DOCUMENT RESUME

ED 315 535 CE 053 774

AUTHOR	Hoachlander, E. Gareth; And Others
TITLE	Performance-Based Policies Options for Postsecondary Vocational Education: A Feasibility Study.
INSTITUTION	MPR Associates, Berkeley, CA.
SPONS AGENCY	National Assessment of Vocational Education (ED), Washington, DC.
PUB DATE	Mar 89
CONTRACT	300-87-0011
NOTE	141p.; For related documents, see ED 283 020, ED 290 881, ED 299 412, ED 297 150, CE 053 568, CE 053 752-773, and CE 053 783-797.
PUB TYPE	Reports - Evaluative/Feasibility (142)
EDRS PRICE	MF01/PC06 Plus Postage.
DESCRIPTORS	Access to Education; *Accountability; *Consumer Economics; Disclosure; Educational Demand; Educational Economics; *Educational Finance; Educational Policy; Educational Supply; Enrollment Influences; Federal State Relationship; *Outcomes of Education; Postsecondary Education; *Resource Allocation; State Federal Aid; Student Recruitment; Two Year Colleges; *Vocational Education
IDENTIFIERS	Arizona; *Carl D Perkins Vocational Education Act 1984; Performance Indicators

ABSTRACT

This document explores how well the four conditions necessary for implementation of performance-based policies in vocational education can be met in postsecondary education. The four conditions require that: (1) it must be possible to specify the desired outcomes precisely and unambiguously; (2) these outcomes must be easily, accurately, and fairly measured; (3) performance must be tied directly to funding so that success is rewarded or failure penalized; and (4) information on outcomes must be disclosed to consumers and policy makers to improve choices and decision making. The first of the report's five chapters explains why performance-based policy seems desirable at this time. The second chapter addresses issues surrounding definition and measurement of performance in postsecondary vocational education, covering labor market outcomes, learning outcomes, and access to education outcomes. Chapter 3 concerns how performance can be linked to funding, discussing performance contracting, performance-based funds allocation formulas, and performance-based student financial aid, and offering guidelines for federal vocational education policy. Chapter 4 explains information disclosure for potential consumers of postsecondary education, including the benefits and costs of disclosing more information, the necessary conditions for effective disclosure, and Arizona's experience with disclosure. Chapter 5 considers how to introduce performance funding into the Carl D. Perkins Vocational Education Act and discusses several objections that proponents of the changes are likely to confront. (CML)

Draft:
Subject to Final Editing

PERFORMANCE-BASED POLICIES OPTIONS FOR POSTSEONDARY VOCATIONAL EDUCATION: A FEASIBILITY STUDY

by

E. Gareth Hoachlander
Susan P. Choy
Cynthia L. Brown

March 1989

MPR Associates, Inc.
1995 University Avenue, Suite 225
Berkeley, California 94704
(415) 849-4942

This report has been prepared for the National Assessment of Vocational Education under Contract No. 300-87-0011 from the U.S. Department of Education. The views expressed in this report are the authors' and do not necessarily reflect the opinions of the National Assessment of Vocational Education or the U.S. Department of Education.

ACKNOWLEDGEMENTS

Many people generously contributed time and information to make this study possible. In Arizona, California, Colorado, Minnesota, Oklahoma, Tennessee, and Vermont, state and local administrators of vocational education and employment training programs graciously welcomed us and shared with us their experiences in developing and implementing new approaches to performance-based policies. We learned much from them and have borrowed shamelessly from their ideas and practices.

John Wirt, Robert Myer, Lana Muraskin, and Dorothy Schuler of the National Assessment of Vocational Education read carefully early drafts of the study and helped us to clarify our thinking and refine out ideas. Steven Barro also contributed valuable comments and advice.

We owe David Goodwin of the National Assessment of Vocational Education a special thanks. As our Project Officer, he participated thoughtfully from the study's initial design through the completion of the final report. Always ready with useful feedback and suggestions, he nevertheless gave us considerable freedom to craft and direct the study as we saw fit.

The contributions of these individuals have greatly strengthened our report. We, of course, are solely responsible for what we have reported and any errors or omissions.

E. Gareth Hoachlander
Susan P. Choy
Cynthia L. Brown

Berkeley, California
March 1989

TABLE OF CONTENTS

CHAPTER ONE: INTRODUCTION

During the next twenty years, three major forces will strongly affect the American labor market: changing demographics, international competition, and new technology. The workforce will be steadily aging, as the baby boom of the 1950s and 1960s enters middle age and the baby bust of the 1970s embarks on new careers. The relative proportion of recently educated new workers will therefore be shrinking, raising the possibility of severe labor shortages in entry-level jobs. Barring major protectionist policies, the U.S. economy will be increasingly exposed to the economic strategies of other countries, vying for greater shares of production and world markets. Greater international competition may increase substantially the number of plant closings and other economic dislocations that have destabilized many local and regional economies throughout the 1970s and 1980s. All indications are that technology will continue to produce rapid and widespread advances that make old job skills obsolete and create demands for new skills and aptitudes. These demands for new skills, in combination with a shrinking entry-level workforce, will probably require substantial retraining of middle-aged and older workers on scales the country has never before experienced.

That these challenges seriously threaten the ability of the United States to improve, indeed even maintain, the nation's standard of living is by now widely recognized. Less well understood is how the nation should respond. There is general agreement, however, that improving education is a critical ingredient. Beginning in 1983 with the report of the National Commission on Excellence in Education declaring the United States "a nation at risk," the country embarked on a variety of major efforts to raise standards, upgrade the curriculum, improve teaching, and otherwise goad schools into achieving greater productivity and effectiveness.

To date, however, these efforts have concentrated largely on elementary and secondary education. While some states have also undertaken reassessments of their postsecondary education systems—California, for example, recently reexamined the state's Master Plan for Higher Education—less urgency and sense of crisis surround the condition of postsecondary education. Postsecondary education in the United States is much less the public behemoth that elementary and secondary education have become. Postsecondary education is less regulated, less unionized, and more subject to competition, not only between public and private institutions but also among public institutions as well. Compulsory attendance laws do not apply to postsecondary education, and in the absence of a captive clientele, postsecondary institutions must and do compete aggressively for students. More subject to market forces, therefore, it is easy to assume that postsecondary education is more likely to respond effectively to the social and economic challenges confronting the nation.

Postsecondary institutions probably are more responsive, but there are nevertheless signs that not all is well. While almost 70 percent of high school graduates go on to some form of postsecondary education, increasing numbers of students are leaving postsecondary education without completing a degree or certificate. This pattern is especially evident for the growing numbers of students entering two-year colleges. Thus, of those members of the high school senior class of 1980 who entered two-year public colleges sometime during the first four years following high school graduation, 19.4 percent had earned a degree or certificate by 1984, 25.2 percent had transferred to another postsecondary institution, 13.8 percent were still enrolled in their first two-year college, and 42.0 percent had left without completing a degree or certificate.[1] Comparable figures for the senior class of 1972 four years after high school graduation were 22 percent completing a degree or certificate, 28.2 percent transferring, 19.9 percent still in school,

[1]W. Norton Grubb, *Dropouts, Spells of Time, and Credits in Postsecondary Vocational Education: Evidence from Longitudinal Surveys*, (forthcoming), Figure 1.

and 30.0 percent leaving without competing a degree or certificate. Hence for the class of 1980, rates of completion had dropped, there were fewer transfers, a smaller percentage were still in school, and the percentage of those leaving without completing a degree or certificate was up sharply.

Rates of persistence in postsecondary education reflect similar trends; larger numbers of students are persisting for shorter periods of time. Thus, while 72 percent of 1972 high school graduates entering postsecondary education persisted for at least two years, only 52 percent of 1982 high school graduates did so.[2] Similarly, while 47 percent of the 1972 high school graduates entering postsecondary education in the fall following high school graduation persisted for four years, only 27 percent of the 1982 hign school graduates did so.

While these declines were true for all racial and ethnic groups, they were especially severe for black students. For example, 63 percent of black high school graduates in 1972 persisted for at least two years, compared to 41 percent ten years later; 41 percent of the 1972 black graduates persisted for four years, but only 15 percent of the black high school graduates from the high school class of 1982.[3]

It is sometimes argued that increased postsecondary enrollment, especially of minority students who tend to have inferior academic preparation for postsecondary work, is largely responsible for these declines in student persistence. The percentage of high school graduates enrolling in postsecondary education did, in fact, increase between 1972 and 1982, but the growth was modest and cannot, therefore, explain such large declines in persistence. Thus. 60 percent of 1972 high school graduates enrolled in postsecondary

---

[2]Eva Eagle, *Postsecondary Enrollment, Persistence, and Attainment for 1972, 1980, and 1982 High School Graduates*, Washington, D.C.: National Center for Education Statistics (forthcoming).

[3]*Ibid.*

education at some point within four years of having graduated from high school, and this percentage rose to 66 percent for graduates from the high school class of 1982. Among blacks, the increase was positive but less than for the cohorts as a whole; 55 percent of black 1972 high school graduates enrolled in postsecondary education within four years of high school graduation, compared to 58 percent of 1982 high school graduates.[4] This five percent increase(3 percent/55 percent = 5.45 percent change) in the percentage of black high school graduates enrolling in postsecondary education cannot explain declines in persistence rates between the 1972 and 1982 cohorts among black students of 35 percent at two- year schools to 63 percent at four-year institutions .

What could account for such large changes? There are many possibilities including changes in federal and state financial aid policies, as well as different economic conditions which affect the attractiveness of remaining enrolled in postsecondary education. But there may be a major institutional explanation as well: while postsecondary institutions have operated under powerful incentives to maintain or increase enrollments, incentives to maximize persistence and completion or deliver on other indicators of performance have traditionally been quite weak. For the most part, postsecondary finances are "enrollment driven," with revenues determined primarily by the number of "full-time equivalent students" (FTES) or "average daily attendance" (ADA) generated by the institutions. During the late 1970s and early 1980s, the pool of potential postsecondary students was steadily growing, increased by the large bulge of the baby boom arriving at college-going age, a growing percentage of women entering postseconday education, and an increasing number of adults returning to postsecondary institutions (especially two-year colleges) for skill upgrading and retraining. Colleges and universities, therefore, could respond to strong incentives to increase enrollments without having to pay as much attention to what

[4] *Ibid.*

happened to students once enrolled.[5] This is not to say that postsecondary institutions routinely neglected students once enrolled, simply that the organizational arrangements were not such as to strongly encourage attention to student outcomes. As the pool of potential postsecondary students now contracts, institutions may find it necessary to pay more attention to improving rates of persistence or completion, but the links between enrollment and outcomes continue to be indirect. Generally, the finance systems, in addition to such other features as government regulation and the complexities of collective bargaining, all tend to focus attention on inputs and procedures rather than on student outcomes.

Similar incentive structures exist for elementary and secondary education, leading several observers to call for more outcome-oriented approaches to delivering education. "Make the schools compete," writes Chester Finn in the *Harvard Business Review*.[6] He outlines a ten-point strategy that includes focusing public regulation on ends rather than means and installing performance-based feedback and accountability systems. In a similar vein, Marc Tucker and David Mandel write:

> For decades, education and training policy has been access-oriented and based on design criteria...When access-oriented systems are regulated according to design criteria, however, providers have strong incentives to increase the unit cost of service...and weak incentives to provide high quality service. Once access has been provided to the system, providers have little incentive to direct the most valuable resources to those who need them most.[7]

---

[5]There should be, of course, a link between student outcomes and institutions' abilities to attract students, and the more successful postsecondary schools probably have and easier time maintaining or increasing enrollments. Nevertheless, the link is quite indirect.

[6]Chester E. Finn, Jr., "Education that Works: Make the Schools Compete," *Harvard Business Review*, Vol. 87, No. 5, September-October 1987, pp. 63-68.

[7]Marc S. Tucker and David Mandel, "A Voucher Plan for Workers," *Education Week*, Vol. VII, No. 6, October 7, 1987, p. 32.

Tucker and Mandel advocate a training strategy that is performance-based and market oriented.

Despite the intuitive appeal of more outcome-oriented approaches to organizing the delivery of education, it is by no means clear that such strategies are the best way to achieve the desired results or that they will even improve greatly on the current system. Writing in the same issue of the *Harvard Business Review* as Chester Finn, Thomas Rohlen makes the following comments about the eminently successful Japanese education system:

> Japan's success has little to comfort ideologues of either the left or the right. Curricular standards and much of the money come from the central government. The teachers' union is powerful. A voucher system would be anathema to most Japanese parents because it would imply an abdication of responsibility by the government and the loss of a common focus. Teachers' salaries are somewhat more attractive than in the United States, but then teachers work 12 months a year. Class size is large by our standards and physical plants are Spartan, but large sums of money are spent on equalizing the resources available in each district. Few special programs exist. Teachers have tenure almost from the start, and salaries are based on seniority. With so many characteristics we would fault, how do the Japanese do so well?[8]

Part of the explanation is cultural homogeneity, the absence of poverty, and a single language. Rohlen suggests the answer is also a set of clear national standards reinforced by parents, future employers, and school authorities themselves. Unfortunately, the strategy for achieving similar conditions in this country, Rohlen concludes, is an American problem with no obvious Japanese equivalent.

A degree of caution is, therefore, in order. Performance-based policies, even those limited to the vocational education enterprise, may have little impact because they ignore more intractable problems in the education system. Moreover, such policies may unwittingly create new problems. This much is certain. For outcome-based policies to

---

[8]Thomas P. Rohlen, "Why Japanese Education Works," *Harvard Business Review*, Vol. 87, No. 5, September-October 1987, pp. 42-47.

work, at least four conditions must be met. First, it must be possible to specify the desired outcomes precisely and unambiguously. Second, these outcomes must be easily, accurately, and fairly measured. Third, performance must be tied directly to funding so that success is rewarded or failure penalized. Fourth, provisions for disclosing information on outcomes to consumers and policy makers are desirable to improve choices and decision-making.

This study explores how well these requirements for perfomance-based policy can be met in postsecondary vocational education. It seeks to lay out what is known about various approaches to performance-based education policies and to weigh their pros and cons. The remainder of this chapter looks at performance-based policy in the context of policy research conducted during the last two decades or so. It raises some of the general conceptual issues that will need attention. Chapter Two addresses problems of defining and measuring performance in postsecondary vocational education. Chapter Three discusses alternatives for tying performance measures to funding provisions. Chapter Four examines issues about information disclosure. Chapter Five concludes with some implications for federal policy and future research.

Performance-based Policy in Perspective

Calling for better methods for determining the wants of increasingly diverse publics and evaluating the effectiveness of the public sector to deliver, Melvin Webber writes:

> If there is a single rule of systems analysis and of economics, if there is a single relevant canon of science, this is it: the only acceptable test of an hypothesis—including a policy or an action hypothesis—is whether it works when you try it out. The measure we must meet is demonstrated effectiveness of outcomes—effectiveness as measured against explicitly enunciated goals.[9]

---

[9]Melvin M. Webber, "Planning in an Environment of Change, Part II: Permissive Planning," The Town Planning Review, Vol. 39, No. 4, January 1969, p. 290.

A major problem with traditional policy analysis and planning, Webber argues, is the repeated tendency to measure worth and prescribe action based on inputs rather than outcomes. Policy tends to become so preoccupied with inputs—teacher-student ratios, hospital beds per capita, land use and building regulations, etc.—that the means become the end with little evidence that they accomplish their intended purposes.

There are, therefore, two very different approaches to designing and implementing public policy. First, policy can prescribe *procedures*, laws and regulations setting forth how particular policy aims are to be accomplished. Alternatively, policy can prescribe *outcomes* and the mechanisms that will be used to reward success or penalize failure in achieving policy objectives.

Traditionally, federal policy has more often taken the procedural approach, which tends to be highly prescriptive and delimiting. Federal vocational education policy, for example, gives states little discretion over the procedures to be used for allocating the portions of the basic grant set aside for handicapped and disadvantaged students. Federal law specifies the formulas states are to use, and states may not deviate from the procedure. In other instances, it dictates requirements for planning, the establishment and composition of advisory boards, state/local matching of federal funds, and the purposes for which federal funds may be expended. For such prescriptions to be effective, there must be confidence that they will achieve the desired ends and that they can be adopted universally with desirable results. Unfortunately, unilateral prescriptions tend to break down in the widely varying, highly decentralized environment that characterizes the postsecondary vocational education enterprise.

Prescribing outcomes and permitting a variety of means for achieving them offer an alternative to the procedural approach to policy. For example, rather than specifying how funds may be used under the handicapped setaside in vocational education legislation, the

law might base the allocation of funds on the number of handicapped students completing a vocational education program. A postsecondary institution's allocation would depend simply on the number of students completing rather than on the number of students enrolled or how funds were used. In effect, the law would direct providers to maximize completion by handicapped students, using whatever means work best in a particular institution. The choice of means would be left to local decision makers.

