpose of this section to more nearly equalize the educational opportunities in certain phases of vocational-technical education to persons of the state who are of the age and maturity to profitably pursue training for a specific occupation. If the state board finds, as a result of its inquiry, that the establishment of an area vocational-technical school, according to the petition, would further the educational interests of all the people of the state, and is in accordance with the plans and program of the state department for the vocational and technical education of the people, it may approve the petition.

Subd. 4. If the petition is approved, the school shall be established by the district and classified by the state board as an area vocational-technical school and conducted under the general supervision of the state board in accordance with the rules and regulations of the state board. Notwithstanding the provisions of subdivision 3 and of this subdivision, after June 30, 1975 no area vocational-technical school shall be established unless specific legislation has authorized its establishment.

Subd. 5 repealed by Laws 1975, c. 432, § 98, effective June 30, 1976.

Subd. 6. The state board for vocational education shall promulgate, pursuant to chapter 15, such rules and regulations governing the operation and maintenance of schools so classified as will afford the people of the state an equal opportunity to acquire public vocational and technical education.

The rules shall provide for, but are not limited to, the following:

- (a) The area to be served by each school, which may include one or more districts or parts thereof, including unorganized territory;
- (b) Curriculum and standards of instruction and scholarship;
- (c) Attendance requirements, age limits of trainees, Minnesota non-resident attendance, the determination of the actual costs of providing individual programs, and attendance for which no tuition shall be charged, all to be determined in accordance with the provisions of sections 124.561 to 124.565;
- (d) The distribution and apportionment to the local districts of all funds, whether state or federal or other funds, which may be made available to the state board for vocational education for carrying out the purposes of post-secondary vocational-technical education in accordance with law and the approved state plan for vocational education;
- (e) Transportation requirements and payment of aid therefor;
- (f) Payment by the state board of tuition to school districts or post-secondary vocational-technical schools in another state; and
- (g) General administrative matters.

Subd. 7. Repealed by Laws 1975, c. 432, § 97.

Subd. 8. Any property of the state administered by the state board for vocational education in connection with teaching vocational education may be apportioned and distributed by the state board for vocational education to local school districts desiring to avail themselves of the benefits of this section. Laws 1959, Ex.Sess., c. 71, art. II, § 21. Subds. 9 and 10. Repealed by Laws 1975, c. 432, § 97.

123.351 Cooperative centers for vocational education

Subdivision 1. Establishment. Two or more independent school districts may enter into an agreement to establish a cooperative center to provide for vocational education and other educational services upon the vote of a majority of the full membership of each of the boards of the districts entering into the agreement. When a resolution approving this action has been adopted by the board of a district, the resolution shall be published once in a newspaper of general circulation in the district. If a petition for referendum on the question of the district entering into the agreement, containing signatures of qualified voters of the district equal to five percent of the number of voters at the last annual school election, is filed with the clerk of the board within 60 days after publication of the resolution, the board shall not enter into the agreement until the question has been submitted to the voters of the district at a special election. This election shall be conducted and canvassed in accordance with section 123.32. If a majority of the total number of votes cast on the question within the district is in favor of the proposition, the board may thereupon enter into an agreement to establish the center for purposes herein described.

Subd. 2. Name. A public corporation so created shall be known as (insert name), cooperative center no. and shall have an identification number assigned pursuant to section 122.03.

Subd. 3. Governing board. (a) The center shall be operated by a center board of not less than five members which shall consist of members from school boards of each of the participating school districts within the center, appointed by their respective school boards. Each participating school district shall have at least one member on the board. The board shall choose an administrative officer to administer board policy and directives who shall serve as an ex officio member of the board but shall not have a vote.

(b) The terms of office of the first members of the board shall be determined by lot as follows: one-third of the members for one year, one-third for two years, and the remainder for three years, all terms to expire on June 30 of the appropriate year; provided that if the number of members is not evenly divisible by three, the membership will be as evenly distributed as possible among one, two and three year terms with the remaining members serving the three year term. Thereafter the terms shall be for three years commencing on July 1 of each year. If a vacancy occurs on the center board, it shall be filled by the appropriate school board within 90 days. A person appointed to the center board shall qualify as a board member by filing with the chairman a written certificate of appointment from his school board.

121.213 Area vocational-technical institutes and community colleges; legal counseling and service programs

Notwithstanding the provisions of Minnesota Statutes, Sections 8.06 and 136.11 or any rules or regulations adopted pursuant thereto, an area vocational-technical institute or community college student association governing student activities on campus may expend money for the purpose of funding a program to provide legal counseling and services for students. The money to be expended shall be from that portion of the area vocational-technical institute student senate funds or community college activity fund account allocated to the student association and derived solely from fees received from students.

Laws 1975, c. 212, § 1.

Title of Act:

An Act relating to education; authorizing certain governing student associations of institutions of higher learning

to expend money for the purpose of funding a legal counseling and services program. Laws 1975, c. 212.

121.214 Vocational-technical building fund

Subdivision 1. Purpose. A vocational-technical building fund is created as a separate bookkeeping account in the general books of the state for the purpose of providing money appropriated to the state board of education for the acquisition and betterment of public land, buildings, and capital improvements needed for the area vocational-technical education program of the state, as established and annually revised in the state plan for the administration of vocational education, for which the state board of education is responsible under the provisions of Minnesota Statutes, Sections 121.21, 123.351, 124.53 to 124.62, and other applicable laws.

Subd. 2. Receipts. The commissioner of finance and treasurer shall deposit in the fund as received all proceeds of vocational-technical building bonds, except accrued interest and premiums received upon the sale thereof. All such receipts are annually appropriated for the permanent acquisition purposes of the fund, and shall be and remain available for expenditure in accordance with this section until the purposes of the appropriations have been accomplished or abandoned.

Subd. 3. Disbursements. Disbursements from the fund shall be made by the state treasurer upon the order of the commissioner of finance at the times and in the amounts requested by the state board of education in accordance with the applicable appropriation acts, for grants to school districts for the acquisition and betterment of land, buildings, and capital improvements for area vocational-technical institutes, upon the conditions and in accordance with all standards, criteria, and priorities established in the state plan.

Laws 1975, c. 436, § 1, eff. June 5, 1975.

Library References

States § 127.

C.J.S. States § 162.

121.21. Vocational-technical building bonds

Subdivision 1. Purpose; appropriation. For the purpose of providing money appropriated from the vocational-technical building fund for the acquisition of public land, buildings, and capital improvements needed for the state plan for the administration of vocational education in accordance with the provisions of section 121.214, when requested by the state board of education, the commissioner of finance shall sell and issue bonds of the state of Minnesota for the prompt and full payment of which, with interest thereon, the full faith and credit and taxing powers of the state are irrevocably pledged. Bonds shall be issued pursuant to this section only as authorized by a law specifying the purpose thereof and the maximum amount of the proceeds authorized to be expended therefor, as set forth in section 121.214. Any such law, together with this section and the laws herein referred to, constitutes complete authority for the issue, and such bonds shall not be subject to restrictions or limitations contained in any other law.

Subd. 2. Issuance. The bonds shall be sold upon sealed bids and upon notice, at a price, in form and denominations, bearing interest at a rate or rates, maturing in amounts and on dates, subject to prepayment upon notice and at times and prices, payable at a bank or banks within or outside the state, with or without provisions for registration, conversion, exchange, and issuance of notes in anticipation of the sale or delivery of definitive bonds, and in accordance with further regulations, as the commissioner of finance shall determine subject to the approval of the attorney general, but not subject to the provisions of sections 15.0411 to 15.0422. The bonds shall be executed by the commissioner of finance and attested by the state treasurer under their official seals. The signatures on the bonds and on any interest coupons and the seals may be printed or otherwise reproduced, except that each bond shall be authenticated by the manual signature on its face of one of the officers or of a person authorized to sign on behalf of a bank designated by them as authenticating agent. The commissioner of finance shall ascertain and certify to the purchasers of the bonds the performance and existence of all acts, conditions, and things necessary to make them valid and binding general obligations of the state of Minnesota, subject to the approval of the attorney general.

