FUNDING VOCATIONAL EDUCATION IN OHIO: RESULTS OF A NATIONAL SURVEY OF STATE PRACTICES

Submitted to the Ohio Legislative Office of Education Oversight

This report prepared by:

Steven Klein
Gary Hoachlander
Renée Beltrenena
Tawny Beal

MPR Associates, Inc.
2150 Shattuck Avenue, Suite 800
Berkeley, CA  94704

December 1, 2000
Table of Contents

Introduction ........................................................................................................................................1

I. What Are the Costs of Providing Vocational Education? .....................................................3
   The Costs of Vocational Education .....................................................................................3
   Vocational Teacher Salaries ...............................................................................................3
   Class Size ..............................................................................................................................5
   Purchase and Maintenance of Vocational Instructional Equipment .................................6

II. State Approaches to Funding Vocational Education .........................................................8
   About the Survey ..................................................................................................................8
   State Rationale for Funding Approaches ...........................................................................8
      Category I: Foundation Grants ..........................................................................................9
      Category II: Unit Cost Funding .......................................................................................12
      Category III: Weighted Funding ....................................................................................17
      Category IV: Performance Funding ..............................................................................19

III. Reflections on State Funding Practices for Vocational Education ...............................22
   A Cautionary Note ...............................................................................................................22
   Identifying the Costs of Vocational Education ................................................................23
      Cost of Vocational Inputs ...............................................................................................24
   Using Data for Policymaking Purposes ............................................................................25

Summary .......................................................................................................................................27

References .....................................................................................................................................29
Introduction

Education policymakers generally accept that vocational education is more expensive to provide than other forms of instruction, although the actual magnitude of this added expense has yet to be conclusively documented. To ensure that all students in Ohio have access to quality vocational instruction, Ohio has long provided supplemental financial support to public school districts for vocational education. Historically, this additional funding was allocated on a unit-cost basis, with allocation size varying by vocational program area: districts employing a full-time teacher to instruct a class of at least 12 students were eligible for state compensation.

In March 1997, the Ohio Supreme Court, in its DeRolph I decision, ruled Ohio’s public school finance system unconstitutional, in part because state funding for vocational education failed to account for wealth differentials across districts. In response to this ruling, the Ohio General Assembly, in consultation with national finance experts and Ohio Department of Education (ODE) staff, revised its vocational funding policies, eliminating unit-based funding in favor of a weighted, per-pupil formula that controlled for district wealth. Ohio’s current vocational funding mechanism, which builds off this initial work, relies on student assigned funding weights: each full-time-equivalent (FTE) student enrolled in selected vocational programs generates supplemental resources to account for the higher costs associated with vocational instruction.

Concerns over the appropriate means by which to fund vocational education prompted the Ohio General Assembly, in February 1998, to direct the Legislative Office of Education Oversight (LOEO) to evaluate the costs associated with providing vocational education and to recommend a method, including a weighted per pupil mechanism (LOEO 2000). To help inform this effort, in mid-2000 the LOEO contracted with MPR Associates to conduct a national survey of state vocational education funding practices.

Results from the national survey suggest that states are using a variety of approaches to fund vocational education, with the majority employing either unit-cost-based mechanisms, similar to that formerly employed in Ohio, or weighted, per-pupil formulas comparable to those recently adopted by the state. A small number of states are experimenting with performance-based funding formulas, which allocate resources based on student outcomes, and some—typically the smaller, more rural states—do not provide any supplemental resources for vocational instruction. Predictably, the rationale for different state funding strategies and levels of support vary by state, and are often a function of historical state funding practices, legislative intent, scale of the vocational enterprise, and breadth and scope of vocational instruction.

This paper is organized in three sections. The first reviews factors that can contribute to higher costs for vocational instruction and identifies characteristics of vocational delivery in Ohio that may affect vocational provision. This section lays the framework for section two, which summarizes results of the 50-state survey commissioned by Ohio. State strategies for funding vocational education are presented, with
emphasis placed on contrasting funding patterns across states and with respect to Ohio. The third section distills findings from the national survey to identify funding practices that may help inform policy development in Ohio, and includes a discussion of the types of information the state will likely need to collect in order to evaluate its current vocational funding system. The paper concludes with a brief summary.
I. What Are the Costs of Providing Vocational Education?

Although the costs of providing vocational education have yet to be fully quantified, vocational education is generally recognized in the education community as being more expensive to provide than other forms of instruction. This section briefly reviews the vocational funding literature to identify, and where possible quantify, the component costs of vocational education relative to other forms of instruction. Since costs may also be a function of how instruction is provided, a brief description of Ohio’s vocational delivery system, and the cost implications of its organization, are also included.

The Costs of Vocational Education

While a number of factors contribute to the higher costs associated with vocational education, the majority of expenditures may be captured by three factors: 1) salaries for vocational teachers; 2) the relatively small size of vocational classes; and 3) the purchase and maintenance of vocational instructional equipment. Student demographics and state, regional, and local economic conditions, such as the demand for skilled labor or the price of inputs, may also affect the relative cost that local agencies face in providing vocational services. Moreover, the manner in which vocational education is organized and delivered, through the use of specialized area vocational centers or compacts of two or more districts, may also affect the cost of vocational provision.

Vocational Teacher Salaries

Staff salaries and related benefits comprise the single greatest expense in providing educational services. According to national data, teacher salaries and related benefits constituted roughly 57 percent of all elementary and secondary expenditures for public schools in 1996–97. Within Ohio, expenditures were relatively comparable to national totals, with roughly 55 percent of total costs allocated for elementary and secondary teacher salaries. Given that some states offer different salary schedules for elementary and secondary educators, it is possible that these figures actually understate the proportion of state expenditures devoted to secondary public instruction.

Since Ohio does not maintain separate salary schedules for vocational instructors, it might be expected that, other things being equal, the average salary of vocational and academic educators in Ohio should be roughly equivalent. However, teacher compensation is also a function of other factors, such as instructors’

---

1 This paper focuses on recurring annual costs associated with vocational instruction. Non-recurring costs, such as those associated with constructing specialized vocational instructional facilities (e.g., joint vocational schools), are not covered in this paper.

2 U.S. Department of Education 1999. Excludes expenditures for adult education, community colleges, and private school programs funded by local and state education agencies, and community services; expenditures for property and for building and alternations completed by school district staff or contractors; and interest on school debt.
educational attainment, professional development, contractual incentives, extended service provisions, and years of teaching experience. As such, the marginal cost of employing an instructor in Ohio is dependent upon workforce characteristics. If vocational educators are, on average, more experienced or more likely to pursue advanced training than academic instructors, then school districts in Ohio may face a greater cost in supplying vocational education than other types of instruction.

While variation in teacher qualifications may contribute to salary differentials between vocational and academic teachers, at the state level, average base salaries for full-time vocational and academic teachers in Ohio are not substantially different. Vocational teachers made less than 4 percent more than academic teachers in the 1997–98 school year ($40,834 versus $39,363, respectively), meaning that, on the average, vocational teachers are only slightly more expensive to compensate than academic instructors (Table 1).

Table 1: Average salary of FTE teachers in Ohio public elementary and secondary schools, by type of district and teacher subject area: 1997–1998

<table>
<thead>
<tr>
<th></th>
<th>Total Regular FTE</th>
<th>Total Regular Instructor</th>
<th>Total Vocational FTE</th>
<th>Total Vocational Instructor</th>
<th>Percentage Difference</th>
</tr>
</thead>
<tbody>
<tr>
<td>State Average</td>
<td>79,410</td>
<td>$39,363</td>
<td>7,567</td>
<td>$40,834</td>
<td>3.7%</td>
</tr>
<tr>
<td>Cities</td>
<td>47,033</td>
<td>40,758</td>
<td>3,110</td>
<td>42,769</td>
<td>4.9</td>
</tr>
<tr>
<td>Exempted Villages</td>
<td>4,052</td>
<td>38,809</td>
<td>170</td>
<td>41,151</td>
<td>6.0</td>
</tr>
<tr>
<td>Local</td>
<td>28,001</td>
<td>37,146</td>
<td>1,430</td>
<td>37,842</td>
<td>1.9</td>
</tr>
<tr>
<td>County Boards</td>
<td>93</td>
<td>25,541</td>
<td>18</td>
<td>33,290</td>
<td>30.3</td>
</tr>
<tr>
<td>Joint Vocational School Districts</td>
<td>230</td>
<td>39,596</td>
<td>2,840</td>
<td>40,249</td>
<td>1.7</td>
</tr>
</tbody>
</table>

SOURCE: Ohio Department of Education

A review of combined elementary and secondary teacher salary data in Ohio (Table 1) suggests that school districts do face different costs in employing teachers, and that this difference varies by district type. On average, vocational instructors employed in city districts make more than their colleagues in all other school districts. For example, the average city vocational instructor in 1997–98 made $42,769, compared to $40,249 for a vocational instructor based in a joint vocational school district. Moreover, teachers of vocational subject areas earned more than their colleagues teaching academic subjects, and this finding held irrespective of district type. To illustrate, teachers of vocational subject matter in city school districts earned nearly 5 percent more ($2,011) than teachers of regular subjects based in city districts.

While the relative cost of employing vocational teachers is generally higher than that of regular teachers, the additional cost districts face in employing vocational instructors may not be significant, in part because local agencies do not generally hire the same number of vocational and academic teachers. Statewide, vocational teachers comprised less than 9 percent of the combined academic and vocational teacher workforce (7,567 vocational FTE compared to 79,410 regular FTE instructors). Moreover, pay differentials between regular and vocational instructors were relatively small in districts employing a
relatively large number of vocational instructors (e.g., Joint Vocational School Districts), suggesting that
the marginal cost of employing vocational teachers may be inconsequential.

These aggregate figures conceal a considerable amount of information, in part because they do not control
for level of instruction or teacher subject area. Specifically, do elementary teachers and secondary teachers
receive the same compensation, on average, or is there some systematic difference in the experience and/or
training between these two groups? Within secondary education, are vocational educators compensated at
the same rate across vocational program areas, and if not, what factors differentiate the two groups? Are
teacher salaries a function of school location or size? Answering these specific questions will require a
more detailed study of state data, one that is beyond the scope of this report; however, such analysis is
necessary if Ohio is to document the relative costs that Local Education Agencies (LEAs) in Ohio face in
funding vocational instruction.