As indicated above, for outcome-based policies to work, at least four conditions must be met. First, it must be possible to specify the desired outcomes precisely and unambiguously. Second, these outcomes must be easily, accurately, and fairly measured. Third, performance must be tied directly to funding so that success is rewarded and failure penalized. Fourth, information on performance must be avilable to consumers and policymakers. These are not easy conditions to satisfy. Moreover, monitoring compliance with procedural policies tends to be much easier. As Friedman notes, procedurally based policies are relatively easy to monitor, usually involving a simple yes or no determination of whether the procedure was followed—e.g., the state either did or did not use the formula to allocate funds. Monitoring outcome-based policies is more complex, typically involving measurement to determine whether the doer has complied with the directive and to what extent—e.g., measuring the placement rate achieved by a particular program and comparing it to the rate achieved by others.[10] There is, therefore, an inherent bias in favor of procedural approaches, especially when the policy maker exercises centralized authority and control.

Despite the difficulty of designing good performance-based policies, support for this approach has come from a variety of disciplines, and some experiments with performance-based approaches have been successful. Probably the strongest advocates for performance-

---

[10]Lee Friedman, *Microeconomic Policy Analysis*, New York: McGraw Hill, 1984, p. 575.

based policy are some economists who seek ways to make the provision of public services, where appropriate, more subject to market forces. Using market-like devices to improve the efficient provision of public services is a prominent theme in the writings of Milton Friedman, James Buchanan, Gordon Tullock, and other well known economists.[11] Sometimes their recommended approach takes some form of vouchers—earmarked subsidies provided to potential users of services rather than public support directly to service providers. Medicare, the food stamp program, and the G.I. Bill are all examples of publicly supported voucher systems.[12] Milton Friedman is a longstanding advocate of vouchers for public education, and John Coons and Steve Sugarman are perhaps the most thoughtful and thorough architects of voucher proposals for elementary and secondary education.[13]

While voucher advocates seek to improve performance through consumer sovereignty and increased competition among providers, other theorists have concentrated on other aspects of public finance. Much thought, for example, has been devoted to public pricing, not only to correct for distorted private market prices but also to improve the allocation of resources within the public sector itself.[14] Although most pricing discussions have concentrated on municipal services such as waste and effluent discharge, congestion,

---

[11]See, for example, Milton Friedman, *Capitalism and Freedom*, Chicago: University of Chicago Press, 1962; James M. Buchanan, *The Demand and Supply of Public Goods*, Chicago: Rand McNally, 1968; Gordon Tullock, *Private Wants, Public Needs: An Economic Analysis of the Desirable Scope of Government*, New York: Basic Books, 1970.

[12]See also, John L. Compton, "Recreation Vouchers: A Case Study in Adminstrative Innovation and Citizen Participation," *Public Adminstration Review*, Vol. 43, No. 6, November/December 1983, pp. 537-546.

[13]Milton Friedman, "The Role of Government in Education," in Robert A. Solo (ed.), *Economics and The Public Interest*, New Brunswick, N.J.: Rutgers University Press, 1955; John E. Coons and Stephen D. Sugarman, *Education by Choice: The Case for Family Control*, Berkeley: University of California Press, 1978.

[14]See Selma Mushkin (ed.), *Public Prices for Public Products*, Washington, D.C.: The Urban Institute, 1972; Edgar K. Browning and Jacquelene M. Browning, *Public Finance and the Price System*, New York: Macmillan, 1987.

transportation, and public utilities, some attention has been paid to pricing issues in education. Most of the education-related work concerns how best to set the value of various education vouchers, but some literature has also addressed contracting by schools or students for selected educational services.[15]

Although voucher proposals and pricing proposals are obviously related, voucher advocates tend to be more motivated by the desire to stimulate improvements in the quality of services rendered through increased consumer choice and competition, while those concerned about pricing are more often addressing concerns about the overall amount of services provided. Thus, while competition and choice in postsecondary vocational education can be addressed through open enrollment policies and financial aid, there remains the problem that as long as postsecondary education is free or underpriced (even recognizing certain public good aspects of education), overconsumption is encouraged. Precisely what form such overconsumption may take and therefore what the impact would be of pricing postsecondary education closer to its marginal cost is, however, not immediately clear. On the one hand, higher prices might discourage "milling around" and therefore improve completion rates. On the other hand, they might discourage more students from persisting in postsecondary education and therefore negatively affect completion.

As important as the question of what should be paid for particular services is the issue of who should pay. Clearly identifying the beneficiaries of public services is not always as straightforward as it first appears. In this regard, vocational education offers an excellent case in point. If vocational education produces earnings gains for participants, they may truly be said to be the beneficiaries and might be appropriately charged for their use of vocational education services. If, on the other hand, vocational education serves to increase

[15]Martin T. Katzman, "Pricing Primary and Secondary Education," in Selma Mushkin (ed.), *Public Prices for Public Products*, Washington, D.C.: The Urban Institute, 1972, pp. 371-393.

the supply of trained workers and thereby decreases the wages that employers might otherwise have to pay for such labor, the beneficiaries are employers or consumers of employers' products, and they are more properly the ones who should pay the costs. Public finance theory provides the tools for setting charges appropriately once the beneficiaries have been properly identified. Unfortunately, it is less helpful in determining who does indeed benefit. Such ambiguities constantly plague attempts to bring the discipline of the market to the public sector.

It is worth noting that discussions of pricing in higher education have a tendency to set off political alarums. Tuition is an emotional issue and raises important questions about the impact of pricing on access. Public finance theorists, however, are fond of arguing that matters of resource allocation should be handled separately from issues of income distribution and advocate different policy instruments for addressing the two sorts of problems.[16] Moreover, the failure to make such distinctions encourages one to assume that public support requires public provision. As Mark Blaug writes:

> The confusion between state provision and state financing is so prevalent in most discussions of the welfare state that we might pause a moment to establish firmly the distinction. For example, to show that many people cannot afford to educate their children beyond the statutory leaving age at best establishes a case for a cash grant by the state, an income tax rebate, or a personal loan from the the public authorities, but has absolutely nothing to dc with the issues of private versus public ownership of schools...External benefits, parental incompetence, and equality of opportunity do not stand up as arguments for state-provided education.[17]

Nor do they justify providing education, public or private, at zero or low prices.

---

[16]Richard A. Musgrave and Peggy B. Musgrave, *Public Finance in Theory and Practice*, New York: McGraw-Hill, 1973.

[17]Mark Blaug, "Economic Aspects of Vouchers for Education," in *Education: A Framework for Choice*, London: Institute for Economic Affairs, 1967, p. 33.

Students of public finance and public administration have addressed issues of performance from yet another perspective, namely the budgeting process. Thus, proponents of Planning-Programming-Budgeting (PPB) and Zero-Base Budgeting (ZBB) seek to integrate performance evaluation into the budgeting process of federal, state, and local governments.[18] While governor of Georgia, Jimmy Carter enthusiastically embraced ZBB and went on to mandate the adoption of the system in the federal government when he became President. Proponents of PPB and ZBB seek to make budget decisions depend on more rational assessments of public programs and to overcome the mindlessness of "incrementalism" and "muddling through."[19]

Unfortunately, most assessments of PPB and ZBB conclude that they have had little impact on the budgeting process. Frank Draper and Bernard Pitsvada conclude:

> Perhaps the most striking feature of ZBB over the past decade is the retreat in a great many instances from what ZBB was supposed to be all about: namely, the conducting of zero-base reviews of programs. ZBB did not change the nature of budgeting from an incremental mode to a "rational-comprehensive" one. Indeed, ZBB probably suffers most from its name and probably frightened away many budgeteers and public program managers. A look at how ZBB is practiced across all levels of government reinforces the view that budgeting is a science of decisions made at the margin. Rarely is budgeting a zero-sum game; it is incrementalism and we really do, still, for most part "muddle through."[20]

Thomas Lauth, examining the impact of ZBB in Georgia, where it enjoyed such strong support, reaches similar conclusions.[21] ZBB in Georgia fell prey to three major problems:

---

[18]See Sharles L. Scultze, *The Politics and Economics of Publis Spending*, Washington, D.C.: The Brookings Institution, 1968; Peter A. Phyrr, *Zero-Base Budgeting: A Practical Management Tool for Evaluating Expenses*, New York: John Wiley, 1973.

[19]Aaron Wildavsky, *Budgeting, A Comparative Theory of Budgeting Processes*, Boston: Little, Brown and Company, 1975.

[20]Frank D. Draper and Bernard T. Pitsvada, "ZBB—Looking Back After Ten Years," *Public Adminstration Review*, Vol 41, No. 1, January/February 1981, p. 77.

[21]Thomas P. Lauth, "Performance Evaluation in the Georgia Budgetary Process," *Public Budgeting and Finance*, Vol 5, No. 1, Spring 1985, pp. 67-82.

- program administrators believe that their programs do not readily lend themselves to performance evaluation and possess a natural resistance to evaluation;
- the budgetary process is structurally biased in favor of continuing existing programs;
- traditional budgeting processes tend to remain intact when there is no need to curtail expenditure growth beyond the routine budget cutting practices of the bureaucracy and the legislature.

The process is further confounded by a number of other problems in evaluating the costs and benefits of social programs: the quality and accuracy of available data, inappropriately designed accounting systems, commingled funds, and difficulties of isolating the effects of other programs.[22]

Previous thinking about improving the performance of publicly supported services raises a number of questions that must be kept in mind as this study assesses possible approaches to performance-based policies. These include:

- How well do the objectives of vocational education lend themselves to performance evaluation, and how can multiple objectives be weighted and accomodated?
- Assuming that appropriate indicators of performance can be defined and measured, what is the likelihood that adequate data can be economically developed to support a system of performance-based policy?
- Given that federal funding is a relatively small fraction of public support for vocational education, how likely is it that performance-based federal policies would have discernable effects?
- What organizational and institutional aspects of postsecondary vocational education are likely to impede performance-based policies, and what strategies might help to overcome these obstacles?

---

[22]Thomas V. Greer and Joanne G. Greer, "Problems in Evaluating Costs and Benefits of Social Programs," *Public Adminstration Review*, Vol. 42, No. 2, March/April 1982, pp. 151-156.

The chapters that follow aim to address these and other questions critical to the design of performance-based policies. Throughout the analysis relies on findings from a number of case studies of different approaches to performance-based policy inside and outside of education. Significantly, most of the strategies discussed in this study are not simply untried, theoretical ideas. We have found working examples of performance-based policies in many places and have attempted to determine what can be learned from them to develop a more comprehensive and systematic approach to performance-based policy for postsecondary vocational education.

CHAPTER TWO: DEFINING AND MEASURING PERFORMANCE IN POSTSECONDARY VOCATIONAL EDUCATION

Postsecondary vocational education has three widely accepted objectives. First, it aims to help satisfy the economy's requirements for an adequate supply of workers who have been properly educated and trained to perform effectively on the job. Vocational education can achieve this objective both by increasing the numbers of people educated and trained and by improving the productivity of its graduates. Second, vocational education seeks to increase students' knowledge and skills, improving their employability in a wide variety of labor market settings and for extended periods of time. What distinguishes vocational education from employment training is its greater emphasis on breadth of knowledge and longer term utility and transferability of the skills taught. Third, vocational education seeks to improve access to quality programs for groups of students historically under represented in various segments of the labor market—students with physical or learning handicaps, economic or academic disadvantages, limited English proficiency, or other attributes that limit their full participation in the labor force. These three objectives imply that the performance of vocational education should be assessed in terms of three types of outcomes:

- labor market outcomes;
- learning outcomes;
- access outcomes.

What, then, are the prospects for defining and measuring these three types of outcomes in ways suitable for performance-based policy?

A. LABOR MARKET OUTCOMES

Definition of Labor Market Outcomes

Labor market outcomes are the traditional standards by which the effectiveness of vocational education and employment training have been evaluated. Federal policy, for example, has long emphasized placement in occupations related to training and employer satisfaction with vocational education graduates as the primary indicators of program success. Other definitions of labor market outcomes include placement generally (i.e., in any job, not necessarily one related to training), placement in full-time employment, placement in part-time employment, hourly earnings, changes in earnings pre- and post-participation in a vocational education program, earnings over time, duration of unemployment prior to finding a job, duration of employment once employed, and a variety of cross classifications or indices combining two or more of these variables.

As a general rule these labor market outcomes can be defined rather precisely and clearly. Determinations of "relatedness to training" sometimes defy clear logic, but decisions about what kinds of vocational education are related to what types of occupations can be specified unambiguously, even if arbitrarily. Similarly, measurement rarely poses conceptual problems. Many of these outcomes, such as earnings or duration of employment and unemployment, are subject to clear, interval measurement. The more qualitative variables, such as employer satisfaction, can at least be measured ordinally (e.g., satisfaction measured on a scale from one to five with one indicating very satisfied and five indicating very dissatisfied) without much difficulty. The major methodological problem surrounding labor market outcomes is data collection rather than definition of labor market outcomes.

Data Collection Issues

Although the variables can be defined and measured with much clarity and precision, actually collecting the information on students who have participated in vocational education

programs has proven very problematic. To evaluate vocational education programs in terms of labor market outcomes, one would ideally like to have data on many of these outcomes over an extended period of time (at least for a year after participation in a program and preferably for five years or more).

In practice, large scale follow-up of the labor market experience of participants in vocational education programs has been riddled with problems. The attempt by the now defunct Vocational Education Data System (VEDS) to require annual universal follow-up of program completers in vocational education failed dismally. Intended to determine employment status (limited to placement data rather than information on hourly wage rates or earnings) six months after program completion, the VEDS follow-up effort, which relied mainly on mail surveys, typically produced information on no more than 25 percent of the completers, rendering the data useless. Moreover, even had response rates been acceptable, the follow-up effort would have yielded no information on the longer term labor market experience of vocational education students.

Much better and more comprehensive follow-up information has been generated by several national longitudinal studies, such as the National Longitudinal Study of the Senior Class of 1972, NLS Youth, and High School and Beyond.[1] These large national samples achieve uniformity in definitions and measurement methodology, and they have obtained excellent response rates. They follow participants over many years, permitting assessments of the long term effects of participating in vocational education and employment training. As powerful as these longitudinal studies are, however, they suffer from several drawbacks.

First, they are costly and technically complicated to execute. Second, new cohorts are selected only infrequently (once about every eight years is the current norm). Third, while longitudinal studies can provide good national estimates of the aggregate import of participation

[1]The National Education Londgitudinal Study of 1988 (NELS:88) continues these important and useful longitudinal studies.

in vocational education, the sample sizes are not large enough to make comparisons among different states, let alone among different institutions or programs within institutions. National differences can be analyzed for approximately twenty-five programs with the largest enrollments, far short of the several hundred different types of vocational education programs that are operated at the postsecondary level. In short, the longitudinal studies are excellent sources of data for national policy studies and might even be effectively used for policy assessments in some of the largest states, where sufficient sample size can be generated. They are not, however, viable tools for on-going accountability assessments of the effectiveness of programs at the state or institutional level. Hence, they cannot play a major role in performance-based policy, other than to validate periodically less comprehensive and shorter-term approaches to obtaining information on labor market outcomes.

An Alternative to Follow-Up Studies: Unemployment Insurance Data Bases

One promising source of labor market outcomes for almost all vocational education participants is the data maintained by each state's unemployment insurance record keeping system. Several states have been experimenting with procedures that use social security numbers to merge student record information on participation in vocational education programs with the labor market data collected quarterly by the unemployment insurance system.[2] While the particulars vary among states, generally all of these systems can provide information on whether a former student is employed (i.e., general placement), the industry in which the student is employed, and quarterly earnings. Moreover, these former students may be followed over time for as long as they are employed in the state or, in the event of unemployment, for as long as they are receiving unemployment insurance.

These files offer several advantages over one-time mail follow-up surveys. First, they are inexpensive to use and will produce data on a much larger percentage of students than that

[2]Chapter Four examines these activities in some detail.

obtained from responses to mail surveys. Second, the data are more accurate. The information is based on actual wages paid from employers' payroll records rather than the self-report of the employee. Third, samples need not be limited to program completers. It is relatively easy to analyze a wide variety of participation and completion patterns. Fourth, extended longitudinal analysis is possible at relatively modest cost, compared to the national longitudinal surveys. While these features make the unemployment insurance data quite useful, the files do suffer from several shortcomings:

- coverage is incomplete;
- information on occupation is usually not available;
- earnings information is not adjusted for part-time employment;
- match with postsecondary institutional data must be made through students' social security numbers.

Each of these features deserves some brief examination.

Coverage is problematic for two reasons. First, students who move out of state to work or who enroll for additional postsecondary education following participation in vocational education programs will not be included in state data files, and absent any other information, they will appear not to be unemployed or not in the labor force. Consequently, estimates of placement will be biased downward. Second, some classifications of workers are exempt from unemployment insurance reporting requirements, and to the extent that students go to work in these types of employment, they also will appear to be unemployed or not in the labor force.