Subd. 3. Expenses. All expenses incidental to the sale, printing, execution, and delivery of bonds pursuant to this section, including but not limited to actual and necessary travel and subsistence expenses of state officers and employees for such purposes, shall be paid from the vocational-technical building fund and the amounts necessary therefor are appropriated from that fund; provided that if any amount is specifically appropriated for this purpose in an act authorizing the issuance of bonds pursuant to this section, such expenses shall be limited to the amount so appropriated.

Subd. 4. Vocational-technical building bond account in the state bond fund. The commissioner of finance shall maintain in the state bond fund a separate bookkeeping account designated as the vocational-technical building bond account, to record receipts and disbursements of money transferred to the fund to pay vocational-technical building bonds and interest thereon, and of income from the investment of such money, which income shall be credited to the account in each fiscal year in an amount equal to the approximate average rate of return that year on all funds invested by the state treasurer, as determined by the treasurer, times the average balance in the account that year.

124.57 Aid for vocational education

Whenever any district shall have established a vocational school, department, or classes in accordance with the rules and regulations established by the state board adopted by that board, and the plan for vocational education, and approved by the United States office of education or other federal agency to which its functions are assigned, the state board shall reimburse such district or state tax supported institution for its expenditures for salaries and necessary travel of vocational teachers or other reimbursable expenditures from federal funds and may supplement such federal funds with such state aid as it may deem desirable under such rules as it may adopt, provided, however, that in the event of such funds not being sufficient to make such reimbursement in full, the state board shall prorate the respective amounts available to the various districts entitled to receive reimbursement. All instruction may be given at the place of the abode of the pupils, and adults may be given instruction in adjoining or nearby districts.

In like manner the state board shall have power to reimburse other governmental agencies for expenditures for salaries and necessary travel expenses of vocational teachers from federal funds, according to rules and regulations adopted by the state board.

When local districts desire but cannot provide vocational instruction for the related training required by apprentices and other learners in the trade, industrial, and distributive fields, the state board is empowered upon request of such local district or districts to employ itinerant vocational teachers to provide this service and pay the salary and necessary travel expense from authorized federal and state vocational aid funds under such rules as it may adopt. An itinerant vocational teacher in this section is defined as a vocational teacher employed to give part-time or periodic vocational instruction in one or more districts.

This section shall apply only to secondary and adult vocational education programs. Sections 124.561 to 124.565 shall not apply to secondary and adult vocational education programs. Laws 1975, Chapter 432, Section 68 shall be effective July 1, 1976.

Amended by Laws 1975, c. 432, § 68, eff. July 1, 1976.

1975 Amendment. Added the last paragraph.

1. Construction and application

A local school board could not turn over the operation and control of the area vocational-technical school operated under the provisions of § 121.21 to the State Junior College Board, the State College Board, or the Board of Regents of the University of Minnesota without the consent and approval of

the State Board of Education. Op. Atty. Gen., 161-b-10, Feb. 9, 1965.

Federal and state funds allotted to the State Board for Vocational Education could be used by the board to reimburse courses or programs meeting the standards of the State Plan for Vocational Education that are conducted in public junior colleges, public state colleges or the University of Minnesota. Id.

(c) The first meeting of a center board shall be at a time mutually agreed upon by board members. At this meeting, the center board shall choose its officers and conduct any other necessary organizational business. Thereafter the center board shall meet on the first of July of each year or as soon thereafter as practicable pursuant to notice sent to all center board members by the chief executive officer of the center.

(d) The officers of the center board shall be a chairman, vice chairman, clerk and treasurer, no two of whom when possible shall be from the same school district. The chairman shall preside at all meetings of the center board except in his absence the vice chairman shall preside. The clerk shall keep a complete record of the minutes of each meeting and the treasurer shall be the custodian of the funds of the center. Insofar as applicable, sections 123.33 and 123.34, shall apply to the board and officers of the center.

(e) Each participating school district shall have equal voting power with at least one vote. A majority of the center board shall be a quorum. Any motion other than adjournment shall pass only upon receiving a majority of the votes of the entire center board.

Subd. 4. Powers and duties. (a) The center board shall have the general charge of the business of the center and the ownership of facilities. Where applicable, section 123.36, shall apply. The center board may not issue bonds in its behalf. Each participating district may issue its bonds for the purpose of acquisition and betterment of center facilities in the amount certified by the center board to such participating district in accordance with chapter 475.

(b) The center board (1) may furnish vocational offerings to any eligible person residing in any participating district and (2) may provide special education for the handicapped and disadvantaged.

(c) In accordance with subdivision 5, clause (b), the center board shall certify to each participating district the amount of funds assessed to the district as its proportionate share required for the conduct of the educational programs, payment of indebtedness, and all other proper expenses of the center.

(d) The center board shall employ and contract with necessary qualified teachers and administrators and may discharge the same for cause pursuant to section 125.12. The board may employ and discharge other necessary employees and may contract for other services deemed necessary.

(e) The center board may provide an educational program for high school and adult vocational phases of instruction. The high school phase of its educational program shall be offered as a component of the comprehensive curriculum offered by each of the participating school districts. Graduation shall be from the student's resident high school district. Insofar as applicable, sections 123.35 to 123.40, shall apply.

(f) The center board may prescribe rates of tuition for attendance in its programs by adults and nonmember district secondary students.

Subd. 5. Financing. (a) Any center board established pursuant to this section is a public corporation and agency and may receive and disburse federal, state, and local funds made available to it. No participating school district shall have any additional individual liability for the debts or obligations of the center except that assessment which has been certified as its proportionate share in accordance with subdivisions 5, clause (b) and 4, clauses (a) and (c). A member of the center board shall have such liability as is applicable to a member of an independent school district board. Any property, real or personal, acquired or owned by the center board for its purposes shall be exempt from taxation by the state or any of its political subdivisions.

(b) The center board may, in each year, for the purpose of paying any administrative, planning, operating, or capital expenses incurred or to be incurred, assess and certify to each participating school district its proportionate share of any and all expenses. This share shall be based upon an equitable distribution formula agreed upon by the participating districts and

approved by the state commissioner of education with approval by the state board of vocational education. Each participating district shall remit its assessment to the center board within 30 days after receipt. The assessments shall be paid within the maximum levy limitations of each participating district.

Subd. 6. State board approval. Prior to the commencement of the operation of any center the agreement entered into by participating districts shall be approved by the state board of education.

Subd. 7. Laws governing independent school districts applicable. As of the effective date of the creation of any center as contained in the agreement establishing the center, the organization, operation, maintenance, and conduct of the affairs of the center shall be governed by the general laws relating to independent school districts of the state unless provided otherwise herein or by statute passed hereafter.

Subd. 8. Addition and withdrawal of districts. Upon approval by majority vote of school board, of the center board, and of the state board of education, an adjoining school district may become a member in the center and be governed by the provisions of this section and the agreement in effect.