Instructional cost differences may be offset, in part, by the Cost of Doing Business factor included within
the state’s base funding calculation. This factor uses a wage-based measure to adjust school expenditures to
reflect average wages across eight industry sectors within a county, as well as across contiguous counties.
While the ideal standard might be to adjust each county’s sectoral wage mix to resemble more closely the
employment types typically found in elementary and secondary schools, it appears that the state has taken
adequate steps to compensate districts for regional cost differences beyond their control (Rothstein and
Smith 1997). Nevertheless, if local school districts are required to offer relatively higher salaries to attract
qualified vocational teachers—for example, by crediting instructors with additional experience—then the
Cost of Doing Business factor may not fully compensate for differences between academic and vocational
teacher salaries.

**Class Size**

Vocational classes are often smaller than academic classes, in part because the high cost of specialized
instructional equipment and the potentially higher risk associated with equipment use dictate lower student-
teacher ratios. This implies that school districts will need to employ relatively larger numbers of FTE
vocational instructors to generate a similar number of student contact hours. Indeed, many states are using
instructional unit costs to calculate funding eligibility, based on the assumption that vocational class sizes
are anywhere from 15 to 30 percent smaller than academic classes. Indeed, according to a 1998 proposal by
the Ohio Vocational Coalition and the Education Management Information System (EMIS) data, the
average size of a vocational education class in Ohio is approximately 10 FTE instructors per unit, which is
considerably smaller than an academic classroom. As such, even if the cost of employing vocational
instructors in Ohio is not appreciably higher than employing academic teachers, the smaller class sizes
associated with vocational education can boost the average cost of vocational instruction.
Further complicating the issue is that Ohio operates three categories of secondary vocational programs, each of which serves different student populations. Workforce Development is intended to prepare high school students for career and technical education leading to high-skill and high-wage jobs in a variety of industry sectors. These programs, which draw from the general population of students, receive an add-on weight of 0.6 per Average Daily Membership (ADM) student, which is intended to cover the average cost of providing instruction across vocational program areas. If vocational class sizes differ among program areas, within programs (e.g., introductory versus advanced coursework), or across institutional settings, then use of an average add-on weight may not cover an equal proportion of program costs incurred by local districts.

Two other programs, Work and Family Studies and Career-Based Intervention, which provide services for targeted student populations, each receive an add-on weight of 0.3 in funding calculations. Work and Family Studies is designed to prepare youth to make informed life choices, and consists primarily of coursework in areas such as Family Relations, Parenting, and Personal Development. Career-Based Intervention programs focus on at-risk students with barriers to career and academic success. Although each program has the same weight, it is not clear that instructional inputs are the same across the two. For example, it may be that average class sizes are smaller in Career-Based Intervention programs to allow teachers to devote more individualized attention to their students. Analysis of state data, controlling for student participation by program area, can help clarify the extent to which the interaction of class size and teacher salary contribute to the additional cost of providing vocational education.

**Purchase and Maintenance of Vocational Instructional Equipment**

The literature provides relatively little information on recurring capital costs, in part because few states collect data on district expenditures by purpose. Further complicating the issue is that many school districts have identified different strategies for securing instructional supplies and equipment. Materials may be donated by employers, purchased periodically or via negotiated agreements with manufacturers, funded using Perkins dollars, or obtained using other, more creative means (e.g., student fund-raisers, reconditioning discarded equipment).

In a study comparing the costs associated with vocational education in area vocational schools and comprehensive high schools, Chambers (1990) concluded that the cost of supplies for vocational instruction was substantially higher than that for academic classrooms. Based on a review of the literature, Klein and Hoachlander (1998) concluded that the cost of maintaining vocational facilities within comprehensive high schools is marginally more expensive than that of academic classrooms. They caution, however, that costs are likely to vary by program area, with relatively more space- and machine-intensive programs, such as trade and industry, being more expensive to sustain. Goishi (1970) in a study of funding in area vocational-technical schools in Missouri, concluded that administrative costs and the amount of
equipment used within programs were the major contributors to operating costs, suggesting that area schools may face additional fiscal pressures.

While the actual cost of vocational supplies and equipment has yet to be reliably quantified, a number of states attempt to provide local agencies with separate resources to support the additional cost of vocational instruction. In some cases, this funding is provided as part of the state funding formula or is reimbursed at a set rate; in others, a fixed dollar amount has been established. To compensate for the higher costs associated with vocational instruction, Delaware, for example, provides districts with $4,810 for each unit of regular high school instruction and $12,529 for each vocational unit.

Given that local agencies offering vocational instruction in Ohio must provide students with access to at least 12 different vocational course offerings, it is likely that most districts in the state face some additional cost in equipping vocational programs. Districts forming joint vocational schools or entering into compacts may face slightly lower equipment costs or be able to purchase equipment more easily if pooling resources or specializing in a vocational program area enables an agency to share the burden of obtaining equipment. Districts operating comprehensive high schools likely incur the greatest expense in providing vocational education, in part because each district must individually staff and equip at least 12 vocational programs. To determine whether current state funding is sufficient to support vocational programs, the state may wish to assess whether the age and quality of district equipment is a function of instructional setting, and if so, the implications for student learning.

In the absence of state or national data on equipment costs, perhaps the best means of quantifying the relative cost of vocational education is to examine statewide approaches for funding vocational education. One advantage of using state-derived data is that these data can shed light on actual state vocational funding practices, and thus provide a more complete picture of the relative expense associated with vocational delivery. A survey of state funding practices can also provide useful information to help Ohio, should it seek to recast its current funding formula.
II. State Approaches to Funding Vocational Education

The literature provides relatively little guidance on the cost of providing secondary vocational education or the most effective strategy for allocating state resources among local agencies. To assist Ohio in assessing how its level of funding and its formula for distributing resources compare to that of other states, MPR Associates conducted a national survey of state vocational funding practices. This section summarizes the different strategies states are using to fund vocational programs, quantifies the level of support afforded by these approaches, and assesses the rationale and supporting data on which these formulas are based.

About the Survey

Prior to surveying states, MPR researchers contacted representatives of a number of national agencies, including the Office of Vocational and Adult Education of the U.S. Department of Education, the National Association of State Directors of Vocational Education Consortium, and the American Vocational Information Association. These communications suggested that there has been little effort to document state funding practices; accordingly, based on these initial conversations, as well its own review of the literature, MPR determined that it would need to contact state administrators individually to catalog current state funding practices.

As a preliminary activity, in July 2000, MPR researchers accessed the World Wide Web to download state legislation, administrative codes, and state guidelines governing vocational funding. This information was reviewed and summarized prior to placing phone calls, beginning in August 2000, to state finance experts located within state education and/or finance departments. Using a common interview protocol, MPR researchers interviewed state staff to validate state finance data, to fill in missing information or process descriptions, and to clarify state intent. In some cases, administrators were contacted on multiple occasions to ensure accuracy of reporting.

State Rationale for Funding Approaches

Conversations with state representatives revealed a range of intentions underlying state funding practices. In many cases, staffers spoke of inheriting historical funding formulas that had been in place for years prior to their hire. When pressed on the reasons for their continued use, staff often mentioned the importance of maintaining stability in annual allocations, as well as a lack of interest in fiddling with a system that appeared to be working. Furthermore, not all staff fully understood the operation of their funding formula: individuals in one state, which employs a mathematically complex, data-driven formula, directed MPR to an independent foundation for an explanation of how the formula operated.

In contrast, a number of states had recently adopted, or were transitioning to new allocation mechanisms. Changes in state funding practices in these states were often due to court rulings, arising from state equity...
and adequacy lawsuits, threats of lawsuits, or state legislative mandates to reform vocational education policy. With respect to judicial action, modifications to state vocational funding formulas were often a byproduct of wider judicial rulings pertaining to overall state education funding. Since 1993, at least 10 states have undertaken systematic changes in their state funding approaches (Education Commission of the States 1999).

Shifts in state education policy have also led to changes in state funding for vocational education. For example, Indiana recently adopted a new vocational funding formula, effective January 2001 that is intended to promote state economic competitiveness. Under the new formula, local agencies are funded based on student participation in specific vocational program areas, with additional resources awarded for pupils who participate in vocational program areas for which there is above average labor market demand. Responding to legislative pressure, Florida recently instituted a postsecondary performance incentive system that rewards local agencies for student completions and workforce placement.

Although states employ a variety of methods to fund vocational education, those earmarking resources can be grouped into four broad categories: foundation grant programs, unit costs funding, weighted adjustments, and performance-based outcomes. Classifying individual state approaches is complicated by a number of factors. In many cases, states may employ two or more strategies to allocate resources; for example, basing funding on vocational full-time-equivalent students in conjunction with an equipment or administration stipend. States also fund vocational services provided in a variety of administrative settings, including area vocational high schools, comprehensive high schools, and collaborative district ventures (e.g., consortia). Whether or not a state has multiple vocational delivery systems and whether or not these systems are funded using similar allocation criteria also complicate classification attempts.

To simplify analysis for the purposes of this study, state funding systems are classified based on the practice used to distribute a majority of state vocational funds. Greater emphasis is placed on quantifying the level of vocational funding and its relationship to other forms of instruction, than in detailing the multitude of channels by which vocational funds may be disbursed. Given Ohio’s interest in identifying accounting methods and funding mechanisms that might be adapted for the state, effort is also made to highlight innovative practices developed by other states. A matrix of state funding approaches is provided in each section to assist the reader in making cross-state comparisons.

**Category I: Foundation Grants**

State foundation grant programs are intended to ensure that all students in a state receive a minimum level of basic education services. Each year, the state establishes a threshold spending level for each student, often expressed in full-time-equivalent (FTE) or Average Daily Membership (ADM) units, which is then adjusted to account for district attributes, which may include local wealth or taxing capacity, school size.
and urbanicity, and/or student characteristics or special needs. Districts receive an allocation proportional to the number of students they enroll, and have some level of flexibility in how this money is spent.