Although the extent of coverage varies somewhat from state to state, the unemployment insurance data typically exclude certain classifications of employees who are exempt from the unemployment insurance code in each state and who are therefore ineligible to receive unemployment benefits. Self-employed workers (including sole stockholders of private

corporations, sole proprietors, unpaid family workers, and independent contractors) are the largest single group of exempt employees and account for about ten percent of total employment in most states. People in the military are also exempt, and in some states there are substantial numbers of military personnel, both in absolute numbers and as a percentage of total state employment. A few states exclude certain classifications of agricultural workers. Other exempt categories include workers in churches and some non-profit organizations, students working while enrolled in school, elected officials, domestics, and some real estate brokers.

With the exception of self-employed individuals and military personnel, these exempt categories do not pose serious problems for follow-up. They typically include small numbers of workers and are not likely occupations for students taking vocational education, especially at the postsecondary level.[3] Identifying students who work out of state, are self-employed, or enlisted in the military, however, is more important. One state using unemployment insurance files for follow-up uses mail and telephone surveys to contact only those students who cannot be found in the unemployment insurance files. As usually more than 80 percent of students employed soon after leaving school will show up in the in-state unemployment insurance data, the magnitude of a supplementary mail or telephone survey is considerably less than if follow-up efforts had to rely on these methods alone.[4] Consequently, with fewer students to survey, the mail and telephone efforts may be more persistent in attempting to contact former students. Moreover, as the unemployment insurance data greatly increase the minimum number of students for whom data are available, problems of non-response to the mail and telephone surveys are less severe. A possible adjunct to follow-up efforts (which is already used in one state) is to search military and postsecondary institutional data bases to locate former vocational students.

---

[3]In California, for example, the exempt categories other than self-employment and military personnel accounted for about 1.5 percent of total employment in 1986.

[4]A higher rate of initial matching could also be obtained if neighboring states agreed to pool their unemployment insurance data, so that students working in nearby states would be identified.

A second drawback of the unemployment insurance data is that states have generally been reluctant to require employers to identify the occupations in which their employees work. Updating occupational information on a quarterly or annual basis would be quite burdensome for employers. The employer does identify the Standard Industrial Classification (SIC) code that best reflects the nature of the business, but SIC codes are not usually a satisfactory indicator of the type of occupation in which a former student is employed. Consequently, it is difficult to use these data to determine the extent to which employment is related to a student's training. Many states do annually survey employers to obtain an occupational profile of each employer, but these data are reported in aggregated form by each employer. It is not possible to use these surveys to link a particular individual to a particular occupation. At best, one could use these aggregate data to determine a probability that, given employment in a particular SIC code, a person is employed in an occupation related to training.

A possible solution to some of these difficulties would be to ask employers to indicate *only at the time of first hiring* an employee the occupation in which the employee will initially be working. While such information would probably become outdated the longer an individual remained with the same firm, it would nevertheless provide useful information about relatedness to training at the point of entry, which for policy purposes in the primary concern. As the employer would have to supply the information only once for each employee and since the information would be supplied at the same time other data on the employee (name, social security number, and earnings) are initially submitted, such a requirement would impose little additional reporting burden.

A third shortcoming of the unemployment insurance data is that employers report only total earnings for each employee during a quarter. Some measure of rate of pay (e.g., hourly wage or number of hours worked) is typically not included with the data. Consequently, in comparing earnings of different individuals, it is impossible to control for differences resulting from part-time employment or employment commencing after the quarter has begun. As much part-time

employment is voluntary, comparisons of program outcomes based solely on aggregate quarterly earnings will present a distorted picture.

While requiring employers to report an additional data element to permit corrections for the lack of comparability in quarterly earnings would increase data burden, such a requirement would probably be much less burdensome than the requirement that they report occupational data. Such a variable could take one of two forms. First, employers could be asked to report for each employee the total number of hours worked during a quarter. Second, they could be asked to report the hourly wage rate in effect during the last pay period of the quarter. As payroll systems, even for very small firms, are increasingly automated (including production of the unemployment insurance quarterly reports), requiring one or the other of these items should not cause much additional inconvenience. Hours worked and hourly wages must be routinely maintained by the payroll system for part-time and hourly employees, and imputing an hourly wage rate for salaried employees could be made straightforward, even if somewhat arbitrary.[5] Indeed, if such a requirement were limited to employers with automated payroll/reporting systems, wage rate data would probably be available for well over three-fourths of employees in most states.

The final difficulty with this approach to obtaining data on labor market outcomes is that it requires that student records be automated, be based on an individual student record system, and contain the student's social security number for matching with unemployment insurance data files. All postsecondary institutions must also be willing to provide these data to a central state agency, which can coordinate the matching with the state unemployment insurance files. While such systems are more prevalent at the postsecondary level than at the secondary, there still are postsecondary institutions without automated student record systems, and those that are

[5]While salaried employees are often expected to work more than forty-hour work weeks, a forty-hour standard could be arbitrarily adopted for comparability purposes.

automated do not always use social security numbers as student identifiers.[6] However, at the postsecondary level automation is now widespread, and adding social security numbers to student data systems is a rather minor task for systems that do not presently require them.

In short, the unemployment insurance files provide a promising low-cost approach to obtaining current, accurate, and fairly comprehensive data on some selected labor market outcomes for students participating in vocational education programs. The approach is far from perfect and would benefit from a few modifications that do not appear to be burdensome or expensive. Certainly, the information and coverage is far superior to the follow-up efforts attempted by VEDS. While this method lacks the precision and detail of the larger national longitudinal studies, it provides an economical alternative for obtaining institutional and statewide data on an annual basis. Thus, good data are potentially available on labor market outcomes. What, then, is the appropriate role for information on labor market outcomes in performance-based policies?

Labor Market Outcomes and Performance-Based Policies: Some Caveats

Vocational educators have traditionally objected on several grounds to labor market outcomes as the primary criteria for evaluating the effectiveness of vocational education. First, they have maintained that the emphasis on such outcomes as placement rates fails to distinguish vocational education from more narrow job training. Adopting placement as the primary criterion ignores the multiple goals of vocational education. In addition to imparting specific job skills, vocational education is also concerned with the acquisition of basic skills in reading, writing, and mathematics. It also seeks to deliver general vocational skills that will serve students in a variety of ways as their careers advance.

---

[6]Technically speaking, a student cannot be required to reveal his or her social security number, although in practice, most students readily supply this information

Second, vocational educators have also argued that the employment of vocational education students is determined by a large number of economic and personal factors beyond the control of the vocational education system. "Hold us accountable for *employability*, but not for *employment*" has been a frequent refrain.[7]

Third, many vocational educators have expressed concern that the single-minded focus on placement encourages programs to admit only those students who are likely to be easy to place. Consequently, important objectives—such as serving students with special needs and opening certain occupations to women, minorities, and the handicapped—are ignored.

Fourth, the data and methodology available to evaluate labor market outcomes measure the *gross* effects of participation in vocational education—e.g., total numbers of students placed, total earnings, the ratio of total time employed to unemployed, etc. Ideally, the effectiveness of vocational education programs should be judged based on the *net* effects—i.e., the difference between the labor market outcomes that occurred when students participated in vocational education and what would have occurred had these programs not existed. If, for example, participants of vocational education programs simply displace other workers who would otherwise have obtained the jobs in which vocational education students are placed, the net effect on employment is zero (although productivity may still be higher). As a practical matter, measuring the net effects of labor market outcomes is highly problematic.[8] Nevertheless, the issue underscores the dangers in attributing labor market outcomes or the lack of certain labor market outcomes to the effectiveness of vocational education.

While these caveats are important warnings about using labor market outcomes carefully, they are not grounds for rejecting labor market outcomes out of hand. Improving labor market

---

[7]Gerry Hendrickson, *Evaluating Vocational Education: The Federal Stimulus*. Vocational Education Study Publication No. 5, Washington, D.C.: National Institute of Education. March 1981, p. 7.

[8]See David Stern, *Performance-based Policy Toward Postsecondary Vocational Education: Some Economic Issues*, (forthcoming).

opportunities for students is a longstanding objective of most vocational education programs, and if over the mid term (two to five years, for example) participants in a particular vocational education program do not exhibit positive labor market outcomes, the wisdom of continuing such a program deserves close examination. In the shorter run, however, labor market outcomes need to be supplemented with other indicators of performance: learning outcomes and access outcomes.

B. LEARNING OUTCOMES

While what happens in the labor market to participants in vocational education programs is outside the direct control of vocational educators, what students learn and how much they learn is much more within their purview. Yet efforts to improve the accountability of vocational education programs have devoted relatively little attention to measuring what is learned, preferring to concentrate on labor market outcomes as the indicators of program effectiveness. This single-minded focus on labor market outcomes is unfortunate, not only because of the conceptual and methodological problems they pose but also because defining and measuring learning outcomes may provide a much more direct and understandable measure of vocational education's accomplishments.

There are at least three ways to measure learning outcomes: 1) program completion, 2) mastery of necessary skills as demonstrated by competency or problem-solving testing, and 3) value added, indicating the amount of learning occurring between entry to and exit from a vocational education course or program. Each of these will be discussed in more detail.

Program Completion

Program completion takes many forms in secondary and postsecondary institutions. It can mean the award of a formal degree or certificate, completing an integrated sequence of courses or

other plan of study, or simply finishing a single course designed to meet a very immediate and specific skill need.

Completion offers several attractive features as a measure of program outcomes. First, it provides information on the absolute numbers of people ready for labor market participation in particular occupations, and this information may be evaluated with other data on labor market demand to assess potential labor shortages and surpluses. Second, it can be used to construct other measures of program effectiveness, such as ratios of completers to enrollees or completers to dropouts. Such measures, with appropriate controls for differences in student characteristics and program costs, provide indicators of the relative effectiveness of different programs. Third, it provides a direct link to labor market outcomes. By definition, completers are supposed to be prepared for successful labor market participation. If analysis of labor market outcomes reveals that completers are not succeeding in jobs related to their training, either the need for the program needs to be reconsidered or the program's understanding of what is required on the job—i.e., its definition of completion—needs to be evaluated.

The value of using completion as a measure of learning is greatly enhanced, however, if the definition of completion emphasizes the *demonstrated and certified acquisition* of the general and job-specific skills necessary to perform effectively an entry level job in an occupation related to the student's training (competencies) rather than passing time in vocational education or even the award of a degree or certificate. Unless students have demonstrated in some measurable fashion that the necessary general and job-specific skills have been acquired, vocational education has not made an adequate contribution to ensuring that they are employable.

Competency-based Curricula and Competency Testing

A competency-based approach seeks to establish a uniform standard for what completion represents—the *demonstrated and certified* acquisition of skills determined by program providers to be necessary for labor market success. Examples of different kinds of competencies include:

skills, such as typing or computer programming; *knowledge*, such as an awareness of career options or academic knowledge; *attitudes*, such as regard for others or initiative; and *behavior* such as promptness, cooperation, or adherence to dress standards.[9] Competency-based learning programs structure curricula by identifying competencies which students need to learn, building curricula materials to teach these specific competencies, testing students on their mastery of the skills, and advancing students through the program as they gain competencies.

Precisely what the skills are may and probably should differ depending upon local circumstances. For example, adequately preparing a student for an automotive job in a rural area may require stressing a broad range of general job skills, using less costly and less specialized diagnostic equipment than would be available in an urban area. Moreover, entry level positions in automotive occupations in metropolitan areas may be more specialized; for example, in an urban area, shops can specialize in muffler replacement or transmission repair and hire accordingly. In rural areas, there may not be sufficient demand to warrant this kind of specialization, and an entry level employee may be required to perform a greater variety of more general tasks to be fully occupied throughout the work day. Adequate preparation for automotive occupations, therefore, requires different kinds of preparation in different types of labor markets.

A great deal of state and local discretion for determining precisely what kinds of skills and levels of mastery are required for successful participation in local and regional labor markets is desirable. However, whatever specifics are adopted, program providers should be required to certify that completion of these requirements is sufficient for effective labor market participation, thereby holding them to a high standard of accountability.

Although competency-based curricula and competency testing have been widely used in vocational education for some time, they have never played a major role in federal vocational

---

[9]Center for Employment and Income Studies, *An Introduction to Competency-Based Employment and Training Programming for Youth Under the Job Training Partnership Act*. Waltham, Mass.: Brandeis University, Florence Heller Graduate School Center for Employment and Income Studies, not dated, pp. 5-6.

education policy. Indeed, competencies were never mentioned in federal vocational education legislation until the Carl Perkins Act made a passing reference in Section 113(b)(9)(a), which stated that each state's plan for vocational education shall:

> provide assurances that the State will develop measures for the effectiveness of programs assisted under this Act in meeting the needs identified in the State plan, including evaluative measures such as:
>
> (i) the occupations to be trained for, which will reflect a realistic assessment of the labor market need of the State;
>
> (ii) the levels of skills to be achieved in particular occupations, which will reflect the hiring needs of employers; and
>
> (iii) the basic employment *competencies* to be used in performance outcomes, which will reflect the hiring needs of employers. (emphasis added)

A few states appear to be using this language as the springboard for developing and implementing more formal systems of statewide requirements for competency-based curricula and competency testing in vocational education. However, they remain exceptions rather than the norm.

In federal policy, competencies have figured much more prominently in JTPA, especially the use of youth competencies as alternatives to the labor market outcomes that measure program success under JTPA, referred to as "positive terminations." JTPA incorporated competencies in order to realize at least six advantages that competency-based approaches to employment training seemed to offer the participant. First, a competency-based approach can readily identify and address individual needs. Because assessment is targeted to the individual and because services may be provided that specifically address skill needs as revealed by an assessment, individual needs are consistently the focus of program activities. Second, this approach fosters achievement by providing specific, attainable objectives which can be measured in terms that are clear both to the participant and to program staff. Third, a competency-based approach frequently increases motivation and interest in participation in services. Youth (and most adults as well) tend to respond positively to situations in which learning is determined by demonstration of a skill, rather than by length of time one has been in a classroom or work situation. Fourth, a

competency-based approach provides for a more realistic understanding of one's own skills, abilities, and preferences, since it concentrates on what a person actually does in a job. Fifth, because competency-based approaches imply objective standards of achievement, they tend to have credibility both for youth and the community. Youth tend not to feel that they are victims of the whim of an unfriendly teacher or counselor. Finally, competency-based approaches that are based on employer input tend to offer the individual a more realistic picture of the world of work and the job market.[10]

Competencies are not a painless panacea, however. Using competencies effectively poses some difficult challenges. First, either program administration or the training agency must decide which competencies programs will teach. This decision involves setting priorities among skills and choosing skills that are appropriate for the occupation taught. Second, there are many practical problems. Implementation of competency-based curriculum requires that definitions of competence be reduced to manageable terms, broken into recognizable and teachable units, and assessed reliably. Dangers include breaking the curriculum into specific measurable skills which do not sum to the requirements of the occupation. Third, competency-based programs create assessment issues. Programs must decide how to measure student success. If all skills needed for an occupation are not defined in the competencies, the measure of students' success, instead of the demands of the occupation, can dictate what is taught (teaching to the test). A fourth problem is setting standards or benchmarks of success. If standards are too low they will erode motivation to excel, yet if set too high, too few people pass the course. In addition, standards may be set in order to pass a certain percentage of students, while actual job success would dictate a different standard.

A final problem involves measuring learning gains. Ideally, program success would be measured by how much students learned from the program. This involves complicated measures

---

[10] *Ibid*, p. 9

of competency before, as well as after, student participation. Measuring at the end of a program does not show learning that has occurred unless we assume that all students started with no knowledge. Measuring competencies only at the end of a program also encourages institutions to enroll students who have the least to learn.[11] Indicators of the gain in knowledge, or "value added" are therefore desirable.

To learn more about competency-based curriculum and testing for improving vocational education, we examined the experiences of several JTPA and postsecondary vocational education programs. The JTPA experience is instructive because it provides some evidence about what occurs when federal policy explicitly allows performance outcomes to be defined in terms of competencies and ties these measures to funding. While this study could not undertake a full-blown examination of the development and implementation of competencies under JTPA, we were able to learn more about what has transpired in two Service Delivery Areas: Los Angeles, which is widely acknowledged to have made substantial progress with youth competencies, and Vermont, which established one of the first youth competency programs in the nation. We also visited several states that have developed competencies for postsecondary vocational education programs, including Oklahoma, Colorado, Minnesota, and Vermont. Of particular interest were the motivation for developing competencies, the process by which competencies were developed, implementation issues, and how student performance is measured.

Motivation for Developing Competencies

In states where competency-based approaches to postsecondary vocational education have been developed, a primary motivation has been a desire for program improvement, sometimes prompted by dissatisfaction with the uneven quality of programs at institutions around the state.