Any participating district may withdraw from the center and from the agreement in effect by a majority vote of the full board membership of the participating school district desiring withdrawal and upon compliance with provisions in the agreement establishing the center. Upon receipt of the withdrawal resolution reciting the necessary facts, the center board shall file a certified copy with the county auditors of the counties affected. The withdrawal shall become effective at the end of the next following school year but the withdrawal shall not affect the continued liability of the withdrawing district for bonded indebtedness it incurred prior to the effective withdrawal date.

Subd. 9. Existing centers. Centers operating pursuant to section 471.59 which have been approved by the state board of education prior to August 1, 1974, shall be subject to its provisions except subdivision 1. Any changes in center agreements necessary to comply with this section shall be completed within twelve months after August 1, 1974 and filed with the state board by the administrator of each center. Centers operating pursuant to Laws 1967, Chapter 822, as amended, Laws 1969, Chapter 775, as amended, and Laws 1960, Chapter 1060, as amended shall not be subject to the provisions of this section.

Laws 1974, c. 252, § 1.

§ 3303.07 Training programs for fire fighters; creation of advisory committee for fire fighter training.

The state superintendent of public instruction shall, with the advice and counsel of the advisory committee for fire fighter training, assist in the establishment and maintenance by any state agency, or any county, township, city, village, or school district of a fire service training program for the training of all paid and volunteer firefighters in this state. The state board of education shall adopt standards to regulate such fire fighter training programs which may include, but need not be limited to, provisions for minimum course of study, minimum hours of instruction, attendance requirements, required equipment and facilities, qualifications of instructors, basic physical and methods training required of fire fighters, and training schedules. The state superintendent of public instruction shall provide for the classification and chartering of such training programs and may revoke any charter for failure to meet standards. The state superintendent of public instruction shall prescribe a certificate which shall be issued by it to each person satisfactorily completing a chartered training program.

The advisory committee for fire fighter training consisting of seven members shall be approved by the state superintendent of public instruction, one member being selected by each of the following: The Ohio State Firemen's Association, the Ohio Association of Professional Fire Fighters, the Ohio Fire Chiefs Association, Inc., the Ohio Inspection Bureau, the International Association of Fire Chiefs, Inc., the International Association of Fire Fighters, and the State Fire Marshal. The advisory committee may select a chairman who shall serve for a term of one year.

Nothing in this section invalidates any part of section 3737.42 of the Revised Code relative to the fire training academy.

§ 3311.11 Joint high school district. (GC § 4830-10)

The boards of education of two or more adjoining school districts, by a majority vote of the full membership of each board, may, at any time prior to September 1, 1943, unite such districts for high school purposes which united districts shall be known as a "joint high school district." Each board also may submit the question of levying a tax on the property in their respective districts for the purpose of purchasing a site and erecting a building, and issue bonds, as is provided by sections 133.04, 133.17, and 133.18 of the Revised Code in case of erecting or repairing schoolhouses. Such question of tax levy must carry in each district before it becomes operative in either. If such boards have sufficient money in the treasury to purchase a site and erect such building, or if there is a suitable building in either district owned by the board of education that can be used for a high school building it will not be necessary to submit the proposition to vote, and the boards may appropriate money from their funds for this purpose.

The board of elections of the county or counties in which territory of the joint vocational school district is located shall cause to be published in a newspaper of general circulation in such district an advertisement of the proposed tax levy question together with a statement of the amount of the proposed additional levy once each week for three consecutive weeks, prior to the election at which the question is to appear on the ballot.

If a majority of the electors voting on the question of levying such tax vote in favor of such levy, the joint vocational school district board of education shall annually make the levy within such district at the additional rate, or at any lesser rate, and the county auditor of each affected county shall annually place such levy on the tax duplicate of the school districts in his county participating in the joint vocational school district. The taxes realized from said levy shall be collected at the same time and in the same manner as other taxes on such duplicate and said taxes, when collected, shall be paid to the clerk of the joint vocational school district and deposited by him to a special fund which shall be established by the joint vocational school district board of education for all revenue derived from any tax levied pursuant to this section and for the proceeds of anticipation notes which shall be deposited in such fund. After the approval of such levy, the joint vocational school district board of education may anticipate a fraction of the proceeds of such levy and from time to time, during the life of such levy, but in any year prior to the time when the tax collection from such levy so anticipated can be made for that year, issue anticipation notes in an amount not exceeding fifty per cent of the estimated proceeds of such levy to be collected in each year up to a period of five years after the date of the issuance of such notes, less an amount equal to the proceeds of such levy obligated for each year by the issuance of anticipation notes, provided, that the total amount maturing in any one year shall not exceed fifty per cent of the anticipated proceeds of such levy for that year. Each issue of notes shall be sold as provided in sections 133.01 to 133.65 of the Revised Code, and shall, except for such limitation that the total amount of such notes maturing in any one year shall not exceed fifty per cent of the anticipated proceeds of such levy for that year, mature serially in substantially equal installments, during each year over a period not to exceed five years after their issuance. If such notes are issued, the amount necessary to pay the interest and principal thereon shall be deemed appropriated for such purposes from the proceeds of such levy, and appropriations from such levy by the joint vocational school district board of education shall be limited each year to the balance available in excess of such amount.

* HISTORY: 134 v. S. 455 (E.R. 6-28-72); 135 v. S. 444 (E.R. 9-11-73); 136 v. H. 1. E.R. 6-13-75.

§ 3311.12 High school committee. (GC § 4830-11)

Any high school established under section 3311.11 of the Revised Code shall be under the management of a high school committee, consisting of two members of each of the boards creating such joint district, elected by a majority vote of such boards. Their membership on such committee shall be for the same term as their terms on the boards which they respectively represent. Such high school shall be free to all youth of school age within each district, subject to the rules and regulations adopted by the high school committee, in regard to the qualifications in scholarship requisite for admission. Such rules and regulations shall be of uniform operation throughout each district.

§ 3311.13 Funds for maintenance and support of joint high school. (GC § 4830-12)

The funds for the maintenance and support of a joint high school district shall be provided by appropriations from the general fund of each school district, in proportion to the total valuation of property in the respective districts, which must be placed in a separate fund in the treasury of the board of education of the district in which the schoolhouse is located, and paid out by action of the high school committee for the maintenance of the school.

§ 3311.14 Dissolution of district. (GC § 4830-13)

Any union of school districts for high school purposes as provided in sections 3311.11 to 3311.13, inclusive, of the Revised Code, may be dissolved upon passage of resolutions by one or more of the boards of education of the school districts participating in such union demanding such dissolution, or upon failure of any one or more of the said boards of education to pay their proportion of the maintenance of the joint high school, provided that during the continuance of such union the obligations, financial and otherwise, involved in the acts of the joint high school committee shall be binding upon each and all of the participating districts. In the event of failure of the boards of the participating districts to agree upon the terms of dissolution of the union of districts, or when such boards fail, within sixty days from the time when dissolution has been resolved upon to effect a settlement of property interests and indebtedness involved in the establishment and maintenance of the joint high school in the case, the county board of education of the county in which such joint high school is located shall make equitable adjustments, and the terms of settlement fixed by the said county board of education shall be binding upon the several school districts concerned.

§ 3311.15 Certification to county auditor of estimate to maintain joint high school. (GC § 4830-14)

Boards of education exercising control for the purpose of taxation over territory within a joint high school district shall determine by estimate the amount necessary for the maintenance of any joint high school in such territory and shall certify such amount to the county auditor in the annual budget. All funds derived from levies so made shall be kept separate and be paid out for the maintenance of the school for which they were made.

§ 3311.16 Plan for joint vocational school districts.

