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ABSTRACT
                 The purpose of this study was to determine if the
fiscal year 1972 funding of vocational and technical education by the
Illinois Division of Vocational and Technical Education had changed
from the inefficient funding patterns previously investigated for
fiscal year 1971. The conclusions of the 1971 study were that the
funding was not economically efficient and that it tended to place
little emphasis on the needs variables such as assessed valuation,
school dropouts rates, unemployment rates, aid to dependent children
payments, and income levels. Further, the funding formula seemed to
discriminate in favor of Chicago suburban schools with higher income
levels and against schools in lower income districts throughout the
State. The findings of the 1972 fiscal year study were that the
funding formula was still economically inefficient in that, given a
choice between two programs promising the same manpower benefits, it
would fund the more expensive program thereby spending more money
than needed. The 1972 funding patterns was slightly more attentive to
need factors but still funded disproportionately those districts with
high income levels. It was recommended that consideration be given to
alternative funding methods such as performance contracting,
discretionary contracting, the use of private proprietary schools,
and funding on a regional or area basis. (MF)

THE DISTRIBUTION AND EFFECTS OF VOCATIONAL AND TECHNICAL EDUCATION FUNDING IN ILLINOIS IN FISCAL YEAR 1972

by James V. Koch
Chairman, Department of Economics
Illinois State University

Conducted for the

State of Illinois
Advisory Council on
Vocational Education

Submitted by:

James V. Koch
Principal Investigator

Randyl D. Elkin
Associate Investigator

Charles R. Hicklin
Project Director

Mid State Educational Consultants

May, 1973

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A report of:

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Chapter 1

SUMMARY OF THE STUDY AND THE FINDINGS

In August, 1972, James V. Koch and Randyl D. Elkin presented a
study to the State of Illinois entitled An Analysis of the Process,
Intent, Distribution and Effects of Priority Funding for Vocational
and Technical Education in the State of Illinois.[1] The conclusions of
that study were that funding of vocational and technical education by
the Division of Vocational and Technical Education (DVTE) was not
economically efficient by usual standards and that it tended to place
little emphasis upon "need" variables such as assessed valuation, school
dropout rates, unemployment rates, the frequency of aid to dependent
children payments, and income levels. Further, the DVTE funding formula
seemed to discriminate in favor of Chicago suburban schools with higher
income levels and against schools in lower income districts throughout
the state. The purpose of this study was to determine if DVTE in
FY-1972 had changed from the patterns noted above.

This study, then, is a follow-up of the study of FY-1971 funding.
The findings are as follows: (1) DVTE funding formula is once again
found to be economically inefficient in that it rewards those districts

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[1]Koch, Elkin, An Analysis of the Process, Intent, Distribution
and Effects of Priority Funding for Vocational and Technical Education in
the State of Illinois, State of Illinois Advisory Council on Vocational
Education, Springfield, Illinois, August, 1972.

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which pursue the most expensive programs. Given a choice between two programs which promise the same manpower benefits, the DVTE formula will fund the most expensive program and therefore spends more money than needed; (2) the pattern of funding by DVTE observed in FY-1972 is slightly more attentive to "need" factors such as those noted above, but still funds disproportionately those districts with high income levels; and, (3) the Advisory Council should give consideration to alternative funding methods such as performance contracting, discretionary contracting, the use of private proprietary schools, and funding on a regional or area basis.

Chapter II

BACKGROUND AND PURPOSE OF THE STUDY

The funding patterns of the Division of Vocational and Technical Education (DVTE) have already been examined for FY-1971 in a report entitled, An Analysis of the Process, Intent, Distribution and Effects of Priority Funding for Vocational and Technical Education in the State of Illinois.[1] The conclusions of this report were that FY-1971 fund distribution by the DVTE violated accepted economic principles concerning efficiency by tending to place very little emphasis upon "need" variables such as assessed valuation in a district, school dropout rates, unemployment rates, the frequency of aid to dependent children in a district, and income levels in a district. It was also found that the DVTE funding formula tended to discriminate in favor of higher income districts and against lower income districts (other things held constant). These results led to the current study, which is a replica of the FY-1971 study using the newly available FY-1972 data.

The specific purposes of this study, as stated in the project proposal, were to: (1) evaluate the criteria being used by the DVTE in

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[1]Koch, Elkin, An Analysis of the Process, Intent, Distribution and Effects of Priority Funding for Vocational and Technical Education in the State of Illinois, State of Illinois Advisory Council on Vocational Education, Springfield, Illinois, August, 1972.

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FY-1972 in terms of economic efficiency; (2) determine to what extent
the FY-1972 funding by DVTE can be explained in terms of the "need"
variable cited above; and, (3) specify, if necessary, alternative fund-
ing criteria and formulas which would minimize the cost of obtaining
the same manpower objectives the DVTE achieved in FY-1972.

Chapter III

THE DVTE PRIORITY FORMULA

The priority funding formula used by the DVTE for FY-1972 fund distribution was the same formula which we criticized so strenously in our report on FY-1971 DVTE funding. We continue to believe, indeed, we can demonstrate, that the DVTE can easily realize same manpower objectives that it is achieving now, and do so at lower cost if it is willing to accept an alternative funding formula. We will later show that the DVTE is spending approximately $675 per district more on funding under its formula than is necessary. Needless to say, the release of $675 per district would enable DVTE to accomplish much more than it is currently and would enable DVTE to fund new and expanded programs in many areas. This $675 per district can be saved simply by altering the funding formula; it will be saved without reducing the manpower benefits derived.