---

[11]See Arthur Chickering and Charles Claxton, "What is Competency," in Ruth Nickse and Larry McClure (eds.), *Competency-based Education: Beyond Minimum Competency Testing*, New York: Teachers college Press, 1981, pp. 5-41; Sidney Micek and Eilliam Ray Arney, *Outcome-oriented Planning in Higher Education: An Approach or an Impossibility*, Boulder, Co.: National Center for Higher Education Management Systems, Western Center for Higher Education, June 1973.

State-level specification of competencies for different occupational areas allows greater control over program quality and provides a means for holding schools accountable for providing students with the skills needed for entry level jobs in their chosen fields. It should be noted that state-level development of competencies is a very cost-effective way of promoting program improvement. As will be discussed further below, developing a set of competencies for an occupational area is extremely time consuming and costly. Having the effort state-directed not only avoids considerable duplication of effort, but also provides an opportunity to get the most knowledgeable instructors, employers, and state staff together to share ideas and discuss what is most important in each occupational area. The resulting curricula are therefore typically better than what any individual institution could produce.

The desire to achieve greater consistency in offerings throughout the state has been another motivation for introducing competencies. States have recognized that attention to competencies will pay off in improved articulation between secondary and postsecondary vocational education programs and coordination among programs. Because schools with competency-based curricula clearly document the content of each program, schools entering articulation agreements can identify courses that teach the same skills, and receiving schools have some guarantee that entering students have mastered the skills needed to do advanced work. A competency-based system thus makes it easier for students to move easily from institution to institution within the postsecondary system.

Despite the interest in increasing the consistency of offerings, however, none of the states we visited has imposed a standardized state curriculum. State-level administrators have recognized that local needs and preferences must be respected, and that the constraints of local resources, equipment, and instructional methods must be taken into account.

Acceptance by both employers and institutions has been good. States have found that the introduction of competencies has increased vocational programs' credibility with employers. In

states with well defined competencies, employers have a clear understanding of what students are learning and can be confident that all students are receiving instruction on topics approved by industry leaders no matter which school they attend. Instructors interviewed were generally positive about competency-based curricula. The state curriculum is validated by state and national experts to which schools otherwise would not have access. Using the state materials saves school resources and makes the jobs of instructors easier.

Development and Implementation

The process of developing and implementing appropriate competencies is lengthy, detailed, and costly, and it requires extended local discussions with a large number of actors. The magnitude of the effort involved is perhaps best illustrated by describing one state's process. Oklahoma is widely acknowledged to be one of the leaders in developing competency-based curricula for secondary and postsecondary vocational education, and has been using competency-based curricula for many years..

In 1968, the state established a curriculum development and distribution center within the Department of Vocational Education called the Curriculum and Instructional Materials Center (CIMC). Since then, CIMC has developed competency-based curriculum that is used by 90 percent of occupational programs in Oklahoma and also by many programs in other states. The center is supported by state and federal vocational education funds and by revenues from the sale of materials to schools and agencies outside the state. (Schools within Oklahoma are provided materials at cost.)

Each year, CIMC adds more occupational areas to its inventory and revises some of the existing curricula. Revisions include updating skills and techniques to reflect changing occupational technology, enhancing programs by adding skills to the core curricula, and creating new instructional materials such as video tapes, slides, and student workbooks.

The State Board of Vocational and Technical Education has adopted a policy that encourages the use of state competency-based curricula. Schools voluntarily choose to use state curricula; however, board policy states that schools must use *state instructional materials or appropriate substitutes*, and these materials must be "appropriately utilized."

Developing a new curriculum book takes about a year. During the curriculum development process, state staff identify priorities for new and updated curricula, gather existing curriculum materials from local sources and regional consortia, and write curricula in close consultation with experts in each occupational area.

The first core curriculum materials were developed in the most common occupational areas, such as agriculture and home economics. Each year CIMC selects occupational programs to revise or add to its inventory. It may update curricula to reflect changes in technology, add new skills to the core curriculum in an occupation, or add new occupations. Curriculum is revised most often in fields in which technology changes rapidly. New occupations are added in response to the needs of industry and public agencies. Legislative and administrative priorities also help define priorities for curriculum revision. Priorities may also be set in response to the requests of specific training agencies.

Once priorities have been identified, state staff in the curriculum development division begin the process of writing the curriculum. Staff develop a list of occupational tasks to include in the curriculum. The tasks are chosen based on existing state materials, curricula used by local schools, and curriculum available through consortia and networks (e.g., Mid-West Occupational Curriculum Consortia, the National Center network, ERIC, and VTEC).

Next, curriculum division staff assemble a curriculum committee to review the task list developed by department staff. The committee includes instructors, representatives from teacher education programs, state department program supervisors in the appropriate occupational area, and representatives from state licensing boards and labor associations, when appropriate. The

committee reviews the existing materials to identify the duties, tasks, skills, and knowledge that should be included in the new curriculum.

After the committee has defined the desired content of the curriculum, state staff identify knowledgeable instructors or industry representatives to work with CIMC staff as technical consultants in writing the final materials. The consultants work with CIMC technical writers to translate the list of tasks, knowledge, and skills into detailed course guides, student workbooks, assessment materials, and instructional support materials.

Once the curriculum is written, it is reviewed by the committee of industry and education representatives. This committee reviews all materials to ensure that the curriculum is current and complete. Materials may be revised based on comments from this validation process.

C also supports its curriculum with technical assistance. The State Department of Vocational and Technical Education has an office for instructional support. Members of this office visit with teachers at least once a year to review their curriculum and instructional delivery system. These state staff people know the state curriculum and work with advisory committees to stay abreast of current practices in industry. They train instructors, individually and at workshops, in the use of the competency-based materials.

Members of both the state technical committees and local program advisory committees are likely to get involved in the creation of curricula for Oklahoma vocational programs. Members of the state technical committees are often asked to serve on the curriculum committees that review materials developed by CIMC. Local advisory committees play an important role in reviewing curricula and customizing materials to fit local labor market needs.

The advice of technical committee members and others serving on curriculum committees is only one source of input. CIMC receives further suggestions and comments on its curricula directly from those using the materials. Users are encouraged to call the center if they find

mistakes in materials or have suggestions for improvement, and this type of feedback has been extremely valuable. In addition, curricula for occupations which require state tests are sent to state licensing boards for review and certification.

Although a primary goal of the state curriculum center is the standardization of curriculum across programs, the local customizing of curriculum results in very diverse programs. Schools change the curriculum substantially to conform to local resources and equipment or instructional methods. For example, a carpentry program visited rewrote all the state curriculum into student "learning activity packets" (self-guided workbooks) to fit with their method of individualized instruction. The carpentry program also omits some of the skills in the state curriculum because the program does not have the equipment to teach these skills. Other programs change the curriculum to coincide with textbooks they wish to use.

Although each state's approach to developing competencies was somewhat different, this description of Oklahoma's experience serves to illustrate the time, energy, and resources that must go into a well developed competency system. From the experiences of this state and others, several important lessons emerge.

Flexibility to meet local needs is important. Each of the states studied has allowed flexibility to adapt to local conditions but has gone about it somewhat differently. In Oklahoma, the State Board of Vocational and Technical Education has adopted a policy that encourages, but does not force, the use of state competency-based curricula. Use is voluntary, but board policy states that schools must use either state instructional materials or appropriate substitutes. In most cases, instructors use the state materials when available; it is too expensive for schools to develop their own curricula. However, most schools do change the curricula, and local customizing has led to very diverse programs. Instructors review their curricula to make sure that all materials are current, and are encouraged to work with their local advisory committees to validate the curricula given the needs of local industry. Even if the state curriculum is updated every few years,

industry changes can make it necessary for instructors to change or add topics, skills, or procedures. Curricula are also often modified to conform to local resources and equipment. Certain skills must sometimes be omitted when a school does not have the necessary equipment.

Like Oklahoma, Colorado has not required the adoption of a single statewide model. There is strong local control in the Colorado education system, and localities enjoy considerable flexibility in deciding how to comply with the general state requirements for competencies. The state constitution prohibits the state from mandating the use of specific instructional materials or methods. Therefore, CCCOES cannot require institutions to use competency-based instruction or curriculum guides written by the state. However, the state can set program standards such as teacher qualifications and equipment standards. A list of competencies to be mastered in each program was added to the program standards. Many schools will shift towards competency-based instruction because it is the easiest way to document the mastery of competencies, even though the state will not dictate the form of instruction or curricular materials.

Vermont has recognized local differences by developing three types of competencies: core competencies, regional competencies, and optional competencies. Core competencies are those that every school will have to include in its curricula to secure state program approval; regional competencies are those that have been identified as critical for industries in some, but not all, regions of the state; and optional competencies are those that have been designated as desirable, but not essential for employment.

Minnesota is currently undertaking a major restructuring of its technical institutes, changing from full-day, full-week programs to a system of courses and credits based on competencies. Minnesota is in the process of developing relatively detailed state program and course guides for each program taught in at least two institutions. The use of the guides is voluntary. Schools qualify for state funds and technical assistance for the restructuring process. When they use the curriculum guides, schools must offer all the courses the state requires for the programs, but may

change up to 20 percent of the competencies that make up the state course content in order to meet local needs.

Without some kind of flexibility to meet local needs, states would have a hard time gaining local cooperation for state developed, competency-based curricula. In most states, curriculum has traditionally been under local control, and institutions tend to be wary of anything that suggests increased state control. Nevertheless, because competency-based education is widely supported, most local institutions are willing to use state-developed competencies if two important conditions are met: 1) they can adapt the requirements to meet local needs, which has just been discussed, and 2) they can participate in developing the competencies, to which we turn next.

Employer and instructor involvement throughout is critical. Validation of competency requirements by employers and instructors is a key part of the process followed by each of the states studied. While the specifics vary among the states, the general pattern has been for state staff (or state staff assisted by instructors) to do the initial groundwork in developing competencies, then to have state technical committees and instructors review, revise, and modify the competencies. Where appropriate, state licensing agencies have also been involved. Local advisory committees typically play an important role in modifying the competencies to meet local needs. This wide involvement is critical to developing appropriate competencies. Instructors are the ones finally responsible for teaching the material and therefore must be satisfied with it and feel some ownership. School administrators have been found to be more willing to integrate competencies into their programs when their own instructors have participated. Employers are the ones most aware of the skills needed by entry level employees, and their confidence in the training is an important indicator of program success.

Phasing in of competency-based curricula is desirable. Only one of the states we visited has a long history of competency-based vocational education—Oklahoma, which began in 1968. One

feature of this state's experience that bears notice is its strategic approach to curriculum development. Oklahoma did not set out to convert all programs at once to competency-based curricula. Rather, the state began by focusing attention on some of the largest programs and on programs for which there were existing state licensing requirements. Development has also been influenced by changing economic trends and legislative priorities. The other states studied are still in the process of developing competencies, but they, too, are going slowly.

As this review of the efforts of the various states to develop and implement competency-based approaches to training and assessing program outcomes has shown, a serious commitment to competency-based curricula and competency testing is a formidable undertaking. However, if such an effort is difficult, it is also apparent that it is possible. Far from being diversionary, such an effort maintains a constant focus on what students need to know. The next question is: how should we measure what they have learned?

Measuring Student Performance

If states are to use competency-based curricula to hold institutions accountable for teaching students job-specific skills, they need to find ways to measure student performance and establish performance outcome standards for vocational programs. At the present time, JTPA programs are farther along in this process than postsecondary vocational education. Los Angeles, for example, has instituted a very structured system to asses the skills of youth participants in the employment competency system. When participants enroll, contractors must administer an approved pre-test to identify their needs and document that they can benefit from training. On the basis of the results of this test, contractors develop individualized training plans that specify the services and training each participant should receive. After training is complete, the participant is tested again (using an approved post-test), and the measured gains are used to determine whether or not there has been a sufficient gain in skills to claim a positive termination.

It is worth noting, however, that Los Angeles has found job-specific skills (which is what postsecondary institutions teach) much more difficult to measure than pre-employment, work maturity, and basic skills. Assessing job-specific skills is often not best done with paper and pencil tests, but rather through demonstration on the job or in a simulated work environment. Contractors choose their own methods of assessing job-specific skills, but the test methods are subject to approval by the SDA.

Vermont has a similar emphasis on testing and measuring gains. However, staff offered a caveat to this emphasis on testing: one must beware of developing competency-based systems that become so preoccupied with testing that they alienate trainees and potential trainees. JTPA programs are often intended to be alternatives for students who have not adjusted will to the more conventional approaches to education and job training, and the more JTPA programs come to resemble traditional school programs, the less likely they are to reach the clients most in need of what JTPA offers.

At the postsecondary level, Oklahoma has begun to develop standard occupational tests for students to take after completing vocational programs. Once developed, the state board may be able to use student performance, as measured by these tests, to assess the effectiveness of vocational programs and hold schools accountable for the performance of their students by creating standards of expected pass rates for students completing each vocational program. The evaluation division has considered such standards but will proceed very carefully. The state education department warns that the variation in the ability and aptitude of entering students and in schools' access to local resources make it extremely difficult to develop appropriate standards.

In order to have successful performance standards one must carefully control for program "inputs." Inputs fall into three categories: the quality of instruction and instructional materials, school resources, and students. The quality of instruction is what standards should encourage schools to improve. Other school inputs vary a great deal depending on the degree of local

support for schools, including equipment (word processors or carpentry tools), and consumable resources (welding rods, nails and lumber, cooking ingredients, and other supplies students use in the course of classes). Local school administrators have limited control over these resources because they are constrained by their budgets. The final ingredient is the hardest for schools to control—the aptitude, ability, and interests of students. Although schools counsel students to enter vocational programs that fit their ability and aptitudes, some students choose programs for which they have little aptitude. Programs do not wish to deny entrance to any interested student, but the average ability of a vocational class will affect the success of students completing a program.

According to the assistant state director for evaluations in Oklahoma, performance standards can be fairly applied to programs if the amount of local resources and student ability are part of the formula for setting expected outcomes. Available equipment, classroom facilities, and consumable resources can be measured and included in a model of school performance. However, if not all schools have the equipment to teach students the skills on a standardized test, the students cannot be tested on those skills. Successful use of standards, therefore, requires that a minimum level of equipment and resources be available to students in all schools.

Measuring the aptitude and ability of students is more complex. To preserve equal access, schools must admit students who have relatively low chances of scoring high on post-tests. To control variation among schools in the aptitude of students, schools need valid, reliable indicators of student ability and aptitude. These indicators would be used as pre-tests for entering students. Reliable pre-tests would allow the state to hold institutions responsible for improving the skills and knowledge of their trainees, not for the entering skills of students.

Oklahoma has recognized the potential that the competency-based curricula hold for systematically developing state policies for competency testing and certification of skill

acquisition. Despite problems, the state is moving deliberately, albeit slowly and carefully, toward the development of performance-based accountability on a statewide basis.

Colorado plans to monitor program performance as minimum competency requirements are introduced, but presently has no such measures. To comply with new Higher Education Accountability Legislation (HB1187), each postsecondary institution must devise measures of value-added. No definition of value-added is specified, leaving to the schools responsibility for developing their own measures of student improvement. Because both the Accountability Act and the minimum competency rules allow institutions to plan their own student evaluation methods, however, it will be difficult to compare the performance of programs based on the student outcome information these laws generate.

Competencies and Value Added

Throughout this discussion, there have been numerous allusions not only to the desirability of competencies *per se* but also to the opportunities they present for measuring value added, a good measure of a program's real contribution rather than simply a measure of a participant's overall level of competency.

Competency-based curricula and competency testing lend themselves well to measures of value added, provided assessment is done at the beginning as well as the end of the program. There are, however, potential problems that need to be addressed. First, it is sometimes difficult to determine precisely what has been responsible for whatever value added is observed. For example, suppose that value added testing reveals significant gains in the math and science skills required for a particular occupation while participating in a vocational education program. If participation was limited to the vocational education program, these gains are rightly attributed to the program. However, if the student also participated in math and sciences courses outside the vocational education program, it will be difficult to sort out precisely what aspects of the postsecondary curriculum were responsible for the gains.

Second, while value added indicators of performance are less likely to encourage creaming (because programs get credit for skills they impart instead of for what students bring), one must question the value of gains that fall short of program completion. If by definition, completion represents the acceptable standard for entry-level employment, then anything short of completion is not likely to lead to employment. A special needs student may make great gains in a vocational education program on a value added measure, but if the student fails to complete, what really has been accomplished? Successful special education programs have addressed this problem not by accepting sub-completion accomplishment but by working with employers to redefine job responsibilities. They aim to define a job commensurate with the abilities of a handicapped student to perform it. In effect, they create a new kind of entry-level job and design standards of program completion that are appropriate for it. Students must still complete the occupational program, therefore, to perform effectively in this redefined job. In the final analysis, value added probably is not a substitute for program completion. Rather it is an additional indicator of program effectiveness that should be examined along with completion.