Twenty percent of states, including Arkansas, Nebraska, Nevada, New Hampshire, New Jersey, New Mexico, Oregon, South Dakota, Wisconsin, and Wyoming, do not budget supplemental funding for vocational education in addition to their state foundation grant program. Instead, vocational funding is left to local discretion: districts choosing to offer vocational programs must do so out of their state foundation funding or supplement state funds with federal Perkins and/or local contributions.

Although these 10 states do not earmark additional funding for vocational education, it is likely that most, if not all, of these states indirectly address the cost of providing vocational education when setting their foundation funding levels. Given that districts in each of these states have historically provided students with access to vocational services, in some cases including programs at area vocational high schools, it is clear that the absence of supplemental funding has not eradicated vocational instruction. This may be because the size of state foundation grants is sufficient to support vocational instruction, because local agencies have found other sources to fund vocational programs, or because the type of vocational instruction, and manner in which it is delivered, conform to available funding.

Some states have developed foundation grant formulas that implicitly account for the average cost of providing vocational instruction within the state. To establish state funding levels, Wyoming has adopted a Cost Based Grant Model that takes into account approximately 25 instructional and operational cost components, including the average cost, statewide, of providing vocational education. Consequently, in the aggregate, the basic block grant under the new system is sufficient to pay for the amount and quality of vocational education that was offered prior to changes in the state school finance system.

Recognizing that students participating in vocational education may be required to travel off-site to receive services, some states have provided local agencies with some flexibility in calculating vocational FTE students. Nevada, for example, allows local districts to count students who are involved in cooperative work agreements even if they spend as much as one-third of their day off campus. Moreover, states operating stand-alone area vocational schools, such as Arkansas, provide a small amount of money for equipment and program start-up, available on an RFP basis.

A review of state foundation spending (see Table 2) suggests that some states, including New Jersey, New Hampshire, and Wyoming, provide a relatively high level of support for students. In fact, unadjusted state funding in New Jersey for academic students ($7,913) exceeds that of unadjusted funding in Ohio for vocational students participating in traditional program areas ($6,870), as well as those in family studies
and intervention programs ($5,582). Whether these relatively higher expenditures reflect states’ consideration of vocational education in setting foundation allocation levels is unknown.

Table 2: Unadjusted base expenditures per student in average daily attendance in public schools and whether states operate separate area vocational schools, by state: 2000–01

<table>
<thead>
<tr>
<th>State</th>
<th>Base Expenditure per Student</th>
<th>Separate Area Vocational School</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ohio</td>
<td>$4,294</td>
<td>Yes</td>
</tr>
<tr>
<td>Arkansas</td>
<td>$4,492</td>
<td>Yes</td>
</tr>
<tr>
<td>Nebraska</td>
<td>$4,606</td>
<td>No</td>
</tr>
<tr>
<td>Nevada</td>
<td>$5,614</td>
<td>No</td>
</tr>
<tr>
<td>New Hampshire</td>
<td>$6,622</td>
<td>Yes</td>
</tr>
<tr>
<td>New Jersey</td>
<td>$7,913</td>
<td>Yes</td>
</tr>
<tr>
<td>New Mexico</td>
<td>$2,632</td>
<td>No</td>
</tr>
<tr>
<td>Oregon</td>
<td>$4,440</td>
<td>No</td>
</tr>
<tr>
<td>South Dakota</td>
<td>$3,666</td>
<td>Yes</td>
</tr>
<tr>
<td>Wisconsin</td>
<td>$4,756</td>
<td>No</td>
</tr>
<tr>
<td>Wyoming</td>
<td>$6,405</td>
<td>No</td>
</tr>
</tbody>
</table>

SOURCE: MPR Associates, Inc.

Direct comparisons of state foundation funding levels do not necessarily provide sufficient information to determine whether a local agency is receiving adequate funding for vocational services. A variety of state and local factors, such as the type, scope, and specificity of vocational curricula can affect the relative cost of providing vocational instruction, rendering useless any interstate comparison of total per-student expenditures. It is perhaps reasonable to conclude that states that have considered the costs of vocational education when setting their foundation grant levels are more likely to provide support than those that do not, and that this, in turn, may affect local decisions to offer vocational coursework.

While this study did not attempt to contrast the type of vocational coursework or curricula offered across states, it may be that failing to provide additional funds for vocational education may drive local agencies away from certain types of instruction. For example, if capital-intensive, occupationally specific instruction is relatively more expensive to provide than introductory survey coursework, state and local agencies may be more likely to offer more generalized instruction. Alternatively, districts may have an incentive to reduce all vocational services if the size of state allocations is not sufficient, in combination with other resources, to reimburse for vocational costs. Conversations with staff from South Dakota, which recently dropped all supplemental funding for vocational education, reveal that local school districts are having an increasingly difficult time subsidizing vocational education.

Unadjusted funding refers to the base foundation level of funding prior to adjustments for local conditions that may affect the cost of providing services. For the 2000–01 school year, the unadjusted base of funding in Ohio per FTE student is $4,294. Vocational cost per FTE student for Ohio quoted here is based on $4,294 times the vocational add-on weights of 1.60 and 1.30. In practice, local allocations will vary, depending upon state adjustment and local characteristics.
Given that Ohio is neither using a foundation grant program to fund vocational education, nor has any plans to adopt such a program, it is unlikely that the state will benefit from a more detailed discussion of the approach. Funding local agencies based on the average cost of providing educational services may have some implications for Ohio, however, which allocates state resources for vocational education using add-on weights that reflect average, statewide program costs. We will return to this issue in a later section.

**Category II: Unit Cost Funding**

As part of their annual appropriations, state legislators in a number of states routinely budget resources in support of vocational education. The size of these appropriations varies widely across states and is often a function of a number of factors, including state economic conditions, the number of students participating in vocational programs, the number and type of local agencies offering services, historical funding precedent, and the relationship of vocational education to other legislative priorities. Although these annual allocations may run into the hundreds of millions of dollars, state funding usually covers only a fraction of total spending on vocational instruction.

To allocate funding to locals, state administrators design funding formulas that take into account a variety of district characteristics. The mechanism used to disseminate state aid varies across states, with most basing resource eligibility on the level of student participation in vocational education, the number of teachers required to provide instruction, or the overall costs incurred in providing vocational services. As might be expected, given the rash of lawsuits over school finance, states often include some form of fiscal equalization factor in their formula to control for district wealth. Other factors used to adjust state allocations to local agencies include program type, length of training, size of institution, student attainment of performance measures or skill certification, and student participation in vocational organizations. A number of states, typically those concentrating funding in area vocational schools, also budget additional resources to support administration and facility construction, purchase, or lease.

**Funding by FTE Student Participation**

A number of states condition the size of district allocations, in part or whole, on the number of students participating in local agencies. To distribute funding, state administrators calculate districts’ proportional share of state student vocational FTE enrollment and multiply this number by the total state funds appropriated for vocational education. Accordingly, a district enrolling 5 percent of the state FTE vocational students would be eligible to receive 5 percent of the state funds allocated for vocational education.
States that allocate a majority of their vocational funding based on student participation levels include Arizona, California, Connecticut, Massachusetts, Maryland, Minnesota, Montana, New York, North Carolina, Hawaii, Rhode Island, Utah, Vermont, Washington, and West Virginia.

Even though each state relies on student participation rates to drive funding, the specific mechanism varies within states (See Matrix 1).

To consolidate state resources, a number of states, including California, Connecticut, New York, Rhode Island, and Vermont, earmark state funding for area vocational centers. California provides a fairly good example of the mechanism employed by most states: funding is distributed to 82 Regional Occupational Center/Programs based on centers’ average daily attendance. To equalize funding, adjustments are made for center size and revenue limits. To adjust for district wealth, New York offers its area centers the choice of calculating reimbursement eligibility based on the number of students participating in a center or its millage ratio, which is based on the tax rate of sending districts. Not all states that fund centers correct for district wealth: Connecticut allocates 75 percent of funding based on the number of programs and students enrolled, and 25 percent based on school square footage, and Vermont awards $500 per student enrolled in an area center, based on prior year enrollments.

The remaining 10 states fund vocational instruction regardless of whether it is offered in a comprehensive high school or area vocational center. In most cases, states have evolved unique funding formulas that, though based on vocational FTE student enrollment, employ a number of other factors for distributing funds. Arizona has developed one of the more complex formulas: roughly 83 percent of state vocational funds are distributed by a vocational education block grant, 90 percent of which is allocated based on 11th- and 12th-grade vocational enrollment, and 10 percent on placement in employment. Moreover, vocational enrollments are adjusted by class length and weighted by program area, with higher priority programs—those preparing students for high demand, high wage occupations—given greater weight. Remaining funding is earmarked for administrative costs. The distribution formula is less complicated in other states; for example, North Carolina allocates state funding based on student ADM in grades 7–12. Each LEA is also eligible for a base amount of $10,000.

A number of states have developed unique cost formulas that differentially fund students participating in academic and vocational education. Individual factors that contribute to the cost of educating students (e.g., teacher salaries) are summed across instructional programs, by program area, to generate an overall cost of educating students. Massachusetts has perhaps one of the more intricate state formulas for calculating such student costs. Average expenditures for at least 19 factors, including salaries, benefits, professional development, physical plant, and equipment and supplies are calculated for 12 different

---

4Arizona uses both student participation levels and vocational student weights to distribute funding, with the majority of districts receiving funding based on student participation. Vocational weights are only applied to students participating in one of the state’s two joint vocational education districts operating area vocational schools that encompass roughly 12 of the state’s 231 districts.
student categories, of which vocational education is one. State data for the 2000–01 school year suggest that the cost of vocational education is 56 percent more expensive to provide than a general high school education: on average, districts in Massachusetts will received $5,449 for each high school student versus $8,549 for each FTE vocational student.

The state of Washington also employs a system that uses differentiated payment schedules based on the type of education a student pursues. A local agency is awarded $3,653 for each high school FTE student enrolled in academic coursework, compared to $4,316 for each vocational FTE student. State funding is only provided to districts that cap their staff-to-student ratios at 1:19.5 and that spend no more than 10 percent of their vocational expenditures on indirect costs (e.g., materials, supplies). Using data from earlier years, the state has calculated that average local vocational expenditures exceeded basic education expenditures by $758—less than the average vocational enhancement of $663.40.