The DVTE funding formula assigns a priority ranking A through D (A best, D worst) in two categories to every course or project that might be funded. The two categories are: (1) the manpower benefits derived from the course; and, (2) the cost of the course. The best priority ranking a course can obtain is an A priority in both benefits and costs. An A ranking means that the course yields high manpower benefits and is also very expensive. The two letter rankings (benefits and costs) are then averaged in order to obtain an overall priority

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ranking for the occupation or course. For example, "metalworking" is given a "B" differential cost priority and a "C" manpower priority based upon Department of Labor information. The "B" and "C" ratings are averaged to an overall "B" rating.

The problem with this priority system is that it funds expensive courses and programs in preference to less expensive courses and programs that would accomplish exactly the same manpower benefits. For example, the DVTE formula would fund a million dollar project giving "C" level manpower benefits before it would fund a one thousand dollar project giving the same benefits. The cost-minimizing way to accomplish a given end is, of course, to fund the least expensive course or project that yields a given level of manpower benefits. More specifically, the priority rankings on cost in the DVTE formula should be reversed. Highest cost programs and courses should be given the lowest priority; lowest cost courses and programs should be given highest priority. It may well happen that an expensive program or course yields such substantial manpower benefits that it is nonetheless preferred to the less expensive program or course. That is desirable and reflects the fact that the expensive course yields more manpower benefits per dollar than does the less expensive course. That is the essence of economic efficiency.

Putting the above a slightly different way, we should be very surprised to find that a businessman always preferred the more expensive of the two machines even though the two machines were doing exactly the same job and were of exactly of the same quality. This type of behavior

is uneconomic and inefficient and the DVTE, by continuing in FY-1972 the priority ranking scheme that it used in FY-1971, is engaging in similar behavior.

.   The $675 figure which was cited earlier is the savings per district that could be realized by the DVTE if it were to reverse its cost priorities as outlined above. That is, exactly the same manpower benefits could be obtained by paying districts (perhaps not exactly the same districts or the same courses and programs) an average of $675 less each year. Note that savings amounts to $67,500 for 100 districts and $337,500 for 500 districts. It is not something to sneeze at. Such monies could be used to fund new programs, to expand existing programs, or could be used elsewhere in the State of Illinois budget.

Chapter IV

DVTE FUNDING IN FY-1972 AND "NEED" FACTORS

The study of DVTE funding in FY-1971 chose a random sample of 100 districts and is the basis of the work described here concerning DVTE funding in FY-1972. The work reported in this section ascertains whether or not the FY-1972 funding of DVTE is or is not closely related to "need" variables reflecting socioeconomic conditions. The methodology used is multiple linear regression analysis where:

FY-1972 Net Reimbursement
to a District   =   f("Need" Variables).

The "need" variables, and the symbols that represent them in this study, are as follows:

ADCPTHPU = Number of children receiving aid to dependent children per

1,000 children in the county in which the district is

located. Source: Aid to Dependent Children--Cases

Eligible to Receive Both Assistance and Medical Care,

October, 1972 (Springfield, Illinois: Division of

Research and Statistics, Department of Public Aid, State

of Illinois, 1972).

HSDROPOT = High School dropouts in a district as a percentage of

grade 9-12 enrollments. Source: High School Dropouts

from 1971-1972 Annual School District Report. (Spring-

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field, Illinois: Office of the Superintendent of Public

Instruction, State of Illinois, November 29, 1972).

ASSESVAL = Dollars of assessed valuation per pupil in a district.

Source: 1970 Assessed Valuations and 1971 Tax Rates,

Descending Order, Illinois Public Schools (Springfield,

Illinois; Office of the Superintendent of Public In-

struction, Circular Series A, No. 292, 1972).

UNEMPLCO = Percentage of the labor force unemployed in the county

in which the district is located.   Source: A Proposed

State Plan for the Administration of Vocational and

Technical Education in Illinois (Springfield, Illinois:

Board of Vocational Education and Rehabilitation,

Division of Vocational and Technical Education, Map 2.1

(C), n.p., 1972).

INCOMEPP = Average income of the population of the district per

pupil in the district.   Source: Data provided by

Professor Alan Hickrod, Professor of Educational Admin-

istration, Department of Education Administration,

Illinois State University, Normal, Illinois.

While 100 districts were sampled, the INCOMEPP variable was

available for only 86 districts, and therefore the effective sample

size was 86.

The multiple linear regression of net reimbursement of DVTE in

FY-1972 upon the five "need" factors cited above produced the regression

in Table 1.

TABLE 1

DVTE FY-1972 FUNDING AND "NEED" FACTORS

Net Reimbursement

FY-1972

$=$ -23,734   + 154.2 ADCPTHPU   + 4,263 HSDROPOT

        (8189)   (50.8)   (1,246)

        $t = 2.89$ $t = 3.03$ $t = 3.42$

        - .093   - 3.29.3   + 2.27 INCOMEPP
         ASSESVAL   UNEMPLCO

        (.091)   (94.5)   (.68)

        $t = 1.01$ $t = 3.49$ $t = 3.33$

$N = 86$

$R^2 = .41$

$F = 7.66$

THE ROLE OF AID TO DEPENDENT CHILDREN . The FY-1972 funding of DVTE is
positively and significantly
related to the number of children receiving aid to dependent children in
the county where the district is located. The typical district had
about 65 aid to dependent children per 1,000 children in the district.
An increase in that number from 65 to 66 would bring the district $154
additional from DVTE, other things held constant. The coefficient upon
which this particular estimate is based is significant at the .01 level.
This funding represents a slightly increased emphasis upon the aid to
dependent children factor from FY-1971.

THE ROLE OF HIGH SCHOOL DROPOUTS   The FY-1972 funding of the DVTE is
positively and significantly related
to the number of high school dropouts in a district as a percentage of
the total number of school children in grades 9-12. A typical district
had a dropout percentage of about 4 percent. A one percent increase in
this figure, to five percent, would result in an increase of DVTE fund-
ing, other things held constant, of $4,263. The coefficient upon which
this estimate is based is significant at the .01 level. The emphasis
upon funding with respect to high school dropouts represents a slight
increase over FY-1971 observed funding.