We have now devoted lengthy attention in this chapter to demonstrating that there is considerable experience in both JTPA and vocational education with development and implementation of competency-based approaches to employment training and vocational education. We have done so to emphasize that in these fields, much is known about how to define and measure learning outcomes. It is a point worth stressing, because for many years education researchers, indeed analysts of public policy generally, despaired of the lack of output measures by which to assess education. This nability to measure the results of education was a refrain heard so many times that it has become entrenched in the conventional wisdom about what is possible and not possible in formulating education policy. Competencies are far from perfect measures of programmatic results, but used with care and with attention to diversity among students, teaching styles, and local circumstances, they can provide valuable indicators of

program effectiveness. They deserve a major role in performance-based policies, along with labor market outcomes and a final set of outcome measures, student access.

C. ACCESS OUTCOMES

Federal vocational education policy has long emphasized access to quality vocational education programs for women, minorities, and students with special needs. Traditionally, efforts to monitor access to vocational education have concentrated on monitoring the numbers of different types of students enrolled in particular vocational education programs relative to their numbers in the larger postsecondary population. Thus, VEDS and the surveys of the Office of Civil Rights sought detailed data on enrollments in vocational education programs (by six-digit program codes) by race, by sex, by disadvantage, by limited English proficiency, and by handicap in different types of instructional setting. While the Carl Perkins Act discontinued the VEDS data collection and the Office of Civil Rights has conducted no recent studies, the Carl Perkins Act did call for the continued collection of enrollment data for handicapped students by handicapping condition and instructional setting.

While well intentioned, these efforts to monitor access have suffered from two major flaws, one conceptual and one methodological. Conceptually, using enrollments to monitor access diverts attention from the primary policy concern, that these students acquire the skills necessary to compete effectively in the labor market. Unless this more important aim is accomplished, access measured on the basis of program enrollment has little meaning. Methodologically, monitoring access has relied on program-based data collection efforts rather than course-based efforts, and the result has been a series of inaccurate, inconsistent, and generally chaotic attempts to arbitrarily assign students to vocational education programs. Future efforts to incorporate access into performance-based polices should correct both deficiencies.

Conceptually, concern about access should give priority to assessing access in terms of completion. Programs that are more successful at enabling students with special needs to

complete vocational education programs should be preferred to programs that simply succeed in enrolling large numbers of special needs students. Such an emphasis has important implications for how to structure funding in performance-based policies, a subject of Chapter Three.

Methodologically the collection of enrollment data at any given point in time should be in terms of courses rather than programs. A vocational education program is an organized sequence or cluster of courses. As one course can serve many different programs, it is impossible to determine precisely a student's program until most or all of the course requirements for a particular program have been satisfied. One must have longitudinal data on courses taken to make an accurate program assignment.

If *program* access continues to be the primary policy concern (and given that it is the program that determines occupational opportunities rather than a specific course, concern about program access is probably more appropriate), then monitoring access should rely on periodic collection of student transcripts, which will permit longitudinal analysis. Cross-sectional, point-in-time efforts to collect program data should be abandoned.

With these two major problems addressed, the remaining obstacles to including access outcomes in performance-based policies are largely definitional. Defining race and sex is straightforward, and while there remain some problems with the definitions of handicapping condition, a great deal of uniformity has been achieved (at least at the secondary level). With respect to other special needs categories, such as disadvantaged (academically or economically), limited English proficiency, and displaced worker, the definitions are much more fuzzy and subject to widely inconsistent interpretation. These difficulties suggest that performance-based policies should initially concentrate on access outcomes for targeted groups that can be clearly defined, adding others as more workable definitions are developed.

Conclusion

Defining and measuring labor market outcomes, learning outcomes, and access outcomes present some conceptual and methodological problems, but as this chapter has sought to demonstrate, these problems are not insurmountable. Nor are they very much different from many of the problems that have plagued policies more concerned with defining procedures and monitoring compliance with procedural requirements. During the last decade, states and localities have developed much experience with defining and measuring more performance-oriented outcomes of vocational education programs and employment training programs. Ideas about performance measures are no longer merely theoretical, abstract visions in the minds of academicians. Much progress has been made in developing real, concrete indicators and reasonable sources of data. While measurement problems continue to exist and much more progress can be made, measuring performance in useful ways is feasible and well underway in many places throughout the country.

CHAPTER THREE: LINKING PERFORMANCE TO FUNDING

The success of performance-based policies will depend in large measure on finding effective ways to tie performance to funding. While better definition and measurement of desired outcomes can improve general oversight and administration of vocational education programs, mere exhortation to excel on these measures is not likely to achieve much result. Rather, financial rewards for good performance, and possibly sanctions for poor performance, are more likely to focus attention on program performance and ways to improve it.

While tying performance to funding has a certain intuitive appeal, designing fair and effective performance-based funding arrangements is not easy. A number of important policy issues must be addressed. First, what should be the general relationship between funding and performance? Should resources be directed only to the stronger performers or should policy direct more resources to poor performers to strengthen their efforts? Second, at what level should performance be evaluated and compared—e.g., among states, school districts, schools, programs within schools, individual courses, or individual teachers? Regardless of how performance is measured, to whom should rewards be given and should any constraints be placed on the forms such rewards take? Third, who should administer performance-based systems—the federal government, states, particular agencies within states, or local schools and school districts? How much discretion should the administrators of these policies have over how performance is defined, measured, and rewarded? Fourth, what means for tying performance to funding—e.g., performance contracting, performance-based funds allocation formulas, eligibility requirements for student aid, etc.—should be encouraged and under what circumstances? What procedures will be used to determine that these procedures are designed fairly and with adequate technical expertise?

This chapter addresses these questions by analyzing three different types of performance-based policy: 1) performance contracting, 2) performance-based funds allocation formulas, and

3) performance-contingent student aid. It seeks to determine what can be learned from experience with these policies for considering different approaches to performance-based policies for postsecondary vocational education. The chapter concludes with a set of guidelines for crafting a federal performance-based policy for postsecondary vocational education.

A. PERFORMANCE CONTRACTING

Performance contracting in education is not a new idea. It has surfaced from time to time, but has never become popular. Campbell and Lorion note that during the fifteenth century, students at the University of Bologna required a professor to cover an entire textbook or else forfeit part of the funds due to him.[1] They also report that in 1862 Robert Lowe, vice president of Britain's Committee of the Privy Council for Education, introduced a "payment by results" plan for public elementary education. The plan quickly drew the wrath of the clergy, school inspectors, school masters, and Parliament, and Lowe resigned. Nevertheless, over the next thirty years, grants to English public schools were determined by a performance contract based partly on student achievement and partly on attendance.[2] Performance contracting was used in this country during colonial times, and during the early half of the twentieth century, many U.S. school districts decided to retain or fire teachers on the basis of students' test results.[3]

Performance contracting in education attracted much attention in 1970, when the Office of Economic Opportunity (OEO) sponsored an experiment to determine whether private contractors could teach students more effectively than public schools could. Although OEO sought to establish a rigorous experimental design, a number of problems plagued the experiment and undermined interpreting the results. The experiment lasted only one year, and there were significant start-up problems that may have biased the findings. Most analysts of the

---

[1]Ronald F. Campbell and James E. Lorion, *Performance Contracting in School Systems*, Columbus, Ohio: Merill, 1972.
[2]Edward M. Gramlich and Patricia P. K. Koshel, *Educational Performance Contracting: An Evaluation of an Experiment*, Washington, D.C.: Brookings, 1975.
[3]Campbell and Lorion, *op. cit.*

results of the OEO experiment concluded that performance contracting was not successful.[4] Only one of the six private contractors obtained better results than the matched public school, and several experienced worse attendance records.

The conclusion that performance contracting cannot work in education may have been made prematurely. Friedman notes that the OEO experiment lasted for much too short a time and that the fact that one out of the six firms succeeded in out-performing the public school received too little attention.[5] Why that one firm succeeded and whether its accomplishments could have been replicated elsewhere were never analyzed. Instead, the results of the experiment were widely publicized as demonstrating that performance contracting was not effective, and the initial enthusiasm that had developed in a number of school districts quickly died.

More recently, performance contracting has become a central feature of the Job Training Partnership Act (JTPA) and other employment training programs. While not mandated for JTPA, performance-based contracting has become very popular with local service delivery areas in the last few years. It has also been used in other employment training programs. For example, in California, the Employment Training Panel (ETP) relies entirely on performance contracts with community colleges, area vocational schools, proprietary schools, and community-based organizations to train displaced workers and workers who are in danger of losing their jobs unless they acquire new skills.

To learn more about performance contracting in employment training programs and its implications for vocational education, we examined both JTPA and ETP programs. In particular, we were interested in understanding how these programs have addressed a number of problems that critics of performance contracting claim prevent successful implementation.

---

[4]For example, Gramlich and Koshel, *op. cit.*
[5]Lee Friedman, *Microeconomic Policy Analysis*, New York: McGraw Hill, 1984.

These include:

- *Negative connotations*. In some ways, performance contracting suggests that the service provider cannot or will not perform the very function for which it is organized in the absence of strong financial incentives. Particularly for established institutions, a shift to performance contracting implies a past failure to deliver adequate training.

- *Narrowness of objectives*. Performance contracting, by definition, requires that program objectives be clearly specified and quantifiable. The need for clarity and specificity, it is argued, leads to defining objectives too narrowly and concentrating the efforts of the program on these narrow aims at the expense of other important but more ambiguous goals.

- *Preoccupation with ends*. The primary strength of performance contracting, an emphasis on outcomes, can become a major weakness. Temptations to "cream," to "teach to the test," and to adopt other questionable practices merely for the sake of appearing to improve performance are greatly increased by performance contracting.

- *Measurement problems*. Performance contracting depends on being able to measure performance in a clear, accurate, unbiased fashion. In reality, good measurement is often difficulty to do. Appropriate tests ar not always available, or test results may be difficult to interpret. Data collection may be costly and difficult.

- *Pricing issues*. Performance contracts typically require providers to risk not fully recovering costs in return for higher profits if performance is delivered as promised. Incentives must be adequate but not lavish; performance expectations must be reasonable.

- *Unknown providers*. At the outset of an effort to introduce performance contracting, ofter little is known about prospective contractors. Many potential contractors have no established track record, and it is difficult to assess whether they will, in fact, be able to deliver what they promise. Failure, of course, usually means they will not be paid some or all of the contracted amount, but even if failing contractors are paid nothing, there are substantial costs in terms of students' wasted time.

Job Training Partnership Act (JTPA)

Performance has been the watchword of JTPA from its outset. Replacing the much maligned CETA legislation in 1982, JTPA was billed as a no-nonsense, outcome-driven training program for the disadvantaged—a first of its kind, efficiently funded, and relying on the increased involvement of the private sector to keep it focused on the bottom line. Curiously, while JTPA established a system of performance standards and rewards based on results, performance contracting per se was never mentioned in the act. Nevertheless, during the last three or four years, performance contracting has been widely adopted throughout the system and has become the primary contractual tool in many Service Delivery Areas (SDAs), the basic organizing unit of JTPA. To learn more about the experience of JTPA with performance contracting, we visited several SDAs around the country. We also commissioned a paper and a small survey of SDAs to determine how widely performance contracting was used, why, and with what results.

While JTPA established performance standards as the primary means of accountability for the program, it left states and localities a great deal of discretion in implementing this system. SDAs were free to organize and operate their own training programs "in-house," or they could make arrangements with other local agencies and institutions such as community-based organizations, community colleges, and proprietary schools. If SDAs decided to contract out training, there were no requirements that they do so in any particular way, but regardless of how they chose to organize the training, the SDAs would be held accountable to measures of placement, welfare reduction, cost per placement, and average wage at placement. Although performance contracting is a natural extension of accountability from the SDA to its agents, performance contracting was by no means an inevitable development. Nor was it anywhere required by law or regulations.

It is, therefore, testimony to the appeal of performance contracting that this practice has swept through what, from an operational perspective, is a rather decentralized, diverse system.

A recent survey of 100 SDAs in 12 states found that over 80 percent of the SDAs were using performance contracting, procedures that tie all or a part of payments for training to achieving specified levels of performance on negotiated measures of performance.[6] Why has performance contracting become so popular in JTPA? For what is it used? What are its pros and cons?

Why Performance Contracting?

SDA officials who have adopted performance contracting typically offer two main reasons. First, performance contracting is a management tool. Fifty-eight percent of the administrators surveyed by Erik Butler cited better accountability as one of the reasons they used performance contracting. It directly translates the performance standards by which the SDA is held accountable by the state into measures for evaluating and compensating whoever delivers the training services. Performance contracting, therefore assures the SDA that its contractors understand and will work to achieve the same objectives that will determine the success or failure of the SDA.

Second, performance contracting under JTPA has been an ideal means for *appearing* to minimize administrative costs, and almost 60 percent of SDA administrators cited this as one of their reasons for opting for performance contracting. JTPA places a limit of 15 percent on the percentage of JTPA funds that may be used for administration. SDAs have struggled to stay within this limit and have found it particularly difficult to achieve when programs are run and administered in-house. Through performance contracting, SDAs have in effect been able to transfer some of the costs of program administration to their contractors and bury this in the performance contract. The entire cost of the performance contract may be counted as training services and is, therefore, not subject to the 15 percent limit. It is possible that there is some

[6]Erik Payne Butler, *The Search for the Bottom Line in Vocational Training: What Lessons are Offered by the Job Training Partnership Act?*, unpublished paper commissioned by MPR Associates, 1988.

real reduction in administrative costs from performance contracting. By relying on existing community-based organization, community colleges, and other local training providers, an SDA avoids recreating and duplicating services and the administration that must inevitably accompany them. It is impossible to tell, however, how much of the reduction in administration produced by performance contracting is real rather than apparent.

Interestingly, only 40 percent of the SDA administrators said that better training was one of the benefits of performance contracting, and only 37 percent cited better placement—one of the primary performance measures to which the programs are held accountable. Only 6 percent cited better recruitment, perhaps not a surprising result since most of the SDAs retain major responsibility for intake and determining eligibility, functions that they are in good positions to perform. From our review and site visits, however, there is as yet little hard evidence that performance contracting improves the quality of training or its effectiveness. It well may, but no one really knows.

For What is Performance Contracting Used?

Over 80 percent of the SDA surveyed by Erik Butler said they had one or more performance contracts. Seventy-three percent said they had performance contracts for classroom-based vocational training, 53 percent for pre-employment/work maturity skill training, 50 percent for basic education, 48 percent for on-the-job training, and 32 percent for job search assistance.

SDAs, then, appear to be most comfortable with performance contracting when it is used to obtain classroom-based vocational training, probably because this kind of service is the easiest to obtain through other service providers. Classroom programs in community colleges and community-based programs are long established, and it makes little sense for SDAs to duplicate these.

What are the Disadvantages of Performance Contracting?

As popular as performance contracting has become in JTPA, SDA administrators acknowledge that it is not free of problems. There are three frequently cited drawbacks to performance contracting: 1) creaming, 2) excessive concern with numbers, and 3) the timing and level of reimbursements.

From the very start of JTPA, the new emphasis on performance raised widespread concerns about incentives to screen out clients who were the least likely to succeed in training programs and admit only those who were the most likely to enable programs to accomplish their performance objectives. There are without doubt incentives to cream, and there is some evidence that JTPA may overemphasize quick results, inexpensive placements, and selecting clients most likely to benefit from training.[7] However, given the eligibility requirements of JTPA, concerns about creaming may be overdone. Anu individual eligible for JTPA has relatively low income and levels of sill. Moreover, it is not performance contracting *per se* that leads to creaming but rather the way the performance objectives are defined. It is easy to imagine how one could structure a performance contract to ensure that more difficult-to-train, harder-to-place clients were admitted to training programs. Performance contracting can be a means to many ends.

Defining the ends, then, is the more serious issue, and on this score performance contracting in JTPA raises some more troublesome problems. SDA administrators cite a tendency to become preoccupied with the numbers, churning people through the system to meet placement performance standards with inadequate attention to the quality of programs and longer term benefits for participants. That JTPA places high percentages of its clients in jobs is indisputable. Less is known, however, about how long the jobs last, how effectively participants have been trained, or how generalizable the skills they acquire in JTPA are to other

[7]Grinker Associates, Inc., *An Independent Sector Assessment of the Job Training Partnership Act*, New York: Grinker Associates, Inc., July 1986.

jobs they may encounter during their working lives. Moreover, with the exception of youth programs where competencies have figured prominently in JTPA, programs have generally ignored developing measures of value added. Partly, this failure reflects the difficulty of devising good competency-based training curricula, but also it reflects a resistance to divert attention from "the bottom line"—employment.

Finally, performance contracting creates high risks and serious cash flow problems, sometimes for agencies that are not in strong positions to cope with such strains. Since part or all of the payments are not received until after clients complete programs and are placed, service providers must front money to cover considerable expenses. Moreover, they do so with considerable risk that unless they meet the performance objectives, they may not be paid at all. It is, of course, such prospects that lend performance contracting its power; the costs of not performing are high and the benefits of success are great. Nevertheless, the all or nothing features of some performance contracting may dissuade effective trainers from participating in JTPA and may encourage those who do participate to adhere mindlessly to performance criteria, cream, or otherwise dilute the quality of their programs.