Allocating resources based on the level of student participation in local agencies seems a reasonably good way of ensuring that funding is concentrated in areas of greatest demand. Moreover, this approach to funding, when adjusted for district and other local characteristics, can provide some assurance that state resources are equitably shared. It is not clear, however, that distributing funding on an FTE basis will ensure that all districts receive the minimum resources necessary to provide an adequate program of vocational services, even if the total state allocation for vocational education is sufficient. If there is a fixed cost associated with offering particular types of vocational programs, or in maintaining services across a number of program areas, then smaller districts or those offering more capital-intensive programs may be unable to support services.

It is difficult to assess the relative spending of other states in relation to Ohio, in part because most states do not calculate an average expenditure per student. State cost calculations are typically run at the district level and reported in the aggregate. While it is theoretically possible to back out per-student expenditures from district formulas, disaggregating this data would require a level of effort, for both state administrators and MPR research staff, that makes it impractical for the purposes of this study. It is possible, however, to draw comparisons between spending in Ohio and two states—Massachusetts and Washington—that report allocations for vocational students on an FTE basis. In the most current school year, average, unadjusted spending on secondary vocational students in Massachusetts was roughly 57 percent higher than for non-vocational youth. This figure is roughly comparable to the add-on-weighting factor in Ohio, which generates, on average, 60 percent more funding for vocational education. Both states, however, allocate significantly greater resources per FTE student than Washington, where funding for vocational students was only 18 percent higher than for other students.
Funding by Instructional Unit

States may also allocate funding based on the number of instructional units generated within a given district. States that rely on such unit-cost funding formulas include Alabama, Delaware, Kentucky, Mississippi, Tennessee, and Virginia (see Matrix 2). The calculation of instructional units is a function of the number of students participating in vocational education: the total number of students (often calculated on an FTE or ADM basis) is divided by an average vocational class size (fixed by the state) to generate total instructional units. When multiplied by a fixed dollar amount, these units provide a district with its overall funding eligibility.

When calculating instructional units, states often use different average class sizes for academic and vocational courses. Tennessee, for example, allocates state aid based on the average daily attendance records: a district earns funding for a teacher’s salary and expenses for each 26 general high school students and for each 20 vocational students enrolled. Rather than rely on a single average class size to calculate instructional units for vocational programs, Virginia has specified differing student-to-teacher ratios—ranging from 15:1 to 21:1—for differing vocational programs. Each vocation program unit is funded at a constant teacher salary amount of $37,262 per year plus 15 percent benefits; additionally, a 10 percent cost-of-living adjustment is provided in urban districts.

Not all states differentiate vocational and academic class sizes when calculating instructional units. In Delaware, vocational instructional units are treated as add-on funding—districts generate one instructional unit for every 20 students, irrespective of program area, and one-half unit for every 27,000 vocational pupil minutes per week. Mississippi, in contrast, calculates instructional units for vocational and academic students by dividing student FTE by an average class size of 27 students. An additional one-half teacher unit is then added for each approved vocational program, with funding based on certification and experience of an approved teacher.

Rather than link instructional funding to vocational student enrollments, Kentucky has adopted a unique formula in which school districts that operate an area center or vocational department receive $21,000/teacher for those employing up to five vocational instructors, $15,000/teacher for between six and nine instructors, and $10,000/teacher for 10 or more instructors. The state operates 52 centers that receive a direct line item appropriation in the budget as well as per-pupil funding from the basic school formula.

One advantage of instructor-based funding is that states have some flexibility in establishing the amount of supplemental funding local agencies may receive for vocational coursework. Specifically, states that adjust instructional units by vocational program area, as is the case in Virginia, may be better able to direct resources toward those programs that are most expensive to provide. By using smaller student bases for higher cost program areas, school districts can generate additional funding eligibilities for different programs enrolling the same number of students. This can provide local agencies with an incentive to offer
relatively more expensive programs, such as machine tools or automotive technologies that an average cost approach might not otherwise cover. Alternatively, districts can choose to offer smaller class sizes in high cost, capital-intensive vocational program areas.

*Funding by Cost Reimbursement*

A number of states, including *Colorado, Idaho, Iowa, Maine, Michigan, North Dakota, Oklahoma,* and *Pennsylvania* reimburse districts for all or a percentage of costs associated with providing selected vocational services (see Matrix 3). Each year, districts report their actual costs for vocational education programs and services, often categorizing these expenditures by purpose. States typically appropriate funding for vocational education based on prior year allocations and trends, with year-to-year adjustments made to reflect changes in state resources and district expenditures.

Some states, such as *Maine,* fully reimburse districts for all vocational costs in excess of the state foundation formula. District costs are reimbursed on a two-year lagged cycle, based on a formula that controls for district valuation and student enrollment. One drawback with this approach is that, since district expenditures are premised on full state reimbursement, fiscal shortfalls can reduce state capacity to reimburse districts, meaning that some portion of local costs will go unfunded. This can have severe consequences for districts that face budget deficits when anticipated state resources fail to materialize. A second problem with full cost reimbursement is that the approach does not encourage efficiency. One state representative pointed out that districts are actually encouraged to spend more under full cost reimbursement, since in theory all costs will be compensated.

An alternative to full cost reimbursement is to limit state compensation to a percentage of costs or subset of program expense categories. For example, *North Dakota* reimburses districts providing secondary occupational programs for 26 percent of the cost of instructional salaries and extended contracts, and 31 percent of approved travel. Area Vocational and Technology Centers are reimbursed for 39 percent of all approved costs. Similarly, districts in *Iowa* are reimbursed for a percentage of their local expenditures for teacher salaries, benefits, and travel. Like *North Dakota,* state funding in *Iowa* covers only a percentage of total local expenditures: for the 2000–01 school year, it is estimated that roughly 8 percent of actual vocational costs will be reimbursed by the state. While *Idaho* also offers cost reimbursement, each vocational program has a funding cap: Machining Technologist programs are capped at $15,390 per unit, while Marketing Education is capped at $5,130 per unit. A total of 43 different vocational program areas have been defined.

In practice, state funding is seldom sufficient to cover all of the costs associated with vocational education. For example, in *Colorado,* state funding is available only if a school district’s vocational program costs exceed 70 percent of the per-pupil funding otherwise available to it. Specifically, the state covers 80 percent of the first $1,250 of excess costs, and 50 percent of excess costs over $1,250. In 2000–01,
districts’ vocational program expenses will equal roughly $63.5 million, of which roughly $19 million will be eligible for state reimbursement. Available state funding will cover about 93 percent of the $19 million, with districts providing the remaining funding from other local sources.

**Oklahoma** has taken a unique approach to funding districts in that the state has defined quality criteria and associated costs for vocational services offered in comprehensive high schools and Area Technology Centers. Within comprehensive high schools, each district is awarded $200 per contract month for each vocational teacher; this money is used to support student organizations and professional development activities. Additionally, the state provides Program Assistance Grants, which vary between $560 to $8,280, depending upon vocational program area, to compensate for equipment, supplies, and staff development training.

Within Area Technology Centers, the state has established a Quality Foundation Formula, which stipulates the standard of instruction all students are to receive and the cost of meeting these standards; local agencies are refunded the difference between the cost of providing a quality program and available local resources. Specific indicators of quality are based on direct instructional costs, indirect costs, and transportation costs that are established for each program. Fixed levels of support are established by the state; for the 2000–01 program year, the estimated cost of providing a quality program in an Area Center was $118,359 per FTE program (average program size is 12 students), irrespective of vocational program area.

One advantage to cost reimbursement is that, by knowing in advance the amount of funding for which they will be eligible, local agencies are better able to set the level of vocational education they wish to offer. Enabling local choice may also assist agencies in spending their resources more optimally, since they may budget funding to reflect the mix of vocational and other services that match student and community tastes. Moreover, reimbursing districts for a percentage of expenditures can provide locals with an incentive to offer greater levels of vocational education than they might otherwise choose. The downside of cost reimbursement is that it can expose the state to some level of uncertainty in budgeting for vocational expenditures, since it may be difficult to predict changes in local spending. States may also require greater oversight of local spending, since locals may have an incentive to classify a variety of costs as vocational.

**Category III: Weighted Funding**

Weighted cost factors are used in state funding formulas to concentrate funding on vocational education. Weights function by mathematically inflating the number of FTE students participating in a vocational course or program area, thereby increasing an agency’s resource eligibility. States that use this approach include Alaska, Arizona, Florida, Georgia, Illinois, Indiana, Kansas, Louisiana, Ohio, South Carolina, and Texas (see Matrix 4).
The typical formula involves either add-on weights or vocational student weights. A state using an add-on weight would multiply its base foundation level of funding allocated for all students by a fractional number for each student participating in vocational programs. In contrast, a state employing a vocational student weight would simply specify different weights for students participating in vocational and non-vocational programs. While the two forms of weighting are subtly different, the effect is the same: youth enrolling in approved vocational programs qualify for more funding than those in other instructional areas.

**Texas** provides perhaps the clearest illustration of how vocational weighting formulas can operate. Within Texas, each FTE student in Career and Technology Education—defined as 1,080 contact hours a year—generates a weight of 1.37. To calculate the amount of funding local agencies are eligible to receive, total student contact hours are multiplied by three factors: 0.95, the adjustment for student absences; $2,537, the adjusted state basic allotment; and 1.37, the vocational student weight. The basic allotment may be adjusted per district to account for geographic variation in known resource costs and to ensure equity for small and mid-sized districts. **South Carolina** employs a similar formula, with the exception that each FTE student in vocational education generates a weight of 1.29, compared with 1.25 for other high school students. In **Florida**, this weight is 1.211 for vocational students.

Students participating in vocational education in **Kansas** produce an add-on weight, which is obtained by multiplying an agency’s FTE by a program weight adjustment of 0.5, which is then added to the original FTE. Other states employing add-on weights include **Louisiana** (0.05 weight) and **Illinois** (0.3 weight for specific program delivery situations). **Indiana** has developed a complex system of add-on weighting that differentially funds vocational programs based on their cost. For example, relatively more expensive programs, such as business education laboratory courses, are assigned an add-on cost of 0.33, compared to 0.19 for agriculture courses meeting one period per day. The state plans on phasing out this approach in the 2002–03 year, however, when it will adopt a student performance incentive model.