Any local, exempted village, city, or county board of education, or any combination of such districts, referred to in sections 3311.16, 3311.17, and 3311.18 of the Revised Code as the initiating unit, may make or contract for the making of a study pertaining to the need to establish within the county, or within an area comprised of two or more adjoining counties, a joint vocational school district, and for the preparation of a plan for the establishment and operation of a joint vocational school district covering the territory of two or more school districts within such county or counties. Any local, exempted village, or city school district in the county or counties may participate with the initiating unit in the cost of such study and plan. Such plan shall be submitted to the state board of education by the initiating unit.

§ 3311.19 Joint vocational school district board; clerk; executive officer; compensation and mileage allowance.

(A) The management and control of a joint vocational school district shall be vested in the joint vocational school district board of education. Where a joint vocational school district is composed only of two or more local school districts located in one county, or when all the participating districts are in one county and the boards of such participating districts so choose, the county board of education of the county in which the joint vocational school district is located shall serve as the joint vocational school district board of education. Where a joint vocational school district is composed of local school districts of more than one county, or of any combination of county, local, city, or exempted village school districts, unless administration by the county board of education has been chosen by all the participating districts in one county pursuant to this section, ♦ the board of education of the joint vocational school district shall be composed of one or more persons who are members of the boards of education from each of the city, exempted village, or county school districts affected to be appointed by the boards of education of such school districts. In such joint vocational school districts the number and terms of members of the joint vocational school district board of education and the allocation of a given number of members to each of the city, exempted village, and county districts

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shall be determined in the plan for such district, provided that each such joint vocational school district board of education shall be composed of an odd number of members.

(B) Notwithstanding division (A) of this section, a county board of education that has members of its board serving on a joint vocational school district board of education may make a request to the joint vocational district board that the joint vocational school district plan be revised to provide for one or more members of boards of education of local school districts that are within the county school district and within the joint vocational school district to serve in the place of its county board of education members. If agreement is obtained among a majority of the boards of education that have a member serving on the joint vocational school district board of education and among a majority of the local school district boards of education included in the district and located within the county school district whose board requests the substitution, the state board of education may revise the joint vocational school district plan to conform with such agreement.

(C) If the board of education of any school district included within a joint vocational district that has had its board membership revised under division (B) of this section requests the joint vocational school district board to submit to the state board of education a revised plan under which one or more joint vocational board members chosen in accordance with a plan revised under such division would again be chosen in the manner prescribed by division (A) of this section, the joint vocational board shall submit the revised plan to the state board of education, provided the plan is agreed to by a majority of the boards of education represented on the joint vocational board, a majority of the local school district boards included within the joint vocational district, and each county board of education affected by such plan. The state board of education may revise the joint vocational school district plan to conform with the revised plan.

(D) The vocational schools in such joint vocational school district shall be available to all youth of school age within the joint vocational school district subject to the rules and regulations adopted by the joint vocational school district board of education in regard to the standards requisite to admission. A joint vocational school district board of education shall have the same powers, duties, and authority for the management and operation of such joint vocational school district as is granted by law to a board of education of a city school district, and shall be subject to all the provisions of law that apply to a city school district.

(E) Where a county board of education has been designated to serve as the joint vocational school district board of education, the county superintendent of schools shall be the executive officer for the joint vocational school district, and the board may provide for additional compensation to be paid to him by the joint vocational school district, but he shall have no continuing tenure other than that of county superintendent. The superintendent of schools of a joint vocational school district shall exercise the duties and authority vested by law in a superintendent of schools pertaining to the operation of a school district and the employment and supervision of its personnel. The joint vocational school district board of education shall appoint a clerk of the joint vocational school district who shall be the fiscal officer for such district and who shall have all the powers, duties, and authority vested by law in a clerk of a board of education. Where a county board of education has been designated to serve as the joint vocational school district board of education such board may appoint the county superintendent of schools as the clerk of the joint vocational school district.

(F) Each member of a joint vocational school district board of education shall be paid such compensation as the board may provide by resolution, provided that such compensation shall not exceed twenty dollars a meeting and mileage at the rate of ten cents a mile to and from meetings of the board not exceeding twelve meetings in any one year.

§ 3311.21 Tax levy; notes.

The board of education of a joint vocational school district by a vote of two-thirds of its full membership may at any time adopt a resolution declaring the necessity to levy a tax in excess of the ten-mill limitation for a period not to exceed ten years to provide funds for any one or more of the following purposes, which may be stated in the following manner in such resolution, the ballot, and the notice of election: purchasing a site of enlargement thereof and for the erection and equipment of buildings, or for the purpose of erecting, improving, or rebuilding thereof, or for the purpose of providing for the current expenses of the joint vocational school district for a continuing period for the purpose of providing for the current expenses of the joint vocational school district. Such resolution shall specify the amount of the proposed additional rate and, if the levy provides for, but is not limited to, current expenses, shall apportion the annual rate of the levy between current expenses and the other purpose or purposes. Such apportionment may, but need not, be the same for each year of the levy, but the respective portions of the rate actually levied each year for current expenses and the other

purpose or purposes shall be limited by such apportionment. The portion of the rate actually levied for current expenses shall be used in applying division (A) of section 3317.01 and the applicable provisions of section 5713.11 of the Revised Code, and the portion of the rate apportioned to the other purpose or purposes shall be used in applying section 5713.11 of the Revised Code requiring the reduction of an additional levy because of additions to the total valuation of property within the school district which have resulted from improvements which have been added to the tax duplicate. On the adoption of such resolution the joint vocational school district board of education shall certify such resolution to the board of elections of the county containing the most populous portion of the joint vocational school district, which board shall receive resolutions for filing and send them to the boards of elections of all other counties in which territory of such joint vocational school district is located and shall furnish all ballots for the election, as provided in section 3505.071 [3505.07.1] of the Revised Code, and shall prepare the election notice, and the board of election of each county in which the territory of such district is located shall make the other necessary arrangements for the submission of the question to the electors of the joint vocational school district at the next primary or general election occurring not less than sixty days after such resolution was received from the joint vocational school district board of education, or at a special election to be held at a time designated by such joint vocational school district board of education, which date shall not be earlier than sixty days after the adoption and certification of such resolution nor later than one hundred twenty days thereafter.

§ 3313.91 Purchase of vocational education from private source.

Any public board of education may contract with any public agency, board, or bureau, or with any private individual or firm for the purchase of any vocational education or vocational rehabilitation service for any resident of the district under the age of twenty-one years and may pay for such services with public funds. Any such vocational education or vocational rehabilitation service shall meet the same requirements, including those for teachers, facilities, and equipment, as those required of the public schools and be approved by the state department of education.

The state board of education may assign school districts to joint vocational districts and shall require districts to enter into contractual agreements pursuant to section 3313.90 of the Revised Code so that special education students as well as others may receive suitable vocational services.

§ 3313.90 Vocational education programs.

Each school district shall establish and maintain a vocational education program adequate to prepare a pupil enrolled therein for an occupation which program shall meet standards adopted by the state board of education. A school district that is a member of a joint vocational school district or that contracts with a joint vocational school district or another school district for vocational education and that meets the standards adopted by the state board of education is in compliance with this section, which standards shall include criteria for the participation by nonpublic students in such programs without financial assessment, charge, or tuition to such student except such assessments, charges, or tuition paid by resident public school students in such programs. Such nonpublic school students shall be included in the average daily membership of the school district maintaining the vocational education program as a part-time student in proportion to the time spent in the vocational education program.