Implications for Federal Vocational Education Policy

The evidence on JTPA to date indicates that it is possible to design performance-oriented policy that leaves local administrators considerable discretion as to how best to accomplish performance objectives. Indeed, it is probably JTPA's emphasis on performance and accountability that has so vastly improved its public image compared to the earlier CETA program, generated more serious involvement by business, and focused programmatic attention on outcomes rather than inputs and procedures. Moreover, it is clear that performance contracting has been an effective tool for achieving consistency in objectives and keeping service providers focused on the aims of the program.

There are, however, important differences between JTPA and vocational education. JTPA typically fully funds its training programs and does not have to rely on additional state or local assistance. Thus, the federal policy is perceived as having a stronger claim to establishing the ground rules under which the program operates. In contrast, federal money usually accounts for less than ten percent of spending for vocational education, and states and local governments, justifiably, demand a greater say in how vocational education will operate. Similarly, to trade on the retort of the year, the Department of Education is no Department of Labor. While the Department of Labor can maintain a strong hold on the administration of JTPA, the Department of Education must recognize the prerogatives of state and local education agencies, most of which are accountable to their own independent (and often elected) governing boards. Given the fiduciary responsibilities of state and local school boards, it is difficult to see how something like the equivalent of a Private Industry Council (PIC) could enjoy the same kind of power over federal vocational education funds as the PICs do over JTPA.

Nevertheless, if viewed merely as a tool to accomplish certain ends, performance contracting may still hold promise for vocational education. To better understand experience with performance contracting in another setting, we examined the recent history of the Employment Training Panel, a state training program in California.

California Employment Training Panel (ETP)

The California Legislature created the Employment Training Panel (ETP) in 1983 in response to concerns that the changing world economy and the introduction of new technologies were causing workers to lose their jobs. ETP focuses on the specific needs of the economy and supports training and retraining that improves productivity and competitiveness and promotes security of employment for California workers. Under this program up to $55

million a year can be allocated to training programs operated by employers or public or private training agencies.

Several features distinguish the ETP program from other employment training programs. First, the ETP program uses fixed-fee performance contracts exclusively. ETP reimburses the training agency at a fixed amount per trainee if and only if the trainee successfully completes the training and is employed by a single employer for 90 days. There are no partial reimbursements for trainees who drop out of training or who do not get and keep jobs.

Second, training is linked to specific jobs rather than to general labor market needs. Proposals for contracts may be initiated directly by an employer or a group of employers, by a training agency, or by a master contractor—an organization (the State Department of Education, for example) paid to provide marketing and outreach services. Proposals must include, among other things, a list of employers who will hire successful completers and signed agreements that they will participate in the development and operation of the program; a statement of the need for and purpose of the training; a description of the skills required for the jobs; a schedule and plan for conducting the training; and the fee that will be paid by ETP.

Third, the program is limited to individuals who are receiving (or have recently exhausted) unemployment benefits or are in danger of being laid off and becoming unemployment insurance recipients. In other words, individuals who have never been employed or who have not been employed long enough to earn unemployment benefits are not eligible. This limit on participation is the result of the funding source—a surtax on employer payments to the unemployment insurance fund.

For programs training unemployed workers, contractors are responsible for recruiting trainees and are free to select whomever they wish from the eligible pool. They work with EDD offices to identify potential participants and do direct mail and newspaper advertising. For programs involving retraining of workers in danger of losing their jobs, the employers (and

unions, sometimes) select participants from among their own workers. Program regulations require contractors to describe in their plans efforts they will make to recruit women, minorities, the disabled, and veterans.

Program Results

The ETP program started slowly. During the first two years of full operation, the number of individuals who had actually completed training and been employed for 90 days was only 8.6 percent of what was planned.[8] As a result, a large proportion of the appropriated funds remained unspent. As experience with the program grew and administrative deficiencies were corrected, the level of activity increased, and in 1986-87, placements were 65 percent of planned. In addition, demand for ETP assistance exceeded the supply of available funds for the first time. The average cost per person trained was $2,061.[9]

An evaluation conducted by the Training Research Corporation for the Employment Training Panel, concluded that the ETP program efficiently moved unemployed workers into new jobs and enhanced the productivity of potentially displaced workers.[10] It found that the program had a positive effect on earnings and that it reduced unemployment for participants.

The Training Research Corporation study also concluded that most types of training agencies appear to be able to succeed at performance contracting. Not all types have been equally successful, however. The table below shows the placement rates for participating agencies between 1983 and 1985. Private nonprofit agencies had the highest completion and placement rate (65 percent) for new-hires, and private employers had the highest rate for retrained workers (80 percent).[11] Community colleges had the lowest placement rate (23

---

[8]Legislative Analyst, *A Review of the Employment Training Panel Program (Pursuant to CH 1074/82)*. Sacramento, California, April 1986, p. 20.
[9]Employment Training Panel, *Report to the Legislature*, Sacramento, California, 1987, p.14.
[10]Richard W. Moore, Wellford W. Wilms, and Roger E. Bolus, *Training for Change: An Analysis of the Outcomes of the California Employment Training Panel Programs*, Report submitted to the Employment Training Panel, January 1988.
[11]Ibid., p. 20-21.

percent) for new hires, while proprietary schools had the lowest placement rate for retrained workers (16 percent).

Type of Training Provider	*% Employed 90 days* *New hires*	*Retrained*
Private nonprofit	65	70
Private employer	61	80
Proprietary school	51	16
Local school district	41	74
Community college	23	55
Overall	51	64

The major criticism that has been levied against the ETP program is that the Panel has subsidized normal employer training costs—in other words, paid for retraining of employees who were not truly in danger of being laid off if ETP did not provide training funds. The Legislative Analyst's report, which made this charge, came to this conclusion after interviewing employers. It cited as an example an aerospace firm with a contract to train machinists in the use of computer-controlled machining equipment.[12] Because there was a shortage of skilled machinists, the evaluators were very skeptical of the claim that the firm would have laid off its experienced machinists and attempted to hire even more experienced ones if they had not received ETP funds. The Legislative Analyst thought it much more likely that the firm would have provided training at its own expense to the machinists already in its employ.

Issues of the appropriate use of public funds aside, as an experiment in performance contracting, the ETP program has been successful. What follows are some general observations about what has made performance contracting work in the ETP program and a discussion of the implications for performance contracting in postsecondary vocational education. These observations are based on interviews with state-level administrators of the

[12]Legislative Analyst, *Op. Cit.*

ETP program and site visits to four contractors—three community colleges and one regional occupational program with a large adult education program.[13]

Why Performance Contracting has Worked

Performance contracting is risky, especially in the case of the ETP program, where the criterion for success is so strict. It has not worked well for all contractors. Nevertheless, many have been able to make it work. Described below are factors that have contributed to ETP's being able to attract contractors and contractors being able to operate successful programs.

Clear goals and measurable outcomes. The goals of the ETP program are clear: to place unemployed workers in good jobs with long-term career potential and to keep employed workers whose jobs are threatened because they lack the necessary skills. No other outcome is acceptable. The ETP program is narrowly focused on teaching job-specific skills that have been identified as important by employers who are committed to hiring (or retaining) the completers. Contractors are expected to teach trainees only those skills. Expectations are very clearly spelled out—the proposal for funding must include a schedule for the training and a plan for conducting the training that describes what will be learned and how. Contractors accept placement and retention on the job for 90 days as the appropriate criterion for success and are willing to participate on these terms. If the goals were less specific, or if there were multiple goals with unclear priorities, or if the measures of success were less clearly related to the goals, getting contractors to participate would be much harder.

Data collection on outcomes is easily accomplished. Contractors need only keep track of placements and verify with the employers that the trainees are still employed in the same place 90 days later. None of those interviewed found the data collection a problem. Only very rarely did a trainee "disappear." On a random basis, employment status is verified at the state-level using unemployment insurance records.

[13]Proprietary schools have not played an important role in the ETP program, and none currently have programs.

Involvement of employers. The employers who will eventually hire the completers must be identified before the contract is awarded. The employers not only are allowed, but are ***required***, to assist in the development and operation of the program. Employer involvement goes much beyond the advisory committees that typically meet once or twice a year to provide advice on vocational education programs. In the ETP program, the employer shares decision-making authority with the training agency. With such a structure, there should be no questions at the end of the program whether or not the trainees have the appropriate skills, which makes placement more certain and participating much less risky for contractors.

The training contractors that have been the most successful devote a great deal of time and energy to identifying employers and developing good relationships with them, and believe strongly that this effort has contributed to their success. While some contracts involve only one large employer, many involve groups of small or medium-sized employers. For example, one community college we visited conducted a computer-assisted design course for 200 architectural firms. Many word-processing and office automation programs also involve a large number of small employers.

Nature of the population served. As indicated above, participation in the ETP program is limited to individuals who are receiving (or who have recently exhausted) unemployment benefits or are in danger of being laid off and becoming unemployment insurance beneficiaries. In other words, only individuals who have been employed or who have been employed long enough to earn unemployment benefits are eligible. These individuals have already demonstrated that they have general job-readiness skills—in fact, many of them are already employed—and are thus much lower risks on average than the populations typically served by job training or vocational education programs. Those program directors interviewed who had experience with CWETA or JTPA training programs remarked on the enormous difference in the job-readiness of the populations served.

One community college provided an example of a "low risk" group served. The college developed a seven-month retraining program for workers laid off when an auto plant closed. The program trained participants in microwave technology, and was successful largely because the trainees were the "cream of the crop." They were all in their thirties or forties, they were secure in their training situation because they had received severance pay, they were highly motivated to find jobs, and most had many years of work experience. In addition, the job market for microwave technicians was good. s a result, 16 out of the 17 persons enrolled were placed and retained in jobs for at least 90 days.

All the contractors we visited screen prospective trainees for new-hire programs very carefully. They test them for basic reading and math skills and interview them to assess their ability to complete the program and their employability. Only those expected to succeed are accepted, and poor performers are terminated if necessary; the programs cannot afford to take chances or waste resources on trainees who will obviously not be successful. The contractors also reject candidates with too many skills on the grounds that they are likely to leave the program for a job before the end, in which case the contractor would not be paid for that person.

Program regulations require contractors to describe in their plans efforts they will make to recruit women, minorities, the disabled, and veterans. These plans are evaluated during the selection process, but once a contract has been awarded, the contractor chooses the participants.

Focus on short programs. Although the law permits training programs to last as long as 18 months, the average program for retraining workers is only 234 hours, and the average program for the unemployed is only 503 hours (only about 3 months for a eight-hour per day program). One reason that contractors have preferred shorter programs is that it is easier to get employers to keep their commitments to hire graduates. Training agencies cited instances of

employers who were willing at the start to hire trainees changing their minds before the end of the training period, forcing the agency to find other placements.

Emphasis on retraining. Programs for retraining workers already on the job are much less risky than programs for the unemployed. A worker already on the job who has showed interest by agreeing to participate is very likely to complete the training and remain on the job for 90 days. The mix of training for the unemployed versus retraining has shifted during the life of the ETP program. Whereas 55 to 60 percent of the participants were unemployed in 1983, 85-90 percent of the participants are now workers being retrained. Of the individual training projects approved by the Panel as of June 30, 1987, only 27 percent were for the unemployed, compared to 53 percent for retraining; 20 percent included both.

The emphasis on retraining is not entirely attributable to the lower risk, however. Also contributing is the difficulty experienced by many contractors in recruiting trainees for new-hire programs. Among the causes of this problem, which has existed since the inception of the ETP program, are low unemployment rates in many parts of the state and the eligibility requirement. Because only individuals who are receiving unemployment insurance (or have recently exhausted their benefits) are eligible to participate, ETP's executive director estimates that only one-quarter to one-third of the unemployed are eligible for new-hire programs.

Commitment of resources to placement and support services. Each of the training agencies visited had made a heavy commitment of resources to placement. There was no assumption that simply teaching workers the right skills would guarantee them jobs. Rather, it was taken for granted that people need help in locating opportunities and interviewing for jobs, and full-time counselors, or "employment specialists" were hired to provide this help. In two of the programs, the contractors conducted classes in job search skills, helped trainees with their resumes, and sponsored job clubs. In addition, the employment specialists followed up after placement to make sure everything was going smoothly.

One community college visited achieved a 100 percent placement rate for one new-hire contract, and claims to have the best contract results of any training agency in the state. The director attributes this record to the resources they invest in support services and placement. They operate on the principle that the more attention paid to students, the better the placement rate will be. Attendance at class is mandatory, and if a trainee misses a class, a staff person calls the next day to find out why. Saturday tutorial sessions are conducted for students who have missed classes or need extra help. For new-hire students, the college provides extensive support during the job search process, including instruction in interview skills, help in getting interviews, and videotaping of real interviews. College resources such as child care services and libraries are made available to ETP participants. The director attaches great importance to the "personal touch," and believes that it makes the difference between a 60 percent and 100 percent placement rate.

Implications of the ETP Experience for Vocational Education

Should postsecondary vocational institutions become involved in performance contracting? There are important differences between ETP and postsecondary vocational education that would make it difficult to institute performance contracting as formulated for the ETP program. First, the ETP program has a much narrower focus than vocational education. ETP trainees are taught only those skills needed to obtain or continue to hold a certain job. In contrast, students in postsecondary vocational education programs have to meet general education requirements. They are encouraged to explore alternatives and even to change their majors if desired, while ETP trainees are focused on a particular set of identified jobs. Therefore, while placement as the criterion for success is easily accepted for ETP programs, performance contracts for vocational education would have to have multiple criteria, and what these criteria should be and how they should be weighted would be hotly debated.

Second, the target populations are different. The ETP program serves only individuals who have held jobs or who are in danger of losing them. In addition, contractors can be selective about who they admit to training. Postsecondary vocational education, on the other hand, serves a much broader group, including a large number of students who enter directly from high school and have never held a job. Most postsecondary vocational educational institutions are committed to providing access to all students who have a chance of succeeding, and make special efforts to include the disadvantaged. Performance contracting, at least as formulated for ETP, would provide a disincentive to enroll the disadvantaged and might lead to "creaming."

Third, employers (and sometimes unions) work directly with ETP staff to select trainers, trainees, curriculum, method of training, and standards for successful completion. In vocational education programs, employers are normally involved only as members of an advisory committee that meets a few times a year. In addition, vocational education curricula are not designed to meet the needs of individual employers. Indeed, most programs resist catering to the needs of individual employers and try instead to prepare students for a more general labor market. Training for specific jobs is considered the responsibility of employers, not educational institutions.

Despite these differences, there are some important lessons to be learned from ETP's experiences, and there do seem to be some opportunities for at least limited use of performance contracting in vocational education. One possibility would be not to make all vocational programs subject to performance contracting, but to limit it to certain ones that lend themselves to placement as the criteria for success. For example, vocational education programs that lead to state licenses may be good candidates for performance contracting. Similarly, some vocational education programs in community colleges, such as office automation and computer assisted design, are aimed primarily at retraining, and these may also be appropriate for performance contracting.

While it would not be appropriate to build performance contracts around placement alone in vocational education, it is certainly possible to envision other types of performance contracts. Possibilities include contracts with multiple measures of performance, partial payments for meeting certain levels of achievement, or increased payments for serving disadvantaged students.

Performance contracting could also be implemented so that an institution's performance is measured rather than a single program's. Such an approach would make it feasible for institutions to undertake risky programs along with ones that are highly likely to be successful.

B. PERFORMANCE-BASED FUNDS ALLOCATION FORMULAS

In recent years, mathematical formulas have become increasingly popular for distributing general purpose and categorical funds to eligible recipients. The Carl Perkins Act specifies the formula to be used to allocate the handicapped and disadvantaged setasides. and while it does not require funds affected by other parts of the legislation to be distributed by formula, many states have adopted formulas of their own. Additionally, a few states use formulas to allocate state categorical aid for vocational education.

Typically, these formulas distribute funds based on various measures of program inputs. For example, the Perkins Act requires that half of the handicapped setaside is to be allocated to eligible recipients based on each recipient's percentage of students statewide who are economically disadvantaged, and half is to be based on the percentage statewide of handicapped students served in each recipient's vocational education programs. The law bases the distribution of half the disadvantaged setaside on relative shares of economically disadvantaged students enrolled in each eligible recipient and half on relative shares of economically disadvantaged and individuals with limited English proficiency served in vocational education programs.

Federal law uses these simple measures of headcount and does not attempt to distinguish the varying amounts of time different students spend in vocational education. State distribution formulas, however, more often base allocations on some measure of full-time equivalent (FTE) enrollment or average daily attendance (ADA). They may also assign different weights to different categories of students (different types of handicapping conditions, for example) to reflect the different costs associated with teaching different students. Similarly, they may weight enrollment in particular vocational education programs to acknowledge that some programs are more costly, on a per ADA basis, to operate than others.