THE ROLE OF ASSESSED VALUATION   The FY-1972 funding of the DVTE is
negatively related to the assessed
valuation in a district per pupil in that district. However, the co-
efficient in the regression is not significant even at the .10 level.
Hence, the negative sign is not one in which we can place great

confidence. We are unable to reject the hypothesis (at the 10 percent level) which states that assessed valuation in a district has no effect. upon DVTE funding in FY-1972.

THE ROLE OF THE RATE OF UNEMPLOYMENT The FY-1972 funding of the DVTE is negatively related to the rate of unemployment in the county where the district is located. The co-efficient on the unemployment rate variable is -329. This implies that a one percent increase in the rate of unemployment would actually decrease funding from the DVTE, other things held constant. The co-efficient upon which this estimate is based is statistically significant at the .01 level. This development represents a deterioration from FY-1971. In FY-1971, the rate of unemployment proved to be an unimportant and statistically insignificant predictor of DVTE's funding. This is not so, however, in FY-1972.

THE ROLE OF INCOME The FY-1972 funding of the DVTE is strongly and positively related to the average income of the population in the district receiving funds. The higher the income of the district, the more funds received from DVTE in FY-1972. This, too, represents a deterioration from FY-1971 where income did not prove to be a statistically significant predictor of DVTE funding. The average in-come of the population in the districts surveyed was over $9,000. A one dollar increase in this average income would actually carry with it (other things held constant) more than a two dollar increase in DVTE payments in FY-1972. This is clearly not what one would expect and most observers would regard this type of funding as highly undesirable.

Coupled with the revelation that DVTE FY-1972 funding also is skewed in favor of low unemployment rates, a startling and undesirable picture emerges. The FY-1972 funding of DVTE tends, if anything, to discriminate in favor of high income, low unemployment areas. The Mt. Prospect-Centralia paradox that was pointed out in the FY-1971 study continues to hold true under these circumstances. Mt. Prospect will continue to receive disproportionately high DVTE payments in view of the income levels, the programs pursued, and "need" factors.

Chapter V

DVTE FUNDING IN FY-1972 IF ECONOMIC
EFFICIENCY CRITERIA USED

We have already suggested earlier that money could be saved if economic efficiency criteria were used instead of the current DVTE funding formula. The identical sample of districts was used. However, in this instance, the multiple linear regression which was run was the following:

> Economic Efficiency   =   f("Need" factors)
> Funding Suggested
> by Koch

The dependent variable in this case, economic efficiency funding, is simply the current DVTE funding formula except that the DVTE's current cost priorities are reversed. Given any level of manpower benefits, less expensive programs are preferred under the Koch economic efficiency priority funding scheme.

The independent variables, the "need" factors, are the following:

ADCPTHPU = Number of children receiving aid to dependent children

           per 1,000 children in the county in which the district

           is located. Source: Aid to Dependent Children--Cases

           Eligible to Receive Both Assistance and Medical Care,

           October, 1972 (Springfield, Illinois: Division of

           Research and Statistics, Department of Public Aid,

           State of Illinois, 1972).

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HSDROPOT = High School dropouts in a district as a percentage of grade 9-12 enrollments. Source: High School Dropouts from 1971-1972 Annual School District Report. (Springfield, Illinois: Office of the Superintendent of Public Instruction, State of Illinois, November 29, 1972).

ASSESVAL = Dollars of assessed valuation per pupil in a district. Source: 1970 Assessed Valuations and 1971 Tax Rates, Descending Order, Illinois Public Schools (Springfield, Illinois: Office of the Superintendent of Public Instruction, Circular Series A, No. 292, 1972).

UNEMPLCO = Percentage of the labor force unemployed in the county in which the district is located. Source: A Proposed State Plan for the Administration of Vocational and Technical Education in Illinois (Springfield, Illinois: Board of Vocational Education and Rehabilitation, Division of Vocational and Technical Education, Map 2.1 (C), n.p., 1972).

INCOMEPP = Average income of the population of the district per pupil in the district. Source: Data provided by Professor Alan Hickrod, Professor of Educational Administration, Department of Educational Administration, Illinois State University, Normal, Illinois.

Table 2 contains the multiple linear regression of Koch's
Efficiency Funding Scheme upon the "need" variables.

THE ROLE OF AID TO DEPENDENT CHILDREN

Using the economic efficiency criterion, the response of DVTE funding to the number of children per 1,000 children in a district who are supported by aid to dependent children payments would increase slightly. The coefficient upon which this estimate is based is significant at the .01 level. This is notable in that it means that not only is the use of the economic efficiency funding formula less expensive, but also it is just as responsibe to "need" variables as is the current DVTE funding formula.

THE ROLE OF HIGH SCHOOL DROPOUTS

Slightly less responsiveness in funding to the number of high school dropouts is indicated when the economic efficiency criterion is used for funding. However, the lessened emphasis is very small (about $200 per one percent increase in the number of high school dropouts in a district). Further, the statistical significance of the high school dropout variable is substantially increased when the economic efficiency funding formula is used. That is, we can have more faith in the estimate provided by the economic efficiency formula than we can in the estimate provided by the current DVTE formula. Stating this another way, we can be more confident that the economic efficiency formula actually results in monies being distributed in the direction of districts where the percentage of high school dropouts is large. We can be less confident that this is actually happening when the DVTE formula is u.ilized as a basis for the distribution of funds to districts.