In meeting standards established by the state board of education, school districts, where practicable, shall provide vocational programs in high schools. A minimum enrollment of fifteen hundred pupils in grades nine through twelve is established as a base for comprehensive vocational course offerings. A school district may meet this requirement alone, through a cooperative arrangement pursuant to section 3313.92 of the Revised Code, through school district consolidation, by membership in a joint vocational school district, by contract with a school licensed by any state agency established by the Revised Code which school operates its courses offered for contracting with public schools under standards as to staffing and facilities comparable to those prescribed by the state board of education for public schools provided no instructor in such courses shall be required to be certificated by the state department of education, or in a combination of such ways. Exceptions to the minimum requirement of fifteen hundred pupils may be made by the state board of education based on sparsity of population or other factors indicating that comprehensive educational and vocational programs as required by this section can be provided through an alternate plan.

Approval of state funds for the construction and operation of vocational facilities in any school district shall be contingent upon a comprehensive vocational program plan approved by the state board of education no later than July 1, 1970. The state board of education shall not approve a school district plan unless the plan proposed reasonably meets the vocational needs of other school districts in the general area of the school district submitting the plan. The plan shall be submitted to the state board of education no later than April 1, 1970. Such plan shall contain:

(A) The organization for vocational education pursuant to the requirements of this section;

(B) Vocational programs to be offered in the respective comprehensive high schools, in specialized schools or skill centers, and in joint vocational schools;

(C) Remodeled, additional, and new vocational facilities required at the respective locations.

In approving the organization for vocational education the state board of education shall provide that no school district is excluded in the state-wide plan.

§ 3354.01 Definitions.

As used in sections 3354.01 to 3354.18, inclusive, of the Revised Code:

(A) "Community college district" means a political subdivision of the state and a body corporate with all the powers of a corporation, comprised of the territory of one or more contiguous counties having together a total population of not less than seventy-five thousand preceding the establishment of such district, and organized for the purpose of establishing, owning, and operating a community college within the territory of such district.

(B) "Contiguous counties" means counties so located that each such county shares at least one boundary in common with at least one other such county in the group of counties referred to as being "contiguous."

(C) "Community college" means a public institution of education beyond the high school organized for the principal purpose of providing for the people of the community college district wherein such college is situated the instructional programs defined in this section as "arts and sciences" and "technical," or either, and may include the "adult-education" program as defined in this section, not exceeding two years' duration.

A university maintained and operated by a municipality located in a county having a total population equal to the requirement for a community college district as set forth in division (A) of section 3354.01 of the Revised Code and is found by the Ohio board of regents to offer instructional programs which are offered in the community and which are equivalent to those required of community colleges shall be, for the purposes of receiving state or federal financial aid only, considered a community college and shall receive the same state financial assistance granted to community colleges but only in respect to students enrolled in their first and second year of post high school education in the kind of instructional programs offered by the municipal university.

(D) "Arts and sciences program" means a curricular program of two years or less duration, provided within a community college, planned and intended to enable students to gain academic credit for courses generally comparable to courses offered in the first two years in accredited colleges and universities for the purpose of earning either to enable students to transfer to such colleges and universities for the purpose of earning baccalaureate degrees or to enable students to terminate academic study after two years with a proportionate recognition of academic achievement.

(E) "Adult-education program" means the dissemination of post high school educational service and knowledge, by a community college, for the occupational, cultural, or general educational benefit of adult persons, such educational service and knowledge not being offered for the primary purpose of enabling such persons to obtain academic credit or other formal academic recognition.

(F) "Charter amendment" means a change in the official plan of a community college for the purpose of acquiring additional lands or structures, disposing of or transferring lands or structures, creation of structures, or creating or abolishing of one or more academic departments corresponding to generally recognized fields of academic study.

(G) "Technical program" means a post high school curricular program of two years or less duration, provided within a community college, planned and intended to enable students to gain academic credit for courses designed to prepare such students to meet the occupational requirements of the community.

(H) "Operating costs" means all expenses for all purposes of the community college district except expenditures for permanent improvements having an estimated life of usefulness of five years or more as certified by the fiscal officer of the community college district.

Wisconsin State Legislation Effecting Vocational Education Delivery

CHAPTER 38

VOCATIONAL, TECHNICAL AND ADULT EDUCATION; COUNTY TEACHERS COLLEGES

38.001	Mission.	38.14	District board powers.
38.01	Definitions.	38.16	District tax levy.
38.02	Establishment.	38.18	Contracts and bidding.
38.04	Board of vocational, technical and adult education; powers and duties.	38.20	Adjustment of assets and liabilities.
38.06	District boundaries.	38.22	Admission requirements.
38.08	Composition and organization of district board.	38.24	Fees and tuition.
38.10	Appointment of district board members.	38.26	Course fees.
38.12	District board duties.	38.28	State aid.
		38.30	Special aid for veterans.

38.001 Mission. The board shall be responsible for the initiation, development, maintenance and supervision of programs with specific occupational orientations below the baccalaureate level, including terminal associate degrees, training of apprentices and adult education below the professional level.

History: 1971c 106, 125, 211.

38.01 Definitions. In this chapter:

(1) "Board" means the board of vocational, technical and adult education.

(2) "District" means a vocational, technical and adult education district established under this chapter.

(3) "District board" means the district board in charge of the vocational, technical and adult education schools of a district.

(4) "School district" means a school district operating high school grades.

(5) "School board" means the school board in charge of the public schools of a school district.

(6) "School year" means the time commencing with July 1 and ending with the next succeeding June 30.

(7) "Associate degree program" means a 2-year, post-high school program in an area designated and approved by the board for which the course requirements are established by the board.

(8) "Collegiate transfer program" means a state-wide, full-time program, designated and approved by the board, in which the credits earned may be transferable to a 4-year institution of higher education.

(9) "Vocational diploma program" means a one- or 2-year, full-time program in an area designated and approved by the board for which the course requirements are established by the board.

(10) "Vocational-adult program" means a part-time vocationally oriented program established by a district board which has not been approved by the board.

History: 1971c 154, 211.

38.02 Establishment. There is established under this chapter a system of vocational, technical and adult education to foster and maintain instruction in courses approved by the board in part-time and full-time day or evening classes. Every person at least the age specified in s. 118.15 (1) (b) who can profit thereby is eligible to receive instruction under this chapter and rules established by the board.

History: 1971c 154.

38.04 Board of vocational, technical and adult education; powers and duties. (1) **GENERAL.** The board shall determine the organization, plans, scope and development of vocational, technical and adult education. For state aid, credit determination and other purposes, the board shall establish criteria for the establishment of district schools and shall classify and name the district schools.

(2) **DIRECTOR.** The board shall appoint a director, outside the classified service, to serve at its pleasure.

(3) **STAFF.** The board shall appoint such staff as is necessary under the classified service. Three

positions in addition to the director shall be filled outside the classified service.

(4) TEACHER AND COURSE REQUIREMENTS.

(a) The qualifications of teachers and the courses of study offered in district schools shall be approved by the board.

(b) The board may authorize district boards to grant associate degrees to those students who successfully complete associate degree programs.

(c) Collegiate transfer programs shall not comprise more than 25% of the credit hours offered in any vocational, technical and adult education district.

(5) COOPERATE WITH FEDERAL GOVERNMENT. The board shall cooperate with the federal government in carrying out any federal act pertaining to vocational, technical and adult education.

(6) GIFTS AND GRANTS. The board may accept gifts, grants, bequests and devises to be used in the execution of its functions.

(8) PART-TIME INSTRUCTION IN AGRICULTURE. The board may cooperate with any school organized under this chapter or ch. 115 or 120 in offering part-time instruction in agriculture for persons at least the age specified in s. 118.15 (1)

(b) The governing body of such school may provide for such part-time instruction and may appropriate funds for such purpose. The authorities entitled by law to receive and disburse funds for schools furnishing instruction under this subsection may receive and use for such purpose federal funds appropriated by the board and all donations.