Although state funding for vocational education varies widely, it is perhaps more useful to assess the relative weight a state places on a student participating in vocational education than in comparing actual dollar amounts across states. State foundation levels vary widely across states, in part due to differences in state economic conditions, and in part due to the higher cost of providing educational services in some areas. Furthermore, because state foundation funding levels are often adjusted for a variety of factors prior to the calculation of vocational funding levels, comparisons of state foundation floors may provide misleading information. To promote equity across local agencies, nearly all states adjust their foundation funding level to account for local characteristics, meaning that the actual dollar amount of state aid per FTE student in vocational education may be, on average, substantially higher at both the state and local levels. Local characteristics that may affect funding levels may include district tax base and/or millage rate, student demographics, school size, teacher experience, and regional economic cost factors.
For the purposes of this analysis, state weights for vocational education are arrayed with state foundation funding levels for all students, in order to provide the reader with a basis for making rough comparisons across states. Approximate funding levels per FTE student participating in vocational education and regular high school instruction may be estimated from the weighted factors provided in the matrix. Assuming that the distribution of vocational students in school districts within states does not differ significantly from students participating in non-vocational programs, it would appear that, on average, states using weighted formulas allocate roughly 27 percent more funding for vocational education than general, non-vocational instruction. This average weight is somewhat lower than the 0.60 weight applied by Ohio; this, combined with the fact that base per-student funding is relatively high in Ohio, means that unadjusted state spending per FTE student is somewhat higher in Ohio than in other states.

**Category IV: Performance Funding**

Two states—Indiana and Missouri—condition all or a portion of their annual funding for vocational education on student participation in specific program areas and/or performance outcomes. This emphasis on student outcomes can be traced to a number of factors, including a desire on the part of state legislators to promote economic development and to make local agencies accountable for student results on some level. While only two states presently engage in this funding approach, a number of others in the national survey indicated an interest in making the switch (see Matrix 5).

Since 1974, Indiana has funded vocational education using a system of program-specific, added-cost weights: relatively higher cost programs, such as Trade and Industry, were weighted higher than less capital-intensive programs, such as Consumer and Homemaker education (0.48 versus 0.14, respectively). Beginning in the 2002–03-school year, the state will transition to a new outcome-based system. Specifically, districts will earn $550 for each student who receives a certificate of achievement in a technical field, $1,000 for students participating in high-demand employment or labor market fields, $700 for students in moderate-demand fields, $300 for less-than-moderate-demand fields, and $230 for students enrolled in apprenticeship programs. Although the formula appears to represent a dramatic change in state funding, the amounts allocated for each outcome, as well as the outcomes themselves, were identified to keep overall district funding relatively constant.

In contrast, Missouri’s uses a state instructional salary reimbursement formula that bases funding to area vocational schools and comprehensive high schools on a combination of the number of teachers employed and the performance of each agency. For example, comprehensive high schools are eligible for a funding base of $300 per contract month for each full-time, certificated vocational education teacher, and $35 per class period for part-time teachers. Incentive funding is then awarded conditioned on the relative success of the agency in placing students in jobs and the responsiveness of a particular program to labor market supply and demand factors. Values for each component are added together to obtain an Effectiveness Index score that is used to determine agency eligibility for state funds appropriated for incentive funding. State resources are
also available for the purchase of instructional equipment through state enhancement grants (covering 75 percent) and annual equipment funding (covering 50 percent) of the cost of new equipment.

While there are often compelling reasons to reward districts for positive outcomes, ensuring that the competition is fair and that the results reinforce the provision of high-quality vocational education should be the highest priority. For example, a state adopting a performance-based formula that rewards programs in high demand labor market areas or those with high placement rates should consider earmarking funds for districts seeking to change their program offerings. Otherwise, districts that do not quality for incentive funding may find it difficult to ever generate sufficient resources that will allow them to implement relatively higher-quality instructional programs.

Moreover, unless state incentive systems adjust for district size, basing funding on student outcomes may unfairly reward larger, more urban districts, even if they engage in relatively low-quality instruction. Given the greater availability of jobs in metropolitan areas, as well as the larger number of potential completers, the scale of the enterprise may contribute more to outcomes than the instruction itself. Economies of scale may also give larger agencies an unfair advantage in either purchasing equipment or providing different types of vocational offerings. Moreover, unless steps are taken to audit local agencies, educators may have some incentive to emphasize completion at the expense of program content.

Finally, the philosophical question is whether funding performance outcomes will support the central mission of vocational education. Do incentive systems penalize districts whose vocational programs stress academic and cognitive skills and whose aim is preparing students for college rather than employment immediately after high school? While the Missouri system awards similar points for students who find employment or who enroll in continuing education, a higher weight is applied to students who pursue related postsecondary education than for those who in unrelated education, which could include pursuit of a baccalaureate-level degree.

A second question is whether performance-incentive systems introduce accountability into vocational funding formulas at the expense of choice or equality. Districts responding to fiscal pressures may have more incentive to expand relatively higher revenue generating programs at the expense of lucrative programs that have greater student interest. At present, it is difficult to assess the long-term effects of performance-based funding on vocational programs. With the exception of Missouri, which expanded funding incentives to include all schools in 1994, there is little evidence to either recommend or reject these systems.
III. Reflections on State Funding Practices for Vocational Education

Results from the statewide survey of vocational funding practices suggest that states are using a variety of formulas and funding levels to finance vocational education. While these systems often contain unique adjustment and distribution guidelines tailored to address state-specific issues, the overall operation and purpose of these systems are remarkably similar. This section distills findings from the literature review and national survey of states to identify funding strategies and approaches that may be applicable to Ohio. Suggestions for improving state data collection and interpretation are also offered to assist the state in better monitoring its investment in vocational education.

A Cautionary Note

Existing state funding systems often operate on historical precedent, with funding strategies and amounts premised on preceding year allocations. In practice, annual vocational budgeting in most states is a data-driven exercise: local educators routinely submit summary counts of student participants and/or district cost data to state staffers, who aggregate data, often into complex spreadsheets, to produce district allocations that remain nearly constant over time.

There are often good reasons for maintaining stable district allocations. Since teacher salaries comprise a majority of local costs for vocational education, large, unanticipated changes in annual funding can jeopardize jobs and, by extension, the quality and type of vocational offerings. Other fixed costs, which include instructional supplies and building and equipment maintenance, also require relatively stable funding streams. Survey results suggest that states that have instituted reforms have generally done so only when coerced by legal mandate or legislative directive.

States undertaking systematic vocational funding reform have generally approached the exercise with considerable care. To ensure that resource shifts do not overly burden local agencies, states adopting new funding formulas have often allocated additional funding to the resource pool or adopted funding circuit-breakers, which cap annual changes in district funding, to protect local agencies from large resource deviations. The need for consistency suggests that Ohio, in contemplating changes to its vocational funding formula, proceed at an equally careful, measured pace to ensure that local agencies are not unduly penalized by legislative mandates outside their control. Indeed, Ohio’s H.B. 282 contained language guaranteeing that vocational schools would receive no less funding under the new formulas than they received prior to the weighted funding approach.

Before proceeding to institutionalize changes, it may be prudent for representatives of the Legislative Office of Education Oversight, Ohio Department of Education, and legislative and executive branches of government to meet and agree upon the goals for vocational education in Ohio. Specifically, what are the
purposes of vocational education in the state? What types of vocational programs and instructional settings should be encouraged and to what extent? Is the state willing to fund traditional vocational programs that may be low paying and relatively expensive to equip, or is the desire to redirect instruction into other fields that may require less equipment and offer graduates higher paying jobs? How much flexibility should local agencies have in allocating resources across programs? Is there a threshold level of funding that local agencies must exceed if they are to continue to offer vocational programs, and if so, what is it?

Identifying the Costs of Vocational Education

The literature provides little guidance in documenting the costs of providing vocational education, in part because there are a continuum of approaches to offering vocational education, and in part because so little data exist at the state and national levels. There is general consensus, however, that vocational education is more expensive to provide than other forms of instruction. Estimates of the actual cost of vocational programs vary, with some researchers suggesting that instructional costs may be as high as two to three times those of academic programs.

A review of state funding approaches suggests that most states directly or indirectly provide supplemental funding for vocational education, with funding levels varying widely across states. Twenty percent of states do not budget any supplemental funding to vocational education, meaning that local vocational services must be either supported at the same foundation funding level as other programs or supplemented with federal and/or local funding. In the remaining states, supplemental state aid for vocational education exceeds general education spending by as little as 5 percent to as much as 260 percent for certain categories of expenditures. While a variety of factors can affect the final allocation a local district receives, on average, most states fund vocational education between 20 percent and 40 percent higher than other forms of instruction.

Compared to unadjusted allocations in other states, Ohio earmarks a relatively large amount for vocational instruction. On average, students participating in traditional vocational education programs in Ohio qualify for an additional 0.60 weight in the state’s funding formula, an amount relatively higher than that used in other states. While the weight of 0.3 used for family studies and intervention programs is closer to that used in other states, it is not clear that the type of instruction provided in these programs parallels that of traditional vocational programs. Specifically, it appears that instruction in these latter programs focuses on broad career themes, such as personal development or employability skills, which may be relatively cheaper to address than other forms of vocational instruction. Indeed, conversations with ODE staff suggest that the cost of supplying and equipping these two categories of funding may be significantly less than more traditional vocational instruction.

This neither implies that the state is spending too much on vocational education, nor that vocational programs are receiving sufficient funding to provide an adequate education for students. It may be, for
example, that graduates of Ohio schools are more successful in their postsecondary education or employment because of the level of state investment in vocational education. Alternatively, the average cost criteria used to allocate vocational resources may underfund as often as it overfunds vocational programs. Given that LEAs must provide students with access to at least 12 different vocational course offerings, school districts in Ohio may also face higher fixed costs in providing a minimum level of vocational services.

The challenge for Ohio, then, is clarifying what constitutes a reasonable level of spending given the purposes of vocational education and the scale of the vocational enterprise in the state. To assess the return on state investment accurately, Ohio will need to collect and analyze state data to quantify the costs and benefits of vocational education.