All of these formulas, however, use *inputs* to determine levels of funding. Only a very few states include output measures in their funds distribution formulas. Florida, for example, has established minimum placement standards for continued funding; programs that do not place at least 70 percent of their students are not eligible for refunding. Tennessee bases five percent of its state aid for higher education on six measures of performance (described below). Connecticut recently became the first state to allot general aid to school districts based partly on deficiencies in student test scores.[14] Unlike performance-based funding in Tennessee, Connecticut's program directs more money to those with the lowest scores.

To learn more about actual experience with performance-based allocation systems, we examined in more depth the history of Tennessee's postsecondary performance funding system. This system, which began in 1979 and had been in the planning stages for almost seven years previously, is by far the oldest performance-based funds distribution system in education. Thus, with almost ten years of experience in operating this system, Tennessee seemed a likely source of useful information on the prospects of adapting such an approach to vocational education.

---

[14]Robert Rothman, "Test Scores Tied to State Aid in Connecticut Plan," *Education Week*, Vol. VII, No. 11, November 19, 1987, p. 1.

Performance-Based Funding in Higher Education in Tennessee

In 1979, The Tennessee Higher Education Commission (THEC) began implementing a new approach to funding the state's public colleges and universities. Henceforth, up to five percent of an institution's annual state allocation for instruction would be awarded based on performance.[15] Tennessee has adopted performance standards in six areas: 1) program accreditation, 2) major field assessment, 3) undergraduate general education outcomes, 4) alumni satisfaction surveys, 5) corrective measures, and 6) developing and piloting of assessment instruments.[16]

In July 1988, we visited the state capital and three local colleges and universities. We wanted to know more about how the system worked, what kinds of problems had been encountered, what solutions had been attempted, and how state and local personnel perceived the effectiveness of the performance-based funding.

How is the Performance-Based System Structured?

In Tennessee, higher education institutions may earn a supplement to their annual budget of up to 5 percent of their regular operating budget, based on how they score on standards developed in six areas of institutional performance. Out of a possible total of 110 points, each institution may earn 20 points for program accreditation, 30 points for major field assessment, 20 points for undergraduate general education outcomes, 15 points for alumni satisfaction surveys, 15 points for corrective measures, and 10 points for developing and piloting

---

[15]At the outset, performance funding was limited to 2 percent of general expenditures but this limit was subsequently increased to five percent.

[16]The number, content, and score of the standards have changed over time. Initially, performance funding standards were somewhat more process-oriented, encouraging institutions to implement the planning and assessment procedures that would make performance funding possible. As these procedures were implemented, standards became more outcome-oriented. For an excellent description of the history of performance funding in Tennessee, see Trudy W. Banta and Home S. Fisher, "Performance Funding: Tennessee's Experiment," in J. Folger (ed.), *Financial Incentives for Academic Quality*. New Directions for Higher Education, No. 48, San Francisco: Jossey-Bass, December 1984, pp. 29-41.

assessment instruments. An institution scoring a full 110 points would receive the entire 5 percent supplement. The supplement is prorated for institutions scoring fewer than 110 points. For example, a score of 80 would entitle an institution to 72.7 percent (80 ÷ 110 = .727) of the 5 percent supplement; a score of 55 would earn 50 percent (55 ÷ 110 = .50) of the 5 percent supplement. In practice, only a few institutions have received the full five percent, and all have received something.

Participation in the system is voluntary, although all eligible public universities, community colleges, and technical institutes in Tennessee participate. To not participate would invite embarrassing questions from local governing boards, as well as the press and public at large. Hence, institutions dissatisfied with the system channel their energies into modifying the performance standards in ways they deem more appropriate, rather than opt out altogether.

THEC is responsible for developing the performance standards and does so in consultation with local institutions. Local institutions enjoy some discretion in implementing certain aspects of the standards and performance-measurement process, but local administrative decisions of this type require approval by the local governing board. In some instances, approval by the state board or THEC staff is required. Additionally, the Executive Director of THEC may, for good and reasonable cause and with concurrence of the state governing board, authorize modifications to the standards. Such modifications, however, must be applied uniformly to all institutions.

How is Performance Defined and Measured?

Institutions receive a score in each of the six standard areas. The procedures for computing this score are in some instances simple and quick; in some cases, the procedures are tedious and differ for different types of postsecondary institutions.

Scores for program accreditation are easy to determine. To qualify for a minimum score of 10 points, at least 65 percent of an institution's programs eligible for accreditation must in fact be accredited. An institution will earn 13 points if from 74 to 81 percent of its eligible programs are accredited, 15 points if from 82 to 85 percent are accredited, and an additional point for each additional 3 percent gain in the percentage of eligible programs accredited.

In contrast to the procedures for determining accreditation points, the procedures for scoring the major field assessment are quite complex. Procedures are different for universities and two-year institutions. Of a maximum of 30 points for this standard, a maximum of 20 points may be earned based on the performance of graduating students on approved undergraduate major field tests, and a maximum of 10 points may be earned based on an external review of master's programs. Scores for performance of graduating students are based both on the percentage of students scoring above the national mean and on the extent of improvement over previous student performance. The external review of master's programs is based on an external review by a qualified consultant, who must be approved by THEC staff, to determine whether or not the institution has met objective standards established by the Tennessee Council of Graduate Schools in each of ten categories, including screening and supervision of students, core curriculum, comprehensive examination, and research.

For the two-year colleges, scoring for the major field standard carries a maximum of ten points for student performance relative to the national mean and the extent of improvement over the previous year's scores in programs leading to a license or certificate, ten points for similar performance in other major fields, and 10 points for placement. With respect to placement, a program is considered successful if it achieves a placement rate of 75 percent or better in fields related to training. To receive any points under this standard, at least 60 percent of a two-year institution's programs must have achieved this 75 percent placement rate, in which case 5 points are awarded. Institutions with from 70 to 79.9 percent of its programs achieving this

rate receive 7 points, from 80 to 89.9 percent 9 points, and 10 points when over 90 percent of its programs achieve this 75 percent placement rate.

The standards for undergraduate general education outcomes award a maximum of 20 points based on an institution's mean value-added between entry and exit scores on the ACT COMP test and on the mean score of its students relative to national norms. All baccalaureate- and associate-level students are tested, unless the number of students exceeds 1,500, in which case the institution may test a statistically representative sample of 1,500 students.

The maximum of 15 points awarded for alumni satisfaction is based on surveys conducted every other year of all undergraduate alumni who graduated two years before the year in which the survey is conducted. Institutions are required to use an "evaluative survey," which is defined as one yielding quantifiable indices of satisfaction with instructional programs and academic support services. Institutions are free to design their own survey instruments, but these must be approved by THEC staff and must remain in force for three successive surveys. Points are automatically deducted for response rates of less than thirty percent.

The fifth set of standards awards a maximum of 15 points for evidence that an institution is taking corrective measures to address deficiencies in performance on standards II, III, and IV. Finally, the sixth standard area awards 10 points as an incentive to an institution or group of institutions to develop and pilot assessment tools and other tests that have not yet been approved for use in the performance funding system. Five points are awarded for development and five points for piloting and testing.

In sum, Tennesee's performance standards employ measures that vary considerably in their degree of objectivity, ease of measurement, and cost of collecting, maintaining, and reporting required data. The regulations explaining the procedures and definitions of relevant terms, while relatively easy to follow, nevertheless fill thirty-three single spaced pages.

Considerable effort by both state and local staff has been devoted to modifying and refining these provisions over the state's nine year history with performance-based funding.

Has Performance-based Funding Made A Difference?

From 1980 to 1988, Tennessee has provided an additional $84 million to its public higher education institutions through performance-based awards. Additionally, considerable staff time at both the state and local levels has been devoted to designing, implementing, and refining the funding system. What evidences is there that all of this effort has had any impact?

Several local officials indicated to us that they were initially skeptical about the desirability of the system. Performance funding was seen as an irritant that many local administrators and faculty wished would go away. As it became apparent that the state was serious about continuing to implement the program and as the comparative indicators of individual institutional performance became more widely known through the press, local institutions began to take performance funding more seriously. Enrollment declines at one of lowest scoring institutions, for example, forced this campus to look seriously at what it was doing.

The local officials we interviewed all reported positive effects. One community college reported that performance funding forced it, for the first time, to systematically examine what happened to its students after graduation and how students assessed their educational experience at the college. As the result of student follow-up prompted by performance-based funding, this college devoted greater resources to student services, especially financial aid administration. It inspired efforts to seek additional community support for offering "honor scholarships" to attract more top students and keep them enrolled to graduation. The college also undertook a revamping of its allied health curriculum and testing. It cut its student/teacher ratio and introduced new health registry exams. As a result, the rate of attrition dropped 50 percent in its nursing program.

At one of the state universities, performance funding led to an institutional self-examination that identified needs to improve admissions, advising, and student services. It sparked a reassessment of the curriculum, producing a new experimental core curriculum in which the performance of students in the new core curriculum was systematically evaluated against that of students in the regular curriculum. The college also strengthened efforts to increase its accreditation performance.

Another university also reported making major changes in advising and other student services as a result of student follow-up surveys required by performance-based funding. It greatly increased its efforts to assess students' capabilities at the time of admission and their progress over time.

Statewide, officials cite three major improvements in higher education resulting from performance funding:

- a marked increase in the percentage of accreditable programs that are actually accredited;
- an increase in the percentage of students in licensed and certified fields passing their professional examinations with scores exceeding the national norm;
- a steady rise in COMP scores.

While it is impossible to unequivocably attribute these results to performance funding, there are no other obvious explanations. A conventional alternative explanation, "creaming," seems unlikely. As one local administrator told us when we inquired about performance funding's incentives to cream: "When 95 percent of my money is still driven by FTE and only 5 percent by performance, why would I give up $95 to make $5? I will still take any student who wants to enroll." Because it affects a relatively small percentage of total funding, performance funding in Tennessee operates at the margins and involves much lower risks than the all or none consequences of performance contracting. Hence, there are no strong incentives to admit only students who are likely to perform well.

Despite these positive signs, performance funding in Tennessee has evoked its share of criticism. At the outset, there was widespread resistance and apprehension on the part of many local administrators and faculty who maintained that educational outcomes were not definable and who viewed performance funding as creating unacceptable degrees of state intervention in campus affairs. Publicly releasing institutional scores worried many who feared, with some justification, that false and misleading comparisons would be made among institutions. Others argued that performance funding directed additional resources to institutions least in need of help. Still others maintained that standards could not be implemented fairly because data were not comparable across institutions and because differences among institutions, such as the mix of accredited and non-accredited programs, would bias performance scores.

While state staff have resolutely stuck to performance funding, they have listened carefully to local criticism, actively sought input and feedback, and responded with modifications to the system. Thus, complaints that the system placed too much emphasis on accreditation led to a reduction in the number of points awarded for this standard. Efforts have been made to reduce the paperwork associated with major field assessment and undergraduate general education outcomes. Annual requirements for surveying alumni were shifted to biennial requirements in response to concerns about the cost of compliance, and state staff have encouraged networking and other means for sharing assessment instruments to reduce the costs of student testing. In short, THEC has viewed performance funding as a flexible system, subject to change and refinement as the need arises. There are no illusions that the system is perfect, but there are strong feelings that despite its imperfections performance funding has improved higher education in Tennessee.

Tennessee's experience illustrates that if expectations for performance funding are not set unrealistically high, important improvements can be accomplished. When performance funding first started in Tennessee, no institution had a systematic process for internal assessment of institutional objectives and performance; now all do. Without question, the system has focused

attention on standards, assessment, and performance—a prerequisite for any institution or group of professionals seeking to be self-improving and self-regulating. Performance funding, however, has its limits, especially if it affects only five percent or less of an institution's finances. For administrators who are aggressively seeking change and improvement, program funding provides useful leverage, but program funding is not likely to induce change in those who remain steadfastly resistant. It is possible to comply with performance funding and obtain some additional funds without really improving performance. Additionally, performance funding inevitably leads to some reduction in local academic autonomy and an increase in bureaucracy as pressures mount for a more uniform system of definitions and measurement that will reassure all the participants that they are being treated fairly.

What are the Implications for Federal Vocational Education Policy?

Tennessee's experience with performance-based funding offers a number of important lessons for efforts to shape a more outcome-oriented approach to federal vocational education policy. First, not only is it possible to fashion a performance funding system with a relatively small amount of money but also the success of the system may well *depend* on the performance incentive being relatively small. Performance-based funding, as practiced in Tennessee, was designed to improve performance at the margins, not radically transform the higher education system and introduce possibly undesirable incentives as well. Thus, because the financing of postsecondary education remained largely enrollment driven, incentives to cream and otherwise skew operations artificially in response to performance standards were greatly reduced. Moreover, the fact that performance funding allocated supplemental money rather than reallocated existing dollars helped to reduce opposition and secure constructive cooperation.

Second, a performance funding system is more likely to be successful if it does not attempt to bypass or ignore existing institutional arrangements and the ways in which administrators perceive their leadership roles. Although exercising strong leadership at the state

level, Tennessee nevertheless continuously involved local administrators and faculty in the design and modification of all aspects of performance funding. Additionally, locals were given substantial discretion in determining how best to implement standards, and there were virtually no strings on how institutions could use the funds they earned through performance funding. From the beginning, participation in performance funding was voluntary, and while pressures from peer institutions, the press, and consumers would have made it difficult for any institution not to participate, institutions were always free to opt out if they felt they were treated unfairly or that the required effort was not worth the extra money.

Third, financial incentives that are formally awarded at the institutional level can be effective. It is not necessary that the system establish specific procedures for using financial incentives to motivate individual departments, programs, or personnel. Leaving institutions free to determine how best to use the rewards of performance funding to motivate particular individuals or groups of individuals worked in Tennessee, especially when there were local administrators and faculty who were able to use performance funding as leverage for their own agendas for improvement.

Fourth, including measures of year-to-year improvement and value added in performance funding eliminates the problem that such systems reward only the highest performing institutions that may be the least in need of additional resources. Low performing institutions could and did receive additional money under performance funding in Tennessee, but only if they did, in fact, show improvement. Such an approach is probably superior to systems that simply target more resources to low performers, with no attention to whether the additional funding leads to increases in performance.

Fifth, designing and operating performance funding systems requires a substantial commitment of resources over an extended period of time. Tennessee began developing its performance funding system about seven years before its initial implementation. Once

implemented, about four years passed before most local institutions began to take performance funding seriously and more fully recognize its potential for improving their own operations. Even as the system was accepted and more widely recognized as beneficial, ongoing needs to evaluate and modify the system required ongoing staff time at both the state and local level. Because of the extended period of time required from design to implementation to acceptance and further modification, continuity of leadership and strong leadership figured prominently in the success of the system. In this respect, performance funding benefitted from the strong support of Lamar Alexander, who while governor led major efforts to strengthen accountability at all levels of education and who, later as President of the University of Tennessee, continued to champion the system. Additionally, leadership of THEC changed only once over the eighteen years spanning development of performance funding to the present, and both executive directors were strong advocates of performance funding.

Sixth, incorporating multiple measures of performance increases credibility and acceptability of performance funding. By rewarding institutions for performance on six sets of standards, and using multiple measures within several of each of these standards, Tennessee avoided criticisms that the system was biased in favor of institutions that happened to do better on an arbitrarily narrow selection of measures. While opting for multiple measures inevitably increased the complexity of performance funding, as well as the costs of collecting and reporting data, it nevertheless better reflected the multiple goals of postsecondary education and the divergent opinions about how one should measure educational performance.

Finally, although Tennessee sought to preserve local flexibility, centralized efforts at the state level to achieve some uniformity were necessary. When performance is linked to funding, even a relatively small amount of funding, the procedures require a set of measures that all can regard as fair. It is impossible, therefore, to let everyone devise their own individual systems for measuring and rewarding performance.

These seven considerations should figure prominently in any effort to use performance-based allocation formulas as a means for distributing federal funds for postsecondary vocational education. There are several parallels between performance funding as practiced in Tennessee and as it might be practiced in federal vocational education policy. In both instances, the amounts of money are relatively small, compared to total spending. Both must acknowledge the importance that diversity and autonomy play in the organization of state and local postsecondary agencies and institutions. Although vocational education policy is more focused than higher education policy generally, it nevertheless is concerned with multiple objectives that are not subject to a one best way of definition and measurement. Finally, while both require some degree of uniformity in how performance funding affects various participants, the paramount objective of performance funding is stimulating institutional attention to performance. If at the expense of strict comparability some increased local discretion and flexibility better contribute to this overall objective, the price in terms of structural tidiness is probably well worth it.