(9) TRAINING PROGRAM FOR FIREMEN. In order to promote safety to life and property, the board may establish and supervise a training program in fire prevention and protection. The training program shall be available to members of volunteer and paid fire departments maintained by public and private agencies, including industrial plants. The council on fire prevention training programs shall advise the board on the establishment and maintenance of the program.

(10) ADDITIONAL FACILITIES. The board shall review and approve any proposals by district boards for land acquisition, additional or new facilities, rentals and remodeling of existing facilities, prior to the letting of contracts to construct, remodel, rent or incur debt for such facilities or acquisition of land.

(11) UNIFORM ACCOUNTING SYSTEMS. The board shall establish a uniform accounting system for fiscal, enrollment, program and other data provided by the district boards as it deems necessary and shall require common use of the fiscal year for operations and data reporting. By July 1, 1974, the board shall require that all districts prepare their budgets in a uniform

program budget format and transmit approved copies of the budget to the board by October 1 of each year.

(12) PRISON INMATE EDUCATIONAL PROGRAM. The board may establish vocational educational programs for inmates within the state correctional system and contract with the department of health and social services for reimbursement of that portion of the district program costs which exceeds amounts received as state and federal aid.

History: 1971 c. 154, 211; 1973 c. 90, 353.

38.06 District boundaries. (1) Each district shall include one or more counties, municipalities or school districts in any contiguous combination.

(2) In this section, "reorganization" means any alteration, dissolution, creation or merger of any district.

(3) (a) Upon its own motion or upon approval of a petition filed under sub. (4), the board may issue a district reorganization order. Prior to issuing an order under this subsection, the board shall conduct such studies, investigations and hearings as it deems necessary.

(b) Any reorganization order issued by the board shall take effect on the July 1 next succeeding the date of such order except that no order for reorganization of any district shall become effective before July 1, 1976.

(c) Three months prior to the effective date of any reorganization order, the board shall report to the joint committee on finance the fiscal and educational impact of the reorganization order upon the affected districts.

(4) (a) The governing body of a county, municipality or school district may file a petition with the board requesting that its territory be detached from the district in which it lies and attached to a district to which such territory is contiguous, or if portions of its territory lie in more than one district, by requesting that all such portions be placed within one of such districts.

(b) Immediately upon receipt of the petition, the board shall notify each district board affected of the receipt of the petition and the boundary reorganization requested therein. Such district boards shall within 45 days notify the board of their recommendations on the petition.

(c) Within 90 days of the receipt of the petition, the board shall notify the governing body filing the petition and the district boards affected of its approval or disapproval of the proposed detachment and attachment of territory.

(5) If school district boundaries are changed in accordance with chs. 115 to 121, the board

APPENDIX D

1. Illinois Secondary Vocational Certification
2. Indiana Secondary Vocational Certification
3. Iowa Secondary Vocational Certification
4. Michigan Secondary Vocational Certification
5. Minnesota Secondary Vocational Certification
6. Ohio Secondary Vocational Certification
7. Wisconsin Secondary Vocational Certification
8. Iowa Post-Secondary Vocational Certification
9. Minnesota Post-Secondary Vocational Certification
10. Wisconsin Post-Secondary Vocational Certification

Illinois Secondary Vocational Certification

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State Certificates	EDUCATIONAL DEGREE	SPECIAL COURSES	RELATED OCCUPATIONAL EXPERIENCE		TEACHING EXPERIENCE	RENEWAL REQUIREMENTS Teaching Plus
	Previous Certificate Required	4-Year Degree Master's Degree Registration or Certificate	hrs of Professional Education	hrs of Technical Education	3 yrs or more (8,000 hrs) 2 Year (4,000 hrs) 1 1/2 Year (3,000 hrs) 1 Year (2,000 hrs)	One Year Two Year Three Year Five or more Year
Temporary Provisional Vocational					8,000	3(annually)
Provisional Vocational (2 years)			60	*		Yes ^b
Standard High School (4 years)	*		16	32		Yes ^c

Note. ^a Specific requirements refer to Agriculture, Home Economics and Office areas of vocational education. Distribution, Health and Trade and Industry are not mentioned.

^b Renewable until requirements for standard high school certificate are met.

^c Upon renewable a fee must be paid.



Indiana Secondary Vocational Certification

EDUCATIONAL DEGREE	SPECIAL CREDENTIALS	RELATED OCCUPATIONAL EXPERIENCE	TEACHING EXPERIENCE	RENEWAL REQUIREMENTS Teaching Plus
Previous Certificate Required	Registration or Certificate	Mins of Technical Education	1 yrs or more (10,000 hrs)	Administrative Qualification
4-Year Degree	Master's Degree	1 Year (2,000 hrs)	One Year	Possible
		1 1/2 Year (3,000 hrs)	Two Year	Occupational Experience
		2 Year (4,000 hrs)	Three Year	School District Sponsor
		1 Year (2,000 hrs)	Five or more year	College work

State Certificates

Conditional Vocational Certificate				
(2 years, full-time) (4 years, part-time)				
Full-time 1)	No	High School Grad	1 1/2 clock hrs.	tes ¹ hrs. or workshop
Part-time 2)	No	High School Grad	1 1/2 clock hrs.	tes ¹ hrs. or workshop
Provisional Certificate with Vocational Endorsement (5 years)				
Agriculture				
General 1)	No	tes ¹	18 1/2	tes ¹ tes ² tes ³ tes ⁴
Vocational 2)	No	tes ¹	18 1/2	tes ¹ tes ² tes ³ tes ⁴
Distribution	No	tes ¹	18 1/2	tes ¹ tes ² tes ³ tes ⁴
			or 1000 clock hrs. of approved supervised work with approved teacher training program	
Health	No	Same requirements as Trade & Industry		tes ¹ tes ² tes ³ tes ⁴
Consumer & Home-making	No	tes ¹	18 1/2	tes ¹ tes ² tes ³ tes ⁴
Occupational Home Economics	No	tes ¹	18 1/2	tes ¹ tes ² tes ³ tes ⁴

Officer	No	* ^f	18 40 or 52	*(TOE) Recommended		Yes ^g 20 ^h
Trades & Industry	No	* ^f	18 40(7-12) 52(K-12)		* (Journeyman)	Yes ^g 20 ^h
Professional Life Certificate	Yes	*			*	Valid for life, no condition.

Note. ^a Fifteen clock hours of state sponsored workshop prior to thirty days of teaching.

^b Five years experience or three years experience with 1,200 clock hours of specialized training in subject area where endorsement is sought.

^c Renewal limited to twelve years.

^d Thirty clock hour workshop.

^e Fifteen clock hour workshop.

^f Completion of no less than 124 semester hours and recommendation by institution granting the degree.

^g May renew 5 year certificate for 2 years if 20 hours are completed toward the master's degree. Only one 2 year renewal is possible. A five year renewal may be issued when the master's degree is attained. An unlimited number of 5 year renewals are possible with a master's degree even though the applicant has not taught.

^h Eight semester hours of graduate credit in the area of endorsement. This may be within the master's degree program or in addition to it.

ⁱ Teachers may complete programs of major business education with shorthand or without shorthand. Requiring 40 semester hours of course work, or they may complete an area business education program requiring 52 semester hours of course work.

Six senior high school credits of vocational office education may be counted as credits toward certification.