**Cost of Vocational Inputs**

Given that supplemental funding for vocational education in Ohio is allocated per vocational ADM, based on the average cost of all vocational programs within an instructional category, it is possible that some districts will not receive sufficient funding to provide students with adequate vocational instruction. As documented earlier, there appears to be considerable variation in teacher salaries across districts, meaning that the cost of staffing vocational classrooms may be relatively higher for some local agencies. Class sizes and equipment costs may also vary across institutions, meaning that some districts may face different costs in providing the required 12 vocational course offerings.

If there is a minimum cost threshold associated with providing certain types of vocational instruction, it may be that, on average, the ADM of smaller districts is not sufficient to ensure a minimum level of vocational instructional quality. One means of adjusting for smaller school size would be to include explicitly an adjustment factor in the vocational formula, as Texas has done, to ensure that small and mid-sized districts are not penalized for their comparatively lower ADM. An alternative approach would be to adopt statewide quality standards and procedures for state remuneration, as in Oklahoma, to ensure that all agencies provide a comparable level of vocational service.

The site of vocational instruction—which may take place in stand-alone high schools, comprehensive high schools, or across a number of schools in a compact—may also affect the cost of providing vocational services. For example, joint vocational schools, by virtue of their scale of construction, teacher expertise, student skill level, or concentration of students, may be able to accommodate relatively larger numbers of students in classes than comprehensive high schools, leading to instructional cost savings. Conversely, comprehensive high schools may realize substantial savings in transportation costs, since students may attend all courses on site.
Since vocational education programs in Ohio are funded based on a constant formula weight, the state may also wish to assess whether the type of vocational program offered affects instructional costs. A number of states, including Idaho, Indiana, Michigan, and Oklahoma have developed vocational program weightings that differentially fund vocational courses, with more expensive programs allocated additional funding. These approaches are similar to those used in Ohio prior to adoption of its new vocational funding formula. While linking program funding weights to program costs can encourage local agencies to offer higher cost vocational services than they might otherwise support, as well as enable the state to exert greater pressure in determining the type of instruction that occurs at the local level, care must be taken that districts do not “game” the system for their own benefit. For instance, the quality or scope of vocational programs could suffer if school districts attempted to maximize funding by funneling students into relatively high-cost vocational programs.

**Using Data for Policymaking Purposes**

Ohio presently maintains an education management information system that is relatively advanced in comparison to other states. This confers a considerable advantage to the state, both because additional data can be collected at little cost, and because local educators are already accustomed to reporting student and institutional data. It should be relatively straightforward to use data available in the Ohio Education Management Information System (EMIS) to begin to address some of the issues raised in this report. For example, the Staff Data Elements component of EMIS contains fairly specific data on a number of staff characteristics, including level of educational attainment, years of experience, contracted salary amount, instructional grade level, institutional setting, and subject area of instruction.

It is not clear, however, that EMIS contains all the information needed to allow the state to estimate or track the factors accurately that contribute to the higher cost of vocational education. It may be prudent, therefore, for the state to review and update its data elements systematically to enable the state to quantify the costs of providing vocational education in relation to other forms of instruction. This is not to suggest that Ohio should seek to classify and collect detailed cost data on a large number of elements across a number of academic and vocational program areas. Rather, the state could instead confine its efforts to a small number of data elements, such as district expenditures for staffing and equipping vocational classrooms, which likely constitute a large proportion of local costs. Collecting this data may require modifying current school and district data collection forms or simply changing the manner in which existing data is analyzed and reported.

At a minimum, efforts should be made to collect data that will allow the state to quantify the cost of providing vocational education in relation to other types of instruction, as well as across different types of program categories, district characteristics, and institutional settings. Based on the rulings of the Ohio Supreme Court, it is clear that the state is in need of accurate data that will prove to the court that it has met the “thorough and efficient” standard for funding as set forth in the Ohio Constitution. If desired, the state
could also incorporate annual data in establishing state funding levels and in calculating district resource eligibilities.

There can be a tradeoff, however, in complicating vocational funding formulas. Although adding numerous adjustments to the state vocational formulas could help control for the effects of a variety of factors, unnecessarily complicating the formula could actually reduce efficiency if locals are unable to collect accurate data for all elements. Ideally, the state will configure its data collection system to allow it to calculate the relative cost of vocational education reliably and defensibly in relation to other types of instruction, and to ensure that district calculations are sufficient to provide all students with access to an adequate level of vocational services.
Summary

A review of the vocational cost literature and findings from a national survey of state funding approaches suggest that the cost of providing vocational education can be higher than other forms of instruction. To supplement vocational funding, states have developed a number of different mechanisms for allocating state resources, with the majority employing some form of unit-based or weighted per-pupil formula. Analysis of state funding formulas and levels of support for vocational education indicate that states assign different priority to vocational instruction, with some allocating no additional resources and others allocating as much as 60 percent above base foundation levels established for all students.

Compared to some states, Ohio appears to concentrate a greater amount of resources on vocational students. This outcome is due to a combination of a relatively high average base funding level for general education and a relatively large weight for vocational FTE students. Since little is known about the type of costs that locals face when providing vocational services, it is difficult to determine, based on the information available, whether state allocations are appropriate for the scale of the vocational enterprise. Moreover, although Ohio’s funding formula adjusts for local tax effort, it is not clear how levels of student participation, the type and scope of instruction, and the facilities in which instruction is offered affect the cost of local vocational programs.

If the fixed costs of staffing, supplying, and equipping a vocational instructional program encompassing 12 vocational course offerings are on average higher than the weighted reimbursement adopted by the state, then it is possible the current state formula is failing to provide local agencies adequately with sufficient resources to educate their student populations. Since Ohio appears to be concentrating a relatively large amount of funding on vocational education relative to other states, it could also be that the state is, on average, providing sufficient funding to support vocational programs. It may still be possible, however, that smaller districts—those with below average rates of vocational student participation, or those offering a relatively greater proportion of high-cost vocational programs—may face particular challenges in maintaining comprehensive vocational delivery systems. Finally, it is possible that data on vocational expenditures in Ohio overstate the actual cost of providing vocational coursework, meaning that the state is currently allocating more resources than are needed to support the desired level of vocational services.

Ohio presently has a sophisticated education management information system that contains a great deal of data on district expenditures for vocational and other types of instruction. It may be, however, that this system does not possess sufficient data elements to enable state administrators to quantify the cost accurately of providing vocational education or to control for district characteristics that may affect delivery. It may also be that the state must undertake a more systematic review of data that are presently collected. While collection of more detailed information on an annual basis could help the state revise the
weighting and operation of its vocational funding formula, the state must trade off the burden and expense associated with building such a system against the potential gains more accurate data will provide.

Given the Ohio Supreme Court’s recent decision in DeRolph II, it is clear that the state will need to provide persuasive evidence that its vocational funding formula provides sufficient resources to ensure that all students in Ohio are provided with an adequate education. Based on a review of statewide funding practices for vocational education, it appears that the state is presently providing a comparatively large contribution in support of vocational education, one that may be sufficient to provide all students with access to a quality education. There are, however, a number of mitigating factors, due to the state’s unique organization and delivery of vocational education, which may affect the cost of offering instruction in the state. To allay judicial and legislative concerns, the state may wish to consider compiling and analyzing more detailed data on the relative cost of providing vocational education statewide, in order to control for differing institutional characteristics and delivery systems.
References


Goishi, F.H. (1970). The Relationship of Enrollment Size of Area Vocational-Technical Schools in Missouri to Per Student Expenditures for Vocational Education. Ann Arbor, MI: University Microfilms, Inc. (ERIC ED042056)


<table>
<thead>
<tr>
<th>State</th>
<th>Total Funds Appropriated for Vocational Education (FY 2000–01 unless otherwise noted)</th>
<th>Funding per FTE Vocational and Academic Student</th>
<th>Eligible Vocational Schools</th>
<th>Financing VocEd</th>
</tr>
</thead>
<tbody>
<tr>
<td>Arizona</td>
<td>$11,085,600 (FY 1998)</td>
<td></td>
<td>Comprehensive High Schools with State Approved Career-Tech/ Vocational Programs</td>
<td>$9,251,300 (90% allocated student count component, 10% placement component) was available for the FY 1998. Each vocational program is assigned a weight factor. This amounted to an allotment of $252.04 per student for a program with a weight of 1.0. An additional $1,834,300 was available to the state for administration costs.</td>
</tr>
<tr>
<td>California</td>
<td>$337,000,000</td>
<td>Voc: $1,369*</td>
<td>Regional Occupation Centers/Programs</td>
<td>Funding is distributed to 82 Regional Occupation Centers/Programs based on ADA with adjustments for center size and revenue limits. ROCPs are primarily state-funded organizations that work in collaboration with schools, districts, and support service agencies (e.g., Employment Development Department, Job Training Partnership Act, etc.) to provide technical education to high school and adult students.</td>
</tr>
<tr>
<td>Connecticut</td>
<td>$115,000,000</td>
<td></td>
<td>17 Vocational Technical High Schools</td>
<td>75% of funding is allocated based on student enrollment and number of programs, and 25% based on square footage compared to average among 17 Vocational Technical Schools.</td>
</tr>
<tr>
<td>Hawaii</td>
<td>$20,000 per secondary school + $2,000,000 allocated by FTE counts</td>
<td></td>
<td>Comprehensive High Schools with State Approved Career-Tech/ Vocational Programs</td>
<td>Each secondary school receives a base amount of $20,000 regardless of enrollment. The remaining $2,000,000 is allocated based on grades 9–12 FTE vocational student enrollment.</td>
</tr>
<tr>
<td>Maryland</td>
<td>$3,900,000</td>
<td></td>
<td>Comprehensive High Schools with State Approved Career-Tech/ Vocational Programs</td>
<td>Allocated based on FTE vocational enrollment at district level, and spending is locally controlled.</td>
</tr>
<tr>
<td>State</td>
<td>Total Funds Appropriated for Vocational Education (FY 2000-01 unless otherwise noted)</td>
<td>Funding per FTE Vocational and Academic Student</td>
<td>Eligible Vocational Schools</td>
<td>Financing VocEd</td>
</tr>
<tr>
<td>--------------</td>
<td>--------------------------------------------------------------------------------------</td>
<td>-----------------------------------------------</td>
<td>-----------------------------</td>
<td>-----------------</td>
</tr>
<tr>
<td>Massachusetts</td>
<td>Not Available</td>
<td>Voc: $8,549</td>
<td>Comprehensive High Schools with State Approved Career-Tech/Vocational Programs</td>
<td>Complex state formula considering at least 19 factors (salaries, benefits, professional development, equipment, supplies) are calculated for 12 different student categories, of which vocational education is one. Funding amounts are multiplied by a wage adjustment factor calculated for each district.</td>
</tr>
<tr>
<td>Minnesota</td>
<td>$2,225,000</td>
<td></td>
<td>Comprehensive High Schools with State Approved Career-Tech/Vocational Programs</td>
<td>Per pupil aid is equivalent to the lesser of: (1) $73 multiplied by the number of Career Tech students in grades 10-12, or (2) 25% of instructional expenditures for salaries of vocational teachers, necessary instructor travel, curriculum development, supplies, and non-school district-contracted services. However, districts are guaranteed the lesser of 95% of the aid they received the previous year or 40% of the expenditures of the current year. Then, depending on which formula yields the greater product, school districts are entitled to the greater amount.</td>
</tr>
<tr>
<td>Montana</td>
<td>$715,000</td>
<td></td>
<td>Comprehensive High Schools with State Approved Career-Tech/Vocational Programs</td>
<td>Funding is based on a per pupil allocation: the Average Number Belonging (ANB) for secondary vocational programs, and each program must report its ANB separately. Each program has a different factor, determined by the superintendent of public instruction, which is then multiplied by the state-aid available per ANB enrolled in the program. Vocational education students can be counted more than once across vocational programs.</td>
</tr>
</tbody>
</table>
### Matrix 1—State Funding Based on Student Participation—Continued