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TABLE 2

DVTE FY-1972 FUNDING AND "NEED" FACTORS IF ECONOMIC EFFICIENCY CRITERION IS USED

Economic
Koch's Efficiency
Funding Scheme

$= -26,789 + 157.7$ ADCPTHPU $+ 4,014 - 1.34$ ASSESVAL
$(7,436)$ (48.0) (1018) $(.065)$
$t = 3.60$ $t = 3.27$ $t = 3.94$ $t = 2.06$

$+ 133.1$ UNEMPLCO $+ .175$ INCOMEPP
(74.9) $(.244)$
$t = 1.79$ $t = .71$

N = 86

R^2 = .49

F = 8.38

THE ROLE OF ASSESSED VALUATION   If DVTE funding is effectively related
to "need" variables, then it should be
negatively related tc assessed valuation in a district. While the
FY-1972 funding of the DVTE was negatively related to assessed valuation,
the partial regression coefficient of the assessed valuation variable is
statistically significant at the .05 level and the relationship is the
desired negative (inverse) relationship. This is yet another example of
the economic efficiency funding formula's superiority. Once again, not
only is the economic efficiency funding formula a cheaper means to
accomplish a given goal, but also it pays more attention to the "need"
variables.

THE ROLE OF UNEMPLOYMENT RATES   Whereas the DVTE FY-1972 funding
formula actually resulted in less
money being given to areas and districts with high rates of unemploy-
ment (other things held constant), just the opposite is true when the
economic efficiency criterion is utilized. Using the economic effi-
ciency criterion, a one percent increase in the rate of unemployment
will increase payments to the district by $133. Quite the opposite
was the case for the current DVTE formula. The partial regression co-
efficient upon which the $133 estimate is based is significant at the
.05 level. This is yet another example of the current DVTE formula not
really emphasizing "need" characteristics.

THE ROLE OF INCOME   One of the less desirable aspects of the current
DVTE formula for funding is that (other things
held constant) it tends to discriminate in favor of districts in which

incomes are high and against districts where income is low. In the FY-1971 study, this resulted in the Mt. Prospect-Centru·'a example which we have previously discussed. The economic efficiency criterion, however, reverses this relationship and tends to fund more heavily those districts with lower income levels. It would be incorrect to over-emphasize this change, however. The partial regression coefficient upon which this estimate is based is not significant at the .10 level even though it has the desired sign. Hence, it is more correct to state that the economic efficiency criterion for funding cannot be shown to be any-thing but neutral with respect to income in the districts funded. This is a fancy way of stating that income apparently is not much of a factor in determining funding under the economic efficiency criterion. This is nevertheless an improvement over the current DVTE formula in that DVT funding in FY-1972 tended to go preferentially to high income districts.

Chapter VI

MONEY SAVINGS DUE TO USE OF ECONOMIC EFFICIENCY
CRITERIA IN FY-1972

The Appendix to this report contains the priority ratings given
by the DVTE in FY-1972 for each occupation, course, and program with
which they are involved. The Appendix also contains the revised
priority ratings which would obtain if Koch's economic efficiency
priorities were used. As stated previously, the cost of realizing the
manpower benefits equal to those realized by the DVTE is fully $675 per
district cheaper when economic efficiency criteria are applied. Further,
as we have seen above, the application of economic efficiency criteria
does not seem to harm the relationship of DVTE funding to "need" factors.
If anything, the economic efficiency priority scheme is more responsive
to "need" factors than the current DVTE funding priorities.

The $675 figure was obtained by determining the total cost of
funding under the DVTE formula, subtracting the total cost of funding
under the economic efficiency formula, and dividing by the number of
districts funded. The $675 figure could equivalently be found by
multiplying the partial regression coefficients found in Tables 1 and 2
by the average values of each variable and summing the costs derived in
that fashion on a per district basis.

The full import of the $675 savings per district can be seen in
Table 3. If 100 districts are funded by DVTE, then the total savings

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obtained by using the economic efficiency funding_is $67,500.

Similarly, if 300 districts were funded, then the total savings would be

$202,500; if 500 districts were funded, then the total savings would be

$337,500. Whatever the number of districts involved, the savings are

substantial and would fund significant new programs, the expansion of

existing programs, or other needs in state government.

The savings outlined in Table 3 can be realized by altering the

funding formula currently used by DVTE. It may be, however, that the

DVTE should not use any formula and instead allocate funds on a

different basis, for example on a performance contracting basis. We

will consider such alternatives in the next section.

Table 3

TOTAL SAVINGS BY DVTE UNDER ECONOMIC
EFFICIENCY FUNDING

Number of Districts Funded by DVTE	Total Savings By DVTE Using Economic Efficiency
100	$ 67,500
200	135,000
300	202,500
400	270,000
500	337,500
600	405,000
700	472,500
800	540,000
900	607,500
1000	675,000

Chapter VII

SUMMARY, CONCLUSIONS, AND RECOMMENDATIONS

Four major findings have resulted from this study:

1. The DVTE continues to use a funding formula which is in-
efficient by usual economic standards in that it chooses to fund ex-
pensive programs rather than cheaper programs which yield the same
benefits.

2. The FY-1972 funding by DVTE given evidence that attention to
"need" factors has increased; however, the increase in attention is small
and FY-1972 DVTE funding still gives little evidence that "need" factors
are an important rationale for funding.

3. The evidence produced here indicates that FY-1972 DVTE fund-
ing discriminates in favor of districts whose average income levels are
high and whose rates of unemployment are low; conversely, the formula
utilized now discriminates against districts whose average income levels
are low and whose rates of unemployment are high.

4. By altering the funding formula it now uses to conform to
notions of economic efficiency, the DVTE not only would have saved an
average of $6/5 per district in FY-1972, but also wouid have funded
districts in a fashion that was more responsive to "need" factors.