Iowa Secondary Vocational Certification

State Certificates	EDUCATIONAL DEGREE	SPECIAL COURSES	RELATED OCCUPATIONAL EXPERIENCE		TEACHING EXPERIENCE			RENEWAL REQUIREMENTS Teaching Plus
	Previous Certificate Required	Hrs of Professional Registration or Certificate	Hrs of Technical Education	1 Year (2,000 hrs)	1 1/2 Year (3,000 hrs)	2 Year (4,000 hrs)	3 Yrs or More (6,000 hrs)	Administrator Evaluation
Pre-Professional ^d (6 years)	No				Varies between 3,000 - 6,000 depending on vocational area			Yes 6or6 ^C and 1 year of teaching
Professional (10 years)	No							
Agriculture		*	20	30			*	Yes
Distribution		*	20	30	*			Yes
Health 1)		*	20	30	*			Yes
2)			8				* ^b	Yes
Consumer-Homemaking		*	20	30				Yes
Occupational Home Economics 1)		*	20	30				Yes 6or6 ^C and 1 year of teaching
2)		* ^a	8					Yes
3)			8				*	Yes
Office		*	20	30	*			Yes
Trade & Industry 1)		*	20	30				Yes
2)			8				*	Yes

Note. ^a Bachelor's degree is earned in the appropriate area of specialization excluding teacher education.

^b Up to 1 year (2,000 hrs) of experience may be credited towards the total experience requirement for those persons who have completed instructional and preparatory programs at the diploma, associate, or baccalaureate degree levels.

^c All course work should be directed toward a bachelors degree in an accredited institution.

^d Issued to people with no formal teacher education training.



Michigan Secondary Vocational Certification

Previous Certificate Required	EDUCATIONAL DEGREE	SPECIAL COURSES	RELATED OCCUPATIONAL EXPERIENCE		TEACHING EXPERIENCE			RENEWAL REQUIREMENTS Teaching Plus									
	4-Year Degree	Master's Degree Registration or Certificate	Hrs of Professional Education	Hrs of Technical Education	1 Year (2,000 hrs)	1½ Year (3,000 hrs)	2 Year (4,000 hrs)	3 yrs or More (6,000 hrs)	One Year	Two Year	Three Year	Five or More Year	Administrator Evaluation	Possible	Occupational Course Work	School District Experience	Sponsor
State Certificates																	
Annual Authorization ^a	No						*					*					*
State Secondary Provisional with a Vocational Endorsement (5-6 years)	No	*	26	24-30			*						Yes	10 ^c	18 ^d		
State Secondary Continuing with a Vocational Endorsement (permanent)	Yes		18 ^b										Yes	6 or MA Degree			*
Temporary Vocational Authorization (5-6 years)	No	*		24-30			*						Yes	10			
Full Vocational Authorization (permanent)	Yes		10						*				Yes	6 or MA Degree			*

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- Note. ^a Only available in Trade & Industry, Health, Occupational Home Economics.
^b Minimum of 10 hours in Education or a Master Degree
^c First renewal
^d Second renewal

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Minnesota Secondary Vocational Certification

State Certificates	EDUCATIONAL DEGREE	SPECIAL COURSES	RELATED OCCUPATIONAL EXPERIENCE		TEACHING EXPERIENCE			RENEWAL REQUIREMENTS Teaching Plus									
	Previc's Certificate Required	Hrs of Professional Registration or Master's Degree	Hrs of Technical Education	Hrs of Professional Education	1 Year (2,000 hrs)	1 1/2 Year (3,000 hrs)	2 Year (4,000 hrs)	3 Yrs or More (6,000 hrs)	One Year	Two Year	Three Year	Five or More Year	Administrator Evaluation	Possible	Course Work	Occupational Experience	School District Sponsor
One-Year Renewal ^d	No		2											Yes ^h			*
Provisional Certificate ^c	No																
Initial Two-Year																	
Agriculture	No	*												Yes			*
Distribution	No	*	15	24				*b						Yes			*
Health	1)	No	*					*b						Yes			*
	2)	No	*(non-educ)	2				*b						Yes			*
	3) ⁱ	No		2					*b					Yes			*
	4)	No	*d	12					*b					Yes			*
Consumer Homemaking	No	*												Yes			*
Occupational Home Economics	i)	No	*e	2	Work Shop	1500	hours										*
	2)	No		2	Work Shop				*					Yes			*
Office	No	*						*b						Yes			*
Trade & Industry	1)	No	*					*						Yes			*

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	2) ⁱ	No	3 ^g	*		Yes	*
	3)	No	3 ^g		*	Yes	*
<u>Five-Year Certificate</u>		Yes	Work Shop			* Yes 9 108 Clock Hours	*

Note.

^a Maximum number of renewals is established by the state certification specialist for the instructor to accomplish certification requirements for initial two-year or five year certificates.

^b 500 hours within the last 5 years.

^c Allows degreed instructors to accomplish occupational experience and instructor coordinators to contract for 1/3 of their coordination classes.

^d Health-related non-education degree.

^e Vocational education degree or home economics related non-education degree.

^f All course credit hours are quarter hours.

^g Plus teaching internship.

^h Renewable until certification requirements are met.

ⁱ Two years of post-secondary education.

Ohio Secondary Vocational Certification

State Certificates	EDUCATIONAL DEGREE		SPECIAL COURSES		RELATED OCCUPATIONAL EXPERIENCE		TEACHING EXPERIENCE			RENEWAL REQUIREMENTS Teaching Plus							
	Previous Certificate Required	4-Year Degree	Hrs of Professional Registration or Certificate	Hrs of Professional Degree	Hrs of Technical Education	1 Year (2,000 hrs)	1 1/2 Year (3,000 hrs)	2 Year (4,000 hrs)	3 yrs or More (6,000 hrs)	One Year	Two Year	Three Year	Five or More Year	Administrator Evaluation	Possible	Occupational Experience	School District Sponsor
<u>Temporary (1 year)</u>																Yes	2
Agriculture 1)		*			4												
2)					4				7yrs								
Consumer Homemaking		*			*b												
Distribution					4				5yrs							Yes	4
Occupational HE 1)		*			*c			*									
2)					*c				7yrs							Yes	
Office		*			45				7yrs							Yes	10
Trade & Industry 1)									3yrs-(journeyman) 4yrs-(apprentice)								
2)		*			* (no hrs given)			*	3yrs-(journeyman)								
<u>Vocational Provisional (4 years)</u>																Yes	
Agriculture 1)		*			21	40	*										
2)					16		18mo.										



Consumer & Homemaking	*		21	39			
Distribution 1)	*		21	10	*		
2)			16			18mo.	
Occupational HE 1)	*		21	30	*		
2)			16			18mo.	
Trade & Industry 1)	*		21	44	*		
2)			16			18mo.	
<u>High School Provisional Business Education</u>	*		21	45	*(10E & COE)	*(COE)	
<u>Vocational Professional (5 years)</u>	*		18			27mo. ^a	Yes
<u>Vocational Permanent</u>	*	*				45mo. ^a	

Note. ^a Vocational teacher must be employed full-time in the schools of Ohio.

^b One methods course.

^c One workshop or methods course.