<table>
<thead>
<tr>
<th>State</th>
<th>Total Funds Appropriated for Vocational Education (FY 2000–01 unless otherwise noted)</th>
<th>Funding per FTE Vocational and Academic Student</th>
<th>Eligible Vocational Schools</th>
<th>Financing VocEd</th>
</tr>
</thead>
<tbody>
<tr>
<td>New York</td>
<td>$457,600,000</td>
<td></td>
<td>BOCES</td>
<td>Funding is allocated to area vocational schools called BOCES (Board of Cooperative Educational Services). Services aid in the amount of $376.4 million allocated based on the greater amount between (1) a millage ratio based on district tax rate, or (2) an aid ratio based on the number of students participating in BOCES. Plus $49.9 million in additional funding for administration and facilities.</td>
</tr>
<tr>
<td>North Carolina</td>
<td>$15,274,205</td>
<td>Voc: (after LEA base) $25.95</td>
<td>Comprehensive High Schools and Area Technical Schools</td>
<td>Each LEA is eligible for a base amount of $10,000. Remaining funds are distributed based on allotted ADM in grades 7–12. The per pupil amount is not a set value; it is determined by the balance of remaining funds.</td>
</tr>
<tr>
<td>Rhode Island</td>
<td></td>
<td>Voc: $500</td>
<td>Career Tech Centers</td>
<td>Awarded for each student enrolled in a local career and technical center.</td>
</tr>
<tr>
<td>Utah</td>
<td>$38,881,153</td>
<td>Comprehensive High Schools with State Approved Career-Tech/Vocational Programs &amp; ATCs/ATCSRs</td>
<td></td>
<td>All districts receive $2,006 per FTE student. In addition, districts are eligible for additional funding for vocational education programs. These funds are allocated based on performance measures, skill certification performance, participation in leadership organizations, and participation in summer agricultural programs. Districts must allocate these funds directly to the program that generated the extra funding. The state’s five Applied Technology Centers (ATCs) and three Applied Technology Center Service Regions (ATCSRs) are funded as separate line items in the budget.</td>
</tr>
<tr>
<td>State</td>
<td>Total Funds Appropriated for Vocational Education (FY 2000-01 unless otherwise noted)</td>
<td>Funding per FTE Vocational and Academic Student</td>
<td>Eligible Vocational Schools</td>
<td>Financing VocEd</td>
</tr>
<tr>
<td>--------------</td>
<td>----------------------------------------------------------------------------------------</td>
<td>------------------------------------------------</td>
<td>------------------------------------------------------------------</td>
<td>------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------</td>
</tr>
<tr>
<td>Vermont</td>
<td>$2,254,628 (FY 1998)</td>
<td>Regional Technical Center</td>
<td>Each technical center shall receive a grant per pupil. This grant is calculated by taking the total funds available (in FY 1998 that was $2,254,628), and dividing that by the total number of FTE students enrolled in all regional technical centers. There are also reimbursements available for exploratory course costs, transportation ($1.50 per mile traveled), equipment replacement, salary assistance, overhead costs, and incentive grants.</td>
<td></td>
</tr>
<tr>
<td>Washington</td>
<td>$23,306,498 (FY 1999-2000)</td>
<td>Voc: $4,316 Non-voc: $3,653</td>
<td>Comprehensive High Schools with State Approved Career-Tech/Vocational Programs A staffing enhancement is awarded if districts can demonstrate a ratio of 1:19.5 or less, and spend no more than 10% of vocational expenditures on indirect costs (e.g., repayment of debts, Principal’s office costs, guidance and counseling, health services, pupil management and safety, utilities, facilities management). The average vocational enhancement in 1997–98 was $663.40, whereas the average expenditures per student above and beyond basic education was $758.</td>
<td></td>
</tr>
<tr>
<td>West Virginia</td>
<td>$2,146,000</td>
<td>LEA</td>
<td>Funding is allocated to LEAs based on a FTE membership calculation. This is in addition to the general $6,806.27 state appropriation per student.</td>
<td></td>
</tr>
</tbody>
</table>

*Based on FY 2000–01 data and 1997–98 ROCP enrollment data

NOTE: Funding amounts are based on information supplied by state representatives and/or review of state legislative documents. Dollar amounts may not include all vocational expenditures within a state, and as such, should be viewed as estimates of overall state spending.
## Matrix 2—State Funding Based on Instructional Units

<table>
<thead>
<tr>
<th>State</th>
<th>Teacher: Student Ratio for Vocational ADM Counts</th>
<th>Financing VocEd</th>
</tr>
</thead>
<tbody>
<tr>
<td>Alabama</td>
<td>1:18</td>
<td>Foundation program units are based on teacher units, with one instructor unit funded per 18 pupils in grades 9–12. Grade divisors for vocational students include an adjustment to reflect increased programmatic costs. The adjustment for vocational education reflects an added 16.5% to the overall ADM, and then vocational pupils ADM is weighted 2.0 in grades 9–12; meaning that vocational enrollments are inflated (voc ADM x 1.165 x 2.0) prior to dividing by the foundation instructional unit (18). Principals in Area Vocational Centers shall be funded at an additional .33 weight for high schools and Area Vocational Schools alike. Units are then converted to dollar amounts using a state salary matrix.</td>
</tr>
<tr>
<td>Delaware</td>
<td>1:20 plus (27,000 pupil minutes/week x 0.5)</td>
<td>Vocational education is funded in three ways. First, there is funding for material which is determined by the vocational program (80% of which must be reallocated locally to vocational education). Other funding is provided to pay for teacher salaries, and to equalize teachers’ salaries. Both of these adjustments are calculated in the same way. The 1:20 instructional unit (the same for non-vocational pupils) is inflated. Additional instructional units are calculated per 27,000 pupil minutes/week (or major fraction of), multiplied by 0.5, and then added to the non-vocational equivalent instructional units. For example, for 100 vocational students, a base of 5 instructional units are calculated. Then, an additional 2 units (= 54,000 pupil minutes/week) are multiplied by 0.5 and added to the original 5 units, totaling 6 instructional units.</td>
</tr>
<tr>
<td>Kentucky</td>
<td>Actual Teacher Count</td>
<td>Funds allocated on a per teacher basis: 1-5 teachers=$21,000 per teacher, 6-9 teachers=$16,000 per teacher, and 10 or more=$10,000 per teacher. These funds are not necessarily for teachers’ salaries.</td>
</tr>
<tr>
<td>Mississippi</td>
<td>1.5:27</td>
<td>The state allocates funds based on average daily attendance per teacher unit. A teacher unit is equal to 1 teacher per 27 students ADA. An additional 1/2 teacher unit is added for each approved vocational program. Districts are allotted $15,000 plus $50 for each teacher unit in excess of 50 units with a cap of $25,000.</td>
</tr>
<tr>
<td>Tennessee</td>
<td>1:20</td>
<td>Using average daily attendance, the state funds salaries for one non-vocational teacher per 26 non-vocational, and one vocational teacher per 20 vocational students. Also, student supplies and equipment are funded differently. Supplies and equipment are funded at $27 and $20 per non-vocational student, and $101 and $62 per vocational student, respectively. School districts have local control over how the funds are spent.</td>
</tr>
<tr>
<td>Virginia</td>
<td>1:15 to 1:21</td>
<td>Funding teacher units; each program has to establish teacher/student ratio ranging from 1:15 to 1:21. Teacher salaries are funded depending on ADM, and adjustments are made for cost of living and benefits (FY 2002 base $37,362/yr + 15% benefits + 10% added cost of living). Virginia also has a cost reimbursement element to their funding where school districts can be reimbursed for the cost of equipment, regional program staffing, and other indirect costs. Incentive-based program funds are also awarded targeting mostly at-risk youth.</td>
</tr>
</tbody>
</table>
Matrix 3—State Funding Based on Cost Reimbursement