It is important that the DVTE (and the Advisory Council) consider
alternative modes and methods of funding. This report has demonstrated

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that the formula currently used by DVTE needs alteration and such
alterations could be easily accomplished. However, the entire concept of
formula funding needs to be examined. Formula funding may not be the most
efficient manner in which to fund vocational and technical education.
It is perhaps the easiest-in the sense of being rigidly mechanical and
not requiring much imagination. Nonetheless, it has not been an un-
qualified success.

One realistic alternative which should be explored by the DVTE
and the Advisory Council is a system of performance contracting. Per-
formance contracting has emerged in the last decade as an ever more
frequent allocational strategy for school boards and others. Under a
performance contract, the contractee agrees to perform certain tasks in
return for a certain·fee. In a DVTE context, a contractee (possibly a
school district) would sign a contract in which they agreed to perform
certain vocational and technical education tasks and perhaps to raise
student knowledge or skills to a certain level. Failure to fulfill the
contract would result in non-payment of the contractual fee or a for-
feiture of portions of that fee. Performance contracting has not been
a notable success in elementary schools; however, vocational and
technical education is a quite different environment and may be
susceptible to this type of arrangement. A small pilot program may be
a wise investment at this time.

The current DVTE formula gives the DVTE very little discretion
concerning how its funds are distributed. That is, the formula is
constructed, and the distribution that results is cut and dried from
that point onward. This may seriously reduce flexibility. Within a
given year, emergency needs may arise which cannot be adequately

handled within a formula framework. Further, a formula framework for funding does not enable the DVTE to reward or penalize especially good or bad programs. The DVTE and the Advisory Council should therefore consider increasing the amount of discretionary funds that the DVTE might distribute each year. Such discretionary funding must be monitored closely since it could lead to inefficiency and abuses. However, the essence of managerial competence is to do the correct thing at the correct time. If it is found that DVTE personnel are not capable of exercising discretion and/or that they exercise it wrongfully, then either discretion must be withdrawn or managers must be fired. An increase in discretion on the part of DVTE managerial personnel has the potential to greatly increase benefits and responsiveness; it could, however, lead to just the opposite. In the latter case, either the discretion or the managers must be removed.

FY-1972 funding was done primarily on a state-wide basis. Conversations with DVTE personnel reveal that they frequently refer to the needs of a particular area when defending a particular course or pattern of funding. In response to a question about the state-wide advisability of a given course or pattern of funding, DVTE personnel often reply that "...such personnel are in great need in XYZ County." This simply points out that the manpower needs and requirements of various areas of the State of Illinois are extremely diverse. Since this is the case, consideration should be given to distributing funds on a regional or area basis and then having regional or area centers make the final allocation to individual districts. Such a system might attune the funding process more closely to the needs of particular areas and districts. At the

same time, it could result in the erection of an intermediate level of bureacracy and could cause administrative costs to skyrocket unless watched closely.

An additional policy alternative which is worthy of consideration is the possible utilization of private proprietary schools in the area of vocational and technical education. Current DVTE funding in the area of vocational and technical education virtually ignores the possible use of private proprietary schools. Private proprietary schools argue strongly that they can perform the identical vocational and technical education tasks performed by public districts and do so better (and cheaper) because: (1) the private proprietary schools have this as their sole purpose and this is their only reason for existence; (2) they are closer to the actual businesses where graduates will become employed; and, (3) they do not maintain the expensive bureaucracies which public districts maintain.

The previous allegations by the private proprietary schools have yet to be evaluated. The Advisory Council should give strong con- sideration to funding a study of the relative efficiency of public dis- tricts and private proprietary school 'n the area of vocational and technical education. Such a study must overcome the difficulty that has plagued previous attempts to evaluate the relative worth of private proprietary schools, namely, the specification of innumerable job skills and attitudes which are said to result from training. It is very easy to get bogged down in such a study in concepts such as job happiness and the like. If such difficulties can be overcome, then such a study should be made, for the private proprietary school represents a major

unexplored alternative to current vocational and technical education
programs and funding.

In sum, then, we recommend that the Advisory Board consider the
following alternatives: (1) performance contracting; (2) increased
discretionary contracting; (3) regional and area fund distribution; and,
(4) the use of private proprietary schools.

DIVISION OF VOCATIONAL AND TECHNICAL EDUCATION

Listing of Priorities For Program Funding
For FY-1972 Occupational Training
Programs Only

Office of Education Code Number	Occupation or Course Name	Differential Cost Priority	Manpower Priority	Average Priority On Which Funding is To Be Made	Economic Efficient Priority
01.0100	Agricultural Production	C	D	C	C
01.0101	Animal Science	C	D	C	C
01.0102	Plant Science	C	D	C	C
01.0103	Farm Mechanics	B	C	B	C
01.0104	Farm Business Management	C	C	C	C
01.0200	Agricultural Supply and Service	B	C	B	C
01.0201	Agricultural Chemicals	ᴧ·B	C	B	C
01.0202	Feeds (Processing & Distribution)	C	C	C	C
01.0203	Seeds (Processing & Distribution)	C	C	C	C
01.0204	Fertilizers (Plant Food)	B	C	B	C
01.0300	Agriculture Mechanics	A	C	B	C
01.0301	Agricultural Power and Machinery	A	D	B	O
01.0302	Agricultural Struct. and Conveniences	C	D	D	C
01.0303	Soil Management	C	C	C	C
01.0304	Water Management	C	C	C	C
01.0305	Agricultural Mechanics Skills	B	C	B	C
01.0306	Agricultural Construction and Maintenance	C	O	C	C
01.0307	Agricultural Electri- fication	B	C	B	C
01.0400	Agricultural Products	B	O	C	D
01.0401	Dairy Products	B	D	C	D
01.0402	Nonfood Products	B	D	C	O
01.0500	Ornamental Horticulture	A	C	B	C
01.0501	Arboriculture	B	C	B	C
01.0502	Floriculture	B	C	B	C
01.0503	Greenhouse Operations and Management	A	C	B	C