Wisconsin Secondary Vocational Certification

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STATE CERTIFICATES	EDUCATIONAL DEGREE	SPECIAL COURSES	RELATED OCCUPATIONAL EXPERIENCE		TEACHING EXPERIENCE	RENEWAL REQUIREMENTS Teaching Plus	
	Previous Certificate Required	Hrs of Professional Registration or Certificate	Hrs of Technical Education	Hrs of Professional Education	3 Yrs or more (6,000 hrs)	Administrator Evaluation	School District Sponsor
<u>Temporary</u> ^c	Yes	*	*			Yes	6
<u>One Year License</u> ^d	Yes	*				Yes	^e
<u>Three-Year License</u>							
Agriculture	No	*	18	34	*	Yes	3
Consumer Homemaking	Yes	*	18	34	*	Yes	3
Distribution	No	*	18	34	*	Yes	3
Occupational Home Economics	Yes	*	18	34	*	Yes	3
Office	Yes	*	18	34	*	Yes	3
Trade and Industry	Yes	*	18	34	*	Yes	3
<u>Five-Year License</u>							
All Vocational Areas	Yes	* in all vocational areas		3		*	Yes 5 After 3 years of teaching experience, the unlimited (life) certificate may be issued in agriculture

Agriculture not included

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- Note.
- ^a All vocational certification requires coursework in issues, principles, or philosophy of vocational education. If a cooperative class is to be taught, coursework in organizational administration of cooperative vocational programs must also be completed.
 - ^b 95 clock hours of work experience in area of concentration can count as the equivalent of 1 semester credit.
 - ^c Allows for assignment of a certified teacher to a position of his area of concentration...must be requested by employing school district.
 - ^d To allow for employment of a person who has completed a teacher education program but who has course work deficiencies or occupational experience deficiencies.
 - ^e Renewal is limited to three years. The teacher must show progress toward higher level certification requirements.

Iowa Post-Secondary Vocational Certification

EDUCATIONAL DEGREE	SPECIAL COURSES	RELATED OCCUPATIONAL EXPERIENCE	TEACHING EXPERIENCE	RENEWAL REQUIREMENTS Teaching Plus
Previous Certificate Required	Hrs of Professional Registration or Certificate Master's Degree 4-year Degree	Hrs of Technical Education 1 Year (2,000 hrs) 1 1/2 Year (3,000 hrs)	3 Yrs or More (6,000 hrs) 2 Year (4,000 hrs) 1 Year (2,000 hrs)	Administrator Evaluation Five or More Year Three Year Two Year One Year Possible Course Work Occupational Experience School District Sponsor

State Certificates

Pre-Professional ^d (6 years)				Yes 6or ^b & 1 yr teaching
Professional (10 years)				Yes 6or ^b & 1 yr teaching
Agriculture 1)	*	20 30	4yr	
2)		8	*	
Distribution 1)	*	20 30	*	
2)	* ^a	8	*	
3)		8	*	
Health 1)	*	20 30	*	
2)		8	* ^b	
Consumer & Hmkg	*	20 30		
Occupational HE 1)	*	20 30		
2)	* ^a	8		
3)		8	*	

Office	1)	*	20	30	*	
	2)	* ^a	8		*	
	3)		8			*
Trade & Industry	1)	*	20	30		
	2)		8			*

Note. ^a Bachelor's degree is earned in the appropriate area of specialization excluding teacher education.

^b Up to 1 year (2,000 hours) of experience may be credited towards the total experience requirement for those persons who have completed instructional and preparatory programs at the diploma, associate, or baccalaureate degree levels.

^c All course work should be directed toward a bachelors degree in an accredited institution.

^d Issued to people with no formal teacher education training.

Minnesota Post-Secondary Vocational Certification

State Certificates	EDUCATIONAL DEGREE	SPECIAL COURSES	RELATED OCCUPATIONAL EXPERIENCE	TEACHING EXPERIENCE	RENEWAL REQUIREMENTS Teaching Plus
	Previous Certificate Required	Hrs of Professional Registration or Certificate Master's Degree 4-Year Degree	Hrs of Technical Education 1 Year (2,000 hrs) 1½ Year (3,000 hrs)	3 Yrs or More (6,000 hrs) 2 Year (4,000 hrs) One Year	Administrator Evaluation Five or More Year Three Year Two Year
<u>One-Year Permit</u>			6 clk hrs	*	No
<u>One-Year Renewal</u> ^a	Yes		2 courses		Yes-renewable until certification requirements are met.
<u>Initial Two-Year Certificate</u>					
Agriculture 1)	No	*		*	No
2)	No	* ^d	2	*	No
3)	No ^e		2	*	No
Distribution 1)	No	*	15 24	*	No
2)	No ^e		15 21qtr	*	No
				(100 hr in past 5 yrs)	
Health	No		2	*	No
Consumer Homemaking 1)	No	*			No
2)	No	* ^d	2		No
Occupational HE 1)	No	*		*	No
2)	No	* ^d	2	*	No
3)			2	*	No

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Office	1)	No	*		*b	No
	2)	No	*d	2	*b	No
	3)	No		2	*b	No
Trades & Industry	1)	No ^g	*	2	*	No
	2)	No		2	(4500 hrs) *	No
Technical		No ^e			(journeyman) *c	No
	<u>Five Year Certificate</u>	Yes	*	16		Yes 6 108 clk hrs

Note. ^a Maximum number of renewals is established by the state certification specialist for the instructor to accomplish certification requirements for initial two-year or five-year certificates.

^b 500 hours within the last 5 years.

^c 2,000 hours within the last 5 years.

^d Non-education degree

^e 2 years of related post-secondary education.

^f All course credit hours are quarter hours.

^g Registration or certificate as a result of 2 years education in an area vocational institute (AVTI).

State Certificates ^d	EDUCATIONAL DEGREE	SPECIAL COURSES	RELATED OCCUPATIONAL EXPERIENCE	TEACHING EXPERIENCE	RENEWAL REQUIREMENTS Teaching Plus
	Previous Certificate Required	Hrs of Professional Registration or Certificate	Hrs of Technical Education	3 yrs or More (6,000 hrs)	Administrator Evaluation
	4-Year Degree	Master's Degree	1 Year (2,000 hrs)	2 Year (4,000 hrs)	Five or More Year
			1 1/2 Year (3,000 hrs)	One Year	Three Year
				Two Year	Possible
					School District Sponsor
					Occupational Experience
					Course Work
<u>Provisional (2 years)</u>					Yes 6or2mo.
Academic Instructor a)		*	20	6mo. - (non-related)	
Occupational Instructor a)		*	20	*	
b)			20	7yrs ^c	
<u>Standard Five Year</u>					
Academic Instructor a)		*	12 30	*	Yes 6or2mo.
Occupational Instructor a)		*	12 30	*	
b)				7yrs ^c	
<u>Standard Life ^b</u>					

Note. ^d At the post-secondary level the hiring district is responsible for submitting all necessary documents required for each teacher's certification as soon as possible during the first year of the teacher's employment. The VTAE board issues certificates to eligible applicants only through the employing agency.

^b The teacher must be 55 years of age and involved in teaching.

^c Apprenticeship and Journeyman.

WISCONSIN VOCATIONAL STUDIES CENTER
UNIVERSITY OF WISCONSIN-MADISON

The Wisconsin Vocational Studies Center at the University of Wisconsin-Madison was reorganized with the support of the Wisconsin Board of Vocational, Technical, and Adult Education within the School of Education in 1971. The function of the center is to serve the State of Wisconsin in a unique way by bringing the resources of the University to bear on identified problems in the delivery of vocational and manpower programs--vocational education, technical education, adult education, career education, and manpower training--to citizens of all ages in all communities of the state. The center focuses upon the delivery of services including analyses of need, target groups served, institutional organization, instructional and curriculum methodology and content, labor market needs, manpower policy, and other appropriate factors. To the extent that these goals are enhanced and the foci of problems widened to encompass regional and national concerns, the center engages in studies beyond the boundaries of the state.

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