<table>
<thead>
<tr>
<th>State</th>
<th>Total Funds Appropriated for Vocational Education (FY 2000–01 unless otherwise noted)</th>
<th>Eligible Costs</th>
<th>Financing VocEd</th>
</tr>
</thead>
<tbody>
<tr>
<td>Colorado</td>
<td>$17,800,000</td>
<td>Instructional Personnel, Supplies, Equipment, and Instructional Services provided by Cooperating Agencies or Institutions</td>
<td>Added Cost Basis: If vocational education costs exceed per-pupil funding, state will cover 80% of the first $1,250 above per pupil cost, and 50% thereafter. Per-pupil funding = $5,175.</td>
</tr>
<tr>
<td>Idaho</td>
<td>$5,591,440</td>
<td>Equipment, Materials and Supplies, Extended Contracts, Professional Development, Instructor Reimbursement, Miscellaneous Contractual Costs</td>
<td>Funding is allocated based on an added cost formula, but each program area has a funding cap. For example, Machining Technologist programs are capped at $15,390 per unit and Marketing Education is capped at $5,130 per unit. Professional Technical schools are eligible for both the program funds, and additional aid calculated at an added 0.30 ADA.</td>
</tr>
<tr>
<td>Iowa</td>
<td>$3,800,000</td>
<td>Teacher Salary, Benefits, and Travel</td>
<td>Secondary districts submit reimbursement claims reports detailing their expenses, enrollment, and completion rates. Then, funds are allocated proportionately based on actual expenditures. In FY 2000–01, it is estimated that 7.6% of actual vocational costs will be reimbursed by the state.</td>
</tr>
<tr>
<td>Maine</td>
<td>Not available</td>
<td>All Actual Costs</td>
<td>All vocational costs not covered by the state foundation formula are reimbursed on a 2-year lag cycle. Program cost reimbursement is calculated based on a formula controlling for district valuation and student enrollment, and is limited by funds available.</td>
</tr>
<tr>
<td>Michigan</td>
<td>$31,027,600 (FY 1999–2000)</td>
<td>Counseling, Curriculum Development, Technology and Equipment, Supplies and Materials, Work-Based Learning Expenses, Evaluation, Career Placement Services, Student Leadership Organizations, and up to 10% for Planning and Coordination</td>
<td>Added Cost Basis: If vocational education costs exceed per pupil funding, state will reimburse up to 75% of the added cost.</td>
</tr>
</tbody>
</table>
### Matrix 3—State Funding Based on Cost Reimbursement—Continued

<table>
<thead>
<tr>
<th>State</th>
<th>Total Funds Appropriated for Vocational Education (FY 2000–01 unless otherwise noted)</th>
<th>Eligible Costs</th>
<th>Financing VocEd</th>
</tr>
</thead>
<tbody>
<tr>
<td>North Dakota</td>
<td>Not available</td>
<td>Salaries, Extended Contracts, Travel, Area Voc. Tech. Centers (all costs approved)</td>
<td>26% reimbursement on instructional salaries and extended contracts, 31% reimbursement on approved travel, 39% of all approved costs at Area Vocational and Technology Centers. No reimbursement on equipment.</td>
</tr>
<tr>
<td>Oklahoma</td>
<td>$125,023,744</td>
<td>For Comprehensive High Schools: Program Specific Costs and Teacher Salaries. For Technology Centers: Direct Instruction Costs per Approved Program, Indirect Costs, and Transportation</td>
<td>In comprehensive high schools vocational teachers are funded at $200 per contract per month to pay for professional development, reporting, and student organizations. In addition, program assistance grants are distributed at $560 to $8,280 per program depending on the program. This money is intended to cover the cost of equipment, supplies, and staff development. Technology centers are funded separately from comprehensive high school programs at an estimated annual cost of $118,359 per FTE program.</td>
</tr>
<tr>
<td>Pennsylvania</td>
<td>Vocational Education $53,069,000, Vocational Equipment $10,000,000</td>
<td>Instructional (Salaries, Benefits, and Materials), Pupil Personnel Services (Counseling), Staff Support Services (including Staff and Curriculum Development), Audit Costs, Child Care, 6% Operational Cost</td>
<td>Local education agencies apply for reimbursement on eligible expenses in six functions: Instruction; Pupil Personnel Services; State Support Services; Business Support Services; Community Services; and Other Financing Uses.</td>
</tr>
</tbody>
</table>

**NOTE:** Funding amounts are based on information supplied by state representatives and/or review of state legislative documents. Dollar amounts may not include all vocational expenditures within a state, and as such, should be viewed as estimates of overall state spending.
## Matrix 4—State Funding Based on Student Weights

<table>
<thead>
<tr>
<th>State</th>
<th>Base Per 1.0 Weight Allocation (FY 2000–01)</th>
<th>Weight or Added Weight Factor per Vocational FTE &amp; Unadjusted $/FTE</th>
<th>Formula Allocations for Vocational Students</th>
</tr>
</thead>
<tbody>
<tr>
<td>Alaska</td>
<td>$3,940</td>
<td>Weight = 1.20&lt;br&gt;Unadjusted = $4,728</td>
<td>Formula: ADM vocational x district cost factor x 1.20 x $3,940&lt;br&gt;Adjustment: ADM is adjusted for school size; local contribution based on tax levy.</td>
</tr>
<tr>
<td>Florida</td>
<td>$3,417</td>
<td>Weight = 1.211&lt;br&gt;Unadjusted = $4,138</td>
<td>Formula: FTE x adjustment factor x 1.211 x $3,417&lt;br&gt;Adjustment: FTE is adjusted for District Cost Differentials, sparcity indices, hold harmless, and a number of other factors.</td>
</tr>
<tr>
<td>Georgia</td>
<td>$2,243</td>
<td>Weight = 1.208&lt;br&gt;Unadjusted = $2,696</td>
<td>Formula: vocational FTE x 1.208 x $2,243&lt;br&gt;Adjustment: Teacher experience and training. Funding is intended to pay at least the beginning salaries of all teachers needed to provide essential classroom instruction.</td>
</tr>
<tr>
<td>Illinois</td>
<td>$4,425</td>
<td>Add-on = 0.30 to 0.50&lt;br&gt;Unadjusted = $5,753 to $6,638</td>
<td>Formula: (FTE vocational +(FTE vocational x add-on weights)) x $4,425&lt;br&gt;Adjustments: Available local resources: an added weight of 0.3 per credit is allowed for shared courses/course instructors, double periods, and a corporate campus. A weight of 0.5 is added for state designated facilities and administrative support.</td>
</tr>
<tr>
<td>Indiana</td>
<td>$4,267</td>
<td>Add-on= 0.38 Agriculture (1/2 day) 0.33 Distributive Ed 0.14 Consumer Homemaking 0.33 Occupational Home EC. 0.33 Business Ed 0.48 Trade and Industry 1/2 day 0.33 Trade/Industry (2 periods) 0.28 Cooperative Education</td>
<td>Formula: (FTE vocational +(FTE vocational x add-on weights)) x $4,267&lt;br&gt;Adjustments: At-risk index; state monetary adjustment based on intermediate step funding level.</td>
</tr>
<tr>
<td>Kansas</td>
<td>$3,820</td>
<td>Add-on = 0.50&lt;br&gt;Unadjusted = $5,730</td>
<td>Formula: adjusted district enrollment weight + (vocational FTE x 0.50) x $3,820&lt;br&gt;Adjustments: Low enrollment weight, transportation weight, at-risk pupils weight, school facilities weight, ancillary school facilities weight.</td>
</tr>
<tr>
<td>Louisiana</td>
<td>$3,020</td>
<td>Add-on = 0.05&lt;br&gt;Unadjusted = $3,171</td>
<td>Formula: (1.0 +(.05 x vocational units)) x local equalization factor x $3,020&lt;br&gt;Adjustments: State pays 65% of local eligibility</td>
</tr>
<tr>
<td>Ohio</td>
<td>$4,294</td>
<td>Add-on = 0.60 for regular programs&lt;br&gt;Unadjusted = $6,870</td>
<td>Formula: CODBF x ADM x state percent share x .6 x $4,294&lt;br&gt;Adjustments: Local effort; Cost of Doing Business Factor (CODBF)</td>
</tr>
</tbody>
</table>
### Matrix 4—State Funding Based on Student Weights—Continued

<table>
<thead>
<tr>
<th>State</th>
<th>Base Per 1.0 Weight Allocation (FY 2000–01)</th>
<th>Weight or Added Weight Factor per Vocational FTE &amp; Unadjusted $/FTE</th>
<th>Formula Allocations for Vocational Students</th>
</tr>
</thead>
<tbody>
<tr>
<td>South Carolina</td>
<td>$2,012</td>
<td>Weight = 1.29 Unadjusted = $2,595</td>
<td>Formula: FTE vocational x 1.29 x $2,012 Adjustment: Index of tax-paying ability to determine local share. State pays 70% of foundation program. Academic courses weighted 1.25.</td>
</tr>
<tr>
<td>Texas</td>
<td>$2,537</td>
<td>Weight = 1.37 Unadjusted = $3,476</td>
<td>Formula: FTE vocational x 1.37 x $2,537 adjusted for local characteristics Adjustments: Cost of Education; Small and Mid-Sized Districts; Sparsity; Adjusted property value for districts not offering all grade levels.</td>
</tr>
</tbody>
</table>
### Matrix 5—State Funding Based on Performance Incentives

<table>
<thead>
<tr>
<th>State</th>
<th>Resource Allocations</th>
<th>Description of State Formula</th>
</tr>
</thead>
</table>
| Indiana | $550 per pupil for Certificates of Achievement  
$1,000 per pupil for more than moderate demand program  
$700 per pupil for moderate demand program  
$300 per pupil for less than moderate demand program  
$230 per pupil for all other programs | Beginning in the 2002–03 school year, local agencies will receive funding per pupil based on the number of students who receive certificates of achievement or who are enrolled in programs that address identified areas of labor market need. The total grant allocation will equal the sum of the products of each per-pupil allocation formula. |
| Missouri | **Base Allocation:**  
Area Vocational schools: based on teacher salaries  
Comprehensive HS: $300/contact month/full-time vocational teacher or $35/class period/teacher  
**Incentive Funding:**  
Effectiveness Index & Incentive Funding  
Equipment Reimbursement: Enhancement Grant and Annual Funding | The effectiveness index (EI) scores the relative success of a program in placing students in jobs as well as the responsiveness of a program to labor supply and demand factors. Based on funds available, the state calculates a maximum allotment per contact hour (or hour of class time) per program. Then, to calculate the actual allocation per program, the program’s EI score is essentially multiplied by the dollars per contact hour allotted to equal an incentive grant. The incentive formula allows for an additional 10% incentive to schools enrolling students in target groups (disadvantaged, disabled, and nontraditional students).  
State funding is also available for equipment reimbursement at 75% for enhancement grants and 50% for annual costs, with both levels of funding contingent on the amount of state-appropriated funds for each category. |