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01.0504	Landscaping	A	C	B	C
01.0505	Nursery Operation and Management	A	C	B	C
01.0506	Turf Management	A	C	B	C
01.0600	Agricultural Resources	A	C	B	C
01.0601	Forests Conservationist	C	B	B	B
01.0602	Recreation Director (Park Ranger-Manager)	B	B	B	B
01.0603	Soil Conservationist	C	B	B	B
01.0604	Wildlife	C	B	B	B
01.0605	Water Conservationist	A	B	B	C
01.0607	Fish (Including Farms and Hatcheries)	B	C	B	C
01.0608	Range (Ag. Resources)	A	C	B	C
01.0700	Forestry	A	D	C	D
01.0702	Forest Protection	B	C	C	C
01.0703	Logging	C	D	D	C
01.0704	Wood Utilization	B	D	C	D
01.0706	Special Products (Forestry)	B	D	C	D
04.0100	Advertising Services	C	C	C	C
04.0200	Apparel & Accessories (Sales)	C	C	C	C
04.0300	Automotive Sales	C	C	C	C
04.0400	Finance and Credit	C	B	C	B
04.0500	Floristry (Sales)	C	C	C	C
04.0600	Food Distribution (Sales)	C	C	C	C
04.0700	Food Services (Sales)	C	C	C	C
04.0800	General Merchandise (Sales)	C	C	C	C
04.0900	Hardware, Bldg. Materials (Sales)	C	C	C	C
04.1000	Home Furnishings (Sales)	C	B	C	B
04.1100	Hotel and Lodging Services	C	B	B	B
04.1200	Industrial Marketing (Sales)	C	B	C	B
04.1300	Insurance (Sales)	C	C	C	C
04.1400	International Trades (Sales)	C	C	C	C
04.1500	Personal Services Sales	C	C	C	C
04.1600	Petroleum (Sales)	C	C	C	C
04.1700	Real Estate (Sales)	C	C	C	C
04.1800	Recreation & Tourism Services	C	C	C	C
04.1900	Transportation (Sales)	C	C	C	C
04.2000	Retail Trade	C	C	C	C
04.3100	Wholesale Trade	C	C	C	C
04.9900	Distributive Education Mktg. - Gen.	C	C	C	C
04.9901	Small Business Mngmt.	C	C	C	C
07.0100	Dental	A	A	A	B

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07.0101	Dental Assistant	A	A	A	B
07.0102	Dental Assistant (Assoc. Degree)	A	A	A	B
07.0103	Dental Laboratory Technician	A	B	A	C
07.0200	Medical Laboratory	A	A	A	B
07.0201	Cytology	C	A	B	A
07.0202	Histologist	C	A	B	A
04.0203	Medical Laboratory Assistant	A	A	A	B
07.0204	Hematology	C	A	B	A
07.0300	Nursing	A	A	A	B
07.0301	Nursing (Assoc. Degree)	A	A	A	B
07.0302	Practical (Voc'l) Nurse	A	A	A	B
04.0303	Nursing Aid	C	A	B	A
07.0304	Psychiatric Aide	B	B	B	B
07.0305	Surgical Technician (Oper. Room Tech.)	A	A	A	B
07.0306	Obstetrical Technician	C	B	C	B
07.0307	Home Health Aide	C	B	C	B
07.0308	School Health Aide	C	B	C	B
07.0400	Rehabilitation	B	A	A	B
07.0401	Occupational Therapist	A	A	A	B
07.0402	Physical Therapist	A	A	A	B
07.0403	Prosthetics	B	A	B	B
07.0404	Orthotics	B	B	A	B
07.0500	Radiologic (Health Occupations)	A	A	A	B
07.0501	Radiologic Technology (X-Ray)	A	A	A	B
07.0502	Radiation Therapy	A	A	A	B
07.0503	Nuclear Medical Technology	A	A	A	B
07.0600	Ophthalmic	B	B	B	B
07.0601	Ophthalmic Dispensing	B.	B	B	B
07.0602	Orthoptics	B	B	B	B
07.0603	Optometrist Assistant	B	B	B	B
07.0700	Environmental Health	B	A	A	B
07.0701	Environmental Health Ass't.	B	A	A	B
07.0702	Radiological Health Technician	A	A	A	B
07.0703	Sanitarian Assistant	B	B	B	B
07.0800	Mental Health Technology	C	A	B	A
07.0801	Mental Health Technician	C	A	B	A
07.0802	Mental Retardation Aide	C	A	B	A
07.0900	Health Occupations Assistant	B	A	B	B
07.0901	Electroencephalograph Technician	A	A	A	B

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07.0902	Electrocardiograph Technician	A	A	A	B
07.0903	Inhalation Therapy	A	A	A	B
07.0904	Medical Assistant	C	A	B	A
07.0905	Central Supply Technical	C	C	C	C
07.0906	Community Health Aid	C	A	B	A
07.0907	Medical Emergency Technician	B	A	A	B
07.0908	Food Service Health Supervisory	C	B	C	B
07.0909	Mortuary Science	C	C	C	C
07.9900	Health Occupations Education	B	B	B	B
09.0200	Home Economist Assistant	C	C	C	C
09.0201	Care and Guidance of Children	B	C	B	C
09.0202	Clothing, Management, Prod. & Ser.	C	D	C	C
09.0203	Food Management, Production & Service	A	C	B	C
09.0204	Home Furnishing, Equip. Services	C	D	D	C
09.0205	Institution & Home Management Serv.	B	C	C	C
14.0100	Accounting & Computer - General	C	B	C	B
14.0102	Bookkeeping	C	C	C	C.
14.0103	Cashiers	C	C	C	C
14.0104	Machine Operators	B	B	B	B
14.0105	Tellers	C	B	C	B
14.0200	Business Data Processing	A	A	A	B
14.0201	Computer & Console Operators	A	A	A	B
14.0202	Keypunch, Coding & Oper. Equipment	C	C	C	C
14.0203	Computer Programmers	A	B	B	C
14.0204	Systems Analysts	A	A	A	B
14.0300	Filing, Office Machines & General Office	C	C	C	C
14.0301	Duplicating Machine Operators	C	C	C	C
14.0302	File Clerk	C	D	C	C
14.0303	General Office Clerks	C	B	C	B
14.0400	Information, Commun. Assistant	C	C	C	C
14.0401	Communication Systems Clerks	C	C	C	C
14.0402	Correspondence Clerks	C	C	C	C
14.0403	Mail & Postal Clerks	C	C	C	C
14.0404	Mail - Preparing & Mail Hand. Operator	C	C	C	C

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14.0405	Messengers & Office Boys and Girls	C	D	D	C
14.0406	Receptionist & Inform. Clerks	C	D	C	C
14.0500	Material Support Occupations	C	C	C	C
14.0501	Planning & Prod. Clerks	C	C	C	C
14.0502	Quality Control Clerks	C	C	C	C
14.0503	Shipping & Receiving Clerks	C	C	C	C
14.0504	Stock & Inventory Clerks	C	C	C	C
14.0505	Traffic, Rate, & Transport. Clerks	C	C	C	C
14.0600	Personnel Administrator	C	C	C	C
14.0601	Educ. Ass't & Training Specialists	C	D	C	C
14.0602	Interviewers & Test Technicians	C	C	C	C
14.0603	Personnel Assistant	C	C	C .	C
14.0700	Steno, Secretarial & Rel. Occupations	B	A	B	B
14.0701	Executive Secretary	B	A	A	B
14.0702	Secretaries	B	A	B	B
14.0703	Stenographers	B	A	B	B
14.0800	Supv. & Admin. Manage. Occupations	C	C	C	C
14.0801	Administrative Assistant	C	C	C	C
14.0802	Budget Management Analysts	C	C	C	C
14.0803	Clerical Office Supv.	C	C	C	C
14.0804	Data-Method & System-Proced. Analyst	C	C	C	C
14.0805	Office Managers and Chief Clerks	C	C	C	C
14.0900	Typing and Related Occupa.	C	A	B	A
14.0901	Clerk-Typist	C	A	B	A
14.0902	Typists	C	A	B	A
16.0100	Engineering-Related Tech.	C	A	B	A
16.0101	Aeronautical Technology	C	A	B	A
16.0103	Architectural Technician	B	A	B	B
16.0104	Automotive Technician	B	A	B	B
16.0105	Chemical Technology	B	A	A	B
16.0106	Civil Technology	B	A	B	B
16.0107	Electrical Technician	B	A	B	B
16.0108	Electronic Technician	B	B	B	B
16.0109	Electromechanical Technician	B	B	B	B
16.0112	Instrumental Technology	B	A	B	B
16.0113	Mechanical Technology	B	B	B	B

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16.0114	Metallurgical Technology	B	B	B	B
16.0115	Nuclear Technology	B	A	A	B
16.0116	Petroleum Technician	B	B	B	B
16.0117	Scientific Data Process.	B	A	B	B
16.0400	Office Related Tech.	C	C	C	C
16.0601	Commercial Pilot Training	C	C	C	C
16.0602	Fire and Fire Safety Tech.	B	A	B	B
16.0603	Forestry Technician	B	A	B	B
16.0605	Police Science Technician	B	A	A	B
16.9901	Air Pollution Tech.	B	A	A	B
16.9902	Water & Waste Water Technology	B	A	B	B
17.0100	Air Conditioning	A	A	B	B
17.0101	Cooling	B	A	A	B
17.0102	Heating	C	A	B	A
17.0108	Ventilating (Filtering & Humidity)	C	A	B	A
17.0200	Appliance Repair	C	B	B	B
17.0201	Electrical Appliances Repair	B	B	B	B
17.0202	Gas Appliances Repair	C	B	B	B
17.0300	Automotive Services	A	A	A	B
17.0301	Body and Fender Repairs	A	B	B	C
17.0302	Mechanics (Auto)	A	A	A	B
17.0400	Aviation Occupations	B	C	B	C
17.0401	Aircraft Maintenance	A	B	A	C
17.0402	Aircraft Operations	A	C	B	C
17.0403	Ground Operations	A	C	B	C
17.0500	Blueprint Reading	C	B	B	B
17.0600	Business Machine Maintenance	B	A	A	B
17.0700	Commercial Art Occupation	C	C	C	C
17.0701	Interior Decorating	C	C	C	C
17.0702	Window Display	B	C	B	C
17.0703	Designer	C	C	C	C
17.0800	Commercial Fishery Occupation	B	C	C	C
17.0801	Seamanship	C	D	D	C
17.0802	Ship & Boat Oper. & Maintenance	B	B	B	B
17.0900	Commercial Photography Occupations	C	C	C	C
17.0901	Photo. Lab. & Darkroom Occupations	C	C	C	C
17.1000	Construction & Bldg. Trades	C	B	B	B
17.1001	Carpentry	C	C	C	C
17.1002	Electricity (Construction)	C	B	B	B
17.1003	Heavy Equipment Operation and Maintenance	B	B	B	B
17.1004	Masonry	C	C	C	C

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17.1005	Painting & Decorating	C	C	C	C
17.1006	Plastering	C	D	C	C
17.1007	Plumbing & Pipefitting	B	B	B	B
17.1003	Dry Wall Installation	C	B	B	B
17.1009	Glazing	C	C	C	C
17.1010	Roofing	B	C	B	C
17.1100	Custodial Services	C	C	C	C
17.1200	Diesal Mechanic	B	B	B	B
17.1300	Drafting	C	S	B	S
17.1400	Electrical Occupations	B	B	B	B
17.14C1	Industrial Electrician	B	B	B	B
17.1402	Lineman	C	C	C	C
17.1403	Motor Repairman	B	B	B	B
17.1500	Electronics Occupations	A	C	C	C
17.1501	Communications	C	C	C	C
17.1502	Industrial Electronics	A	C	B	C
17.1503	Radio/Television Repair	B	B	B	B
17.1600	Fabric Maintenance-General	C	C	C	C
17.1601	Dry Cleaning	C	C	C	C
17.1602	Laundering	C	C	C	C
17.1700	Foremanship, Supv. & Management	C	C	C	C
17.1900	Graphic Arts Occupations	A	C	B	C
17.1901	Composition, Makeup & Typesetting	C	D	C	C
17.1902	Printing Press Operator	A	C	C	C
17.1903	Lithography, Photography & Platemaking	B	B	B	B
17.1904	Photoengraving	A	C	B	C
17.1905	Silk Screen Making & Printing	B	C	C	C
17.1906	Bookbinding	B	C	C	C
17.2000	Industrial Atomic Energy	A	A	A	B
17.2001	Installation, Oper. & Maint. Reactors	B	A	B	B
17.2002	Radiography	A	A	A	B
17.2003	Industrial Use of Radioisotopes	A	A	A	B
17.2100	Instrument Maintenance & Repair	A	B	A	C
17.2101	Instruments Repair (Other than Watch)	A	B	A	C
17.2102	Watchmaking & Repair	C	C	C	C
17.2200	Maritime Occupations	C	D	D	C
17.2300	Metalworking	B	C	B	C
17.2301	Foundry	B	C	B	C
17.2302	Machine Shop	B	A	A	B

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17.2303	Machine Tool Operator (Semi-Skill.)	B	B	B	B
17.2304	Metal Trades, Combined	B	C	B	C
17.2305	Sheet Metal	B	A	B	B
17.2306	Welding & Cutting	B	B	B	B
17.2307	Tool & Die Making	A	A	A	B
17.2308	Die Sinking	A	A	A	B
17.2309	Metal Patternmaking	B	B	B	B
17.2400	Metallurgy	B	B	B	B
17.2601	Barbering	C	C	C	C
17.2602	Cosmetology	B	B	B	B
17.2700	Plastics Occupations	B	B	B	B
17.2801	Fireman Training	B	B	B	B
17.2802	Law Enforcement Training	B	B	B	B
17.2900	Quantity Food Occupation	B	B	B	B
17.2901	Baker	B	D	C	D
17.2902	Cook/Chef	B	B	B	B
17.2903	Meat Cutter	B	C	B	C
17.2904	Waiter/Waitress	C	B	B	B
17.3000	Refrigeration	B	A	A	B
17.3001	Small Engine Repair Inter. comb.	B	B	B	B
17.3200	Stationary Energy Source	A	A	A	B
17.3201	Electric Power & Generating Plants	B	B	B	B
17.3202	Pumping Plants	C	C	C	C
17.3301	Dressmaking	C	D	D	C
17.3302	Tailoring	C	C	C	C
17.3400	Leatherworking	C	C	C	C
17.3401	Shoe Manufacturing	C	C	C	C
17.3402	Shoe Repair	C	C	C	C
17.3500	Upholstering	C	C	C	C
17.3600	Woodworking	C	B	C	B
17.3601	Millwork & Cabinet Making	B	C	C	
01.9902	Ag. Cooperative Educ.			A	
04.9902	Marketing Cooperative (D.O.)			A	
07.9902	Health Occupations Co-Op			A	
09.9902	Home Economics Cooperative (H.E.R.O.)			A	
14.9902	Office Occupations Co-Op (O.O.)			A	
16.0111	Quality Control Technology			B	
16.0199	Numerical Control Tech.			A	
16.0199	Optics Technology			B	
16.0199	Plastics Technology			B	
16.0199	Radio & Television Engineering			B	

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17.9902	Industrial Cooperative (D.O., I.C.E.)			A	
18.9902	Interrelated Cooperative Education			A	
18.9906	Interrelated Cooperative Education			A	
18.9906	Special Education Cooperative Education			A	
18.9909	Special Education In-School Voc. Ed. Programs			B	
	Tech. Math I			D	
	Tech. Math II			D	
	Tech. Physics I			D	
	Tech. Physics II			D	
	General Physics I			D	
	General Physics II			D	
	Hist. & App. of Motion Pictures			D	
	Beginning Reporting			D	
	Introduction to Advertising			D	
	Federal Government			D	
	State and Local Govt.			D	
	Human Relations			D	
	Principles of Economics			D	
	Hist. of Current Problems			D	
	Human Relations			D	
	Rhetoric & Comp. I			D	
	Rhetoric & Comp. II			D	
	Elementary Tech. Math			D	
	Basic Tech. Math			D	
	Tech. Science			D	
	Introduction to Anc. and Med. Art			D	
	Advanced Technical Math			D	
	Intro. to Psychology II			D	
	Developmental Psychology			D	
	Social Science I			D	
	Applied Physics I			D	
	Math I			D	
	Math II			D	
	Intro. to Psychology			D	
	Paramedical Relationships			D	
	Intro. to Sociology			D	
	American National Govt.			D	
	State and Local Govts.			D	
	Physical Science			D	

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	Inter. Algebra			D	
	Plane Trigonometry			D	
	Business Law I			D	
	Business & Technical Math			D	
	College Algebra			D	
	Introduction to Physical Science			D	