C. PERFORMANCE-BASED STUDENT FINANCIAL AID

Postsecondary vocational education outcomes depend on two types of performance—performance by institutions and performance by students. Performance contracting and performance-based allocation formulas are primarily aimed at improving institutional performance and assume that improvements in the ways institutions deliver education and training will result in increased learning and greater satisfaction by students. An alternative to such institutional incentive systems is an approach that rewards students directly for good performance. While these rewards could take several forms—e.g., cash grants, guaranteed jobs, special honors—one idea that has recently been proposed is performance-based student financial aid, where aid would be contingent on the student's achieving a specified level of performance such as attainment of a degree or certificate.

Performance-contingent aid could take a number of different forms. At one extreme, all need-based aid to a student could be awarded as an unsubsidized loan, with some or all of the loan forgiven—converted to a grant, in essence—if the student graduates or meets other performance standards. An alternative formulation would be to leave grant programs as they are, and make only existing loan programs convertible contingent on student performance. Varying amounts could be forgiven depending on the student's level of achievement. Students who completed a baccalaureate degree, for example, could have more of their loans cancelled than students who completed a certificate or an associate degree. In a competency-based vocational program, various amounts could be forgiven for achieving different numbers of competencies. Performance-contingent aid programs could be designed to produce savings, be budget-neutral, or increase federal costs.

The Case for Performance-Based Aid

For many years, federal policy has concentrated on providing equal opportunity in higher education. First through the GI Bill and later through grant and loan programs, federal policy has tried to remove financial barriers to enrollment in postsecondary institutions. Despite a concern with the large number of dropouts (nearly half of all four-year college entrants drop out before graduating) and even though the public interest is clearly served by having more educated people, no similar steps have been taken to increase completion rates. Society has pushed for access, but has been reluctant to judge what the "right" amount of education is. Once in the door, students are on their own to decide how much education is best for them.

In a recent issue of *Change*, Fred Fischer advocates restructuring Title IV of the Higher Education Act, which now provides about $15 billion a year in aid, to provide greater incentives for students to obtain degrees and certificates.[17] He points out that although society has a clear interest in maximizing the number of students who graduate, federal higher

[17]Frederick J. Fischer, "Graduation-Contingent Student Aid: Fighting the High Costs of Dropping Out," *Change*, November/December 1987, pp. 40-47.

education law and policy currently provide no real incentives for completion. The law requires students to maintain satisfactory academic progress in order to continue receiving aid, but definition of such progress is left up to individual institutions. There is a limit on the number of years that an undergraduate student can receive Pell grants, but schools are given discretion to extend that time. There are also limits on cumulative loan amounts, but these limits are not very constraining. Fischer contrasts this lack of concern with results in the federal aid system with the attitude of the private sector, where corporations typically reimburse students only for successful completion of educational programs, not for enrollment.

In Fischer's view, sluggish productivity growth and pessimism about American competitiveness in the world economy make concern for improved student achievement a necessity. He believes that society should leverage the funds it is already spending on student financial aid to increase graduation rates, and suggests that one way to do this would be to make the benefits of financial aid contingent on achievement.

The notion of performance-contingent aid is an intriguing one, and one that is consistent with this report's emphasis on outcome-oriented approaches to funding vocational education. It seems to offer a policy instrument for influencing students to behave in a socially beneficial manner. It would also have considerable political appeal, especially among the segment of the public that is more comfortable rewarding achievement than providing up-front grants. However, performance-contingent aid raises some important questions that bear careful consideration. Most important,

- How would performance-contingent aid affect enrollment and completion?
- Would it have other (possibly undesirable) effects?

Expected Effects on Enrollment and Completion

Fischer predicts that contingent aid would decrease dropouts through two mechanisms. First, it would persuade students who are unlikely to graduate not to enroll, thus shifting the composition of enrollment towards those students most likely to graduate. Second, it would provide an incentive to enrolled students to complete their programs.

Unlike high school attendance, postsecondary attendance is voluntary. Students decide whether or not to enroll in a postsecondary institution after weighing the expected costs and benefits of attending. The primary goal of financial aid programs is to increase access for low income students. Financial aid lowers the cost of attending and thus encourages the enrollment of students who would otherwise find the costs greater than the expected benefits. When students enroll, they do not know for sure whether or not they will graduate. If the financial aid offered were contingent upon whether or not the student graduated, the uncertainty about graduation would make the offer less attractive and raise the student's perception of the cost of attendance. In other words, in the student's eyes, a $1,500 grant would lower the cost of attending much more than would a $1,500 unsubsidized loan converted to a grant only upon the student's completion. As a result, some students who would enroll if awarded a grant would not enroll if offered contingent aid. To the extent that performance-contingent aid discouraged students with a high probability of dropping out from enrolling at all, it would promote a higher graduation rate.

At first blush, this might seem to be a desirable outcome. However, consider who would be in the group discouraged from enrolling if there were a shift from the current student aid policy to performance-contingent aid. First, there would be students who were marginally academically qualified. Although they may be at very high risk of dropping out as a group, some of them would make it. Second, there would be students who were academically qualified, but who were not sure if they wanted to enroll. If the costs were not too high, they would take the risk and try it out; some of them would stay and some would leave. Third, there

would be low income students who were very sensitive to price changes; these students would not necessarily be at risk of not making it academically. In these three groups there could be a significant number of students who would graduate. If society's goal is to increase the *number* of college graduates, not just the graduation *rate*, contingent aid would not help. Furthermore, all of these groups are likely to include large numbers of low income and minority students. Performance-contingent aid would therefore reduce the access of these groups to postsecondary education, thus subverting the major goal of student aid.

For students enrolled in a postsecondary institution, graduation-contingent aid would provide a strong incentive to stay in school, because the cost of staying until completion relative to the cost of leaving falls as the student progresses. A student nearing completion who dropped out could forfeit substantial amounts of money. In other words, the cost of dropping out would be very high. If loans were unsubsidized—that is, if interest kept accruing while the student remained in school—students would have an additional incentive to move through school as quickly as possible.

In a paper sharply critical of performance-contingent aid, Charles Manski questions the appropriateness of evaluating student aid policy by its effect on completion. He argues that lowering the dropout rate would not necessarily make society better off, and that Fischer's assumption that college dropout levels are too high is incorrect.[18] Elsewhere, Manski and Wise have described the decision to enroll in a postsecondary institution as a decision to initiate an experiment—the student does not know until he tries it whether schooling is for him—and noted that the usefulness of an experiment cannot be judged by its outcome.[19] They note that postsecondary education for many students is part of the search process that leads to discovery

[18]Charles F. Manski, *Should We Subsidize Enrollment in or Completion of Postsecondary Schooling?* Report to the National Assessment of Vocational Education, September 1988.
[19]Charles Manski and David Wise, *College Choice in America*, Cambridge: Harvard University Press, 1983, p. 10.

of what occupations are compatible with their interests and abilities. Students therefore derive informational value from attendance, even if they drop out.

Other Effects

Manski identifies three other negative effects of performance-contingent aid: it would be cost ineffective, inhibit career mobility, and dilute the value of a degree. Because a student does not know whether or not he will receive the contingent award for which he is eligible, he will value contingent aid at less than its face value. Some students who are induced to enroll by the Pell grant program would not enroll under a contingent aid program offering awards of equal face amount. The contingent award, therefore, would have to be larger than the Pell grant for the student to be induced to enroll. Hence an enrollment neutral performance contingent financial aid program would be more costly than the present Pell grant program.

Both Manski and Fischer note the possibility of performance-contingent aid reducing the value of a degree. If students only receive aid if they graduate, institutions may lower their standards to make it easier for students to graduate. If this happened, the value of a degree would decline. Society would have to rely on state licensing and private accreditation bodies to prevent schools from reducing graduation requirements.

Manski also expresses concern that a performance-contingent aid policy would influence career choices. One concern is that students might be induced to choose fields of study with high pass rates. The probability that a student completes presumably varies with the field chosen, so contingent aid might inhibit students from trying more difficult fields with lower probability of success. Another concern is that performance-contingent aid might also reduce career mobility. It would be difficult for students to change fields, particularly if students had to drop out and start over at a different institution. This would impact vocational education students attending specialized institutions the most. Schools perform an important function by allowing students to try out alternative careers at low cost in controlled settings. If a student in

a vocational school dropped out decided to change careers and had to go to a different institution, he would lose all his contingent aid.

Fischer also notes that performance-contingent aid in effect may redistribute a given total loan burden from those less likely to default (completers) to those more likely to default (dropouts). The result may be to increase the default rate and undermine support for student aid programs in general. However, this outcome might be offset by fewer dropouts, resulting in lower default rates. *A priori*, it is impossible to know what the net effect might be.

Subsidizing Completion Versus Enrollment

To make all aid graduation-contingent aid would be a sharp departure from the existing Pell grant program, where low-income students are provided with a contribution that their parents cannot afford, thus putting them on initial equal footing with students from better-off families. Graduation-contingent aid violates this basic rationale by exposing low-income students to a risk that their higher-income peers do not face. Fischer acknowledges this risk, but questions if it is unfair. His main concern is finding the most cost-effective way to structure the public subsidy, and argues that if the government wants to do something about dropouts, it must choose either to provide a subsidy while the student is in college or to provide some or all of the subsidy as a graduation gift to low-income students, but not both. His position is that providing a greater proportion of federal subsidies as a graduation-contingent gift is a better use of taxpayer funds.

Manski considers relative merits of the two types of subsidies—current financial aid policy, which subsidizes enrollment, and performance-contingent aid, which subsidizes completion. Unlike Fischer, he does not take a position, but concludes that the appropriate choice depends on the answers to a number of questions that we do not have answers to at the present time:

- How does the value of postsecondary schooling to society compare to the value to the individual? If society values completion more than students do privately, we should subsidize completion; if society values enrollment (regardless of its outcome) more than students do privately, subsidizing enrollment enrollment is sensible policy.

- What fraction of dropouts are voluntary? If students drop out of school because they do not *want* to graduate, not that they are unable to, then policy should subsidize completion.

- How well students can predict (before enrolling) whether or not they will complete? If they do not make good predictions, policies that subsidize enrollment are desirable.

- How risk averse are students? If they are risk averse, subsidizing enrollment will be beneficial.

Conclusion

The attractiveness of performance-contingent aid depends greatly on how much and what kind of aid would be made contingent on performance. The negative effects described above would be most serious if all need-based aid were made performance contingent. In light of the many unknowns surrounding performance-contingent student aid, wholesale conversion of existing financial aid programs, especially the Pell grant program, would be inappropriate. Moreover, an emphasis on improved student performance and persistence should not become a substitute for concerns about access to postsecondary education. The major goal of financial aid is to increase access for low-income students, and access of students who under the current financial aid system can succeed should not be reduced in order to improve performance or increase completion rates, especially when institutions have other means of accomplishing these performance objectives. Improving the quality of their programs, screening students who apply, and testing and counseling students to ensure proper placement hold the promise of improving performance and increasing graduation rates for all students, not just students receiving financial aid.

In summary, performance-contingent financial aid remains an intriguing idea, but too little is known about its possible consequences to adopt it on a large scale. Determining whether the notion should be pursued would probably best be served by some systematic experimentation that would address the major unanswered questions.

D. SOME GUIDELINES FOR FEDERAL VOCATIONAL EDUCATION POLICY

Can performance measures be linked to funding? The evidence from JTPA, ETP, and the Tennessee Higher Education Commission indicates that clearly they can. What, then does this experience suggest for federal policy, especially the questions raised at the outset of this chapter?

The General Relationship Between Performance and Funding

Performance contracting typically takes an all or nothing approach to linking performance and funding. Funding is based strictly on outcomes, with little or no attention to inputs. If a program trains 15 people but succeeds in placing only one, for example, it receives nothing for the other 14. Performance funding as practiced by Tennessee, in contrast, continues to fund higher education largely on an FTE basis but provides a relatively small additional reward for meeting certain performance criteria.

Given that federal vocational education policy provides less than ten percent of total funding for vocational education and assuming that it is unlikely that, even if it deemed it desirable, the federal government could require states to allocate state and local money for vocational education solely on performance criteria, the performance funding approach seems a more appropriate avenue to explore. Performance contracting, as practiced under JTPA or ETP, would probably require that the federal government foot most or all of the bill for postsecondary vocational education. This would require either a massive increase in federal

funds for vocational education or a much narrower targeting of federal funds to selected programs or types of students. Neither of these events is likely to occur.

Performance funding offers an additional attraction in that it need not withhold resources from low performers, *provided they show improvement over time*. Assuming that only federal money were allocated on performance criteria in vocational education, low performing institutions would continue to receive the lion's share of their revenues from state and local funds allocated on FTE or ADA. However, if federal performance criteria included measures of value added or improvement over time, lower performing institutions would still be eligible for federal funds. This approach is probably preferable to performance formulas that seek simply to direct more resources to low performers because the have "greater needs" for help. By making low performers eligible for additional funds based on value added or improvement over time, the system keeps everyone focused on performance and does not introduce perverse incentives to underperform to qualify for additional aid.

Levels of Evaluation and Comparison

Performance contracting typically makes distinctions at the programmatic level, while performance funding more closely follows the governance structure that determines the lines of fiscal authority between the allocator of funds (the state) and the recipient (postsecondary institution or, in the case of some community colleges, district). While performance funding could seek to bypass a particular level of governance—for example, bypass campus administration to allocate funds directly to departments—the disadvantages of such an approach outweigh the advantages. While such an approach moves financial incentives closer to those ultimately responsible for achieving programmatic objectives, it implies that the bypassed level of administration is incapable of determining how best to motivate the people for whom it is responsible. Moreover, the implication that the bypassed level is incapable of properly administering as little as five percent of total operating expenditures while it continues to be

responsible for the other ninety-five percent is either not true or calls for policies more drastic and far reaching than performance funding.

From our site visits, we were struck repeatedly by the success of universities and community colleges to rally faculty and campus administrators around performance concerns, whether stimulated by performance contracting or performance funding. In no instance did this require creating direct monetary rewards for personnel (merit pay, for example, or performance-based bonuses). Rather less direct rewards sufficed. In some instances, the ts of a successful (profitable) performance contract were used to equip faculty offices with personal computers. In other instances, the mere recognition that the institution had achieved its performance objectives and a sense of having contributed to that accomplishment and the public recognition it received were sufficient rewards.

Who Should Administer Performance-based Systems?

The great advantage of performance-based policy is that if the objective can be stated clearly and equitably, how to accomplish these aims can be delegated far down into the system. This argues for giving states and localities considerable discretion, within broad guidelines, over what to measure, how to measure it, and how to tie rewards to these measures. The critical requirement is that they must do all three of these tasks.

The price for discretion is, of course, some loss of uniformity and comparabilty. Uniformity and comparabilty, however, are not necessarily desirable ends in and of themselves. The power of performance-based policy is the ability to focus attention on outcomes and get institutions thinking in these terms. The degree of variation in how they do this is probably much less important that the fact that they are doing it at all.

When crafting a performance-based federal policy for postsecondary vocational education, therefore, it would be wise to use the conventional administrative structure,

delegating responsibility for designing and administering the system to the states, which in turn decide how best to implement the system at the local level. To do otherwise is to burden federal policy with anticipating and effectively addressing the diverse set of intrastate institutional arrangements that characterize the delivery of postsecondary and adult education. Existing procedural policies have not been very successful at accomplishing this task and there is no reason to belive that performance-based policy would do much better.

What is the Appropriate Funding Device?

Of the three approaches examined here—performance contracting, performance funding, and performance-contingent student aid, performance funding holds the most immediate promise for making federal vocational education policy more outcome-oriented. Performance contracting is better suited to programs that are able to pay the full costs of training. As noted above, federal vocational education legislation is not likely to have sufficient funds to underwrite the full costs of programs, except in a few small selected areas or for small target populations. In these instances, performance contracting might be appropriate. Otherwise, building federal policy around performance funding is the preferred approach. Performance-contingent financial aid, while intriguing, presents too many unknowns to make immediate widespread adoption an attractive possibility at this time, but some careful small scale experimentation with the idea is desirable.

In Chapter Five, we will use these guidelines to develop some more specific outlines for performance-based policy in postsecondary vocational education. First, however, we turn our attention to one remaining feature of performance-based systems, the role of information and information disclosure to consumers and policy makers.

CHAPTER 4: INFORMATION DISCLOSURE

INTRODUCTION

Students are consumers of vocational education. When they choose a vocational program, they purchase skills, knowledge, a credential, and access to future employment opportunities. The purchase is made with two currencies: first, time away from work and other training programs and second, money. The public shares in the dollar cost through support of public schools and financial aid programs. This paper is prompted by a concern that students often make their choices with limited information about the quality of the vocational programs they enter and the employment prospects in the occupations they choose. It discusses how improving information about the expected outcomes of educational alternatives might improve the quality of the individual student's choice and the quality of postsecondary vocational education as a whole.

The basic argument is quite simple. Prospective students can choose whether or not to attend a postsecondary institution at all and, if they decide to do so, can choose the institution and the program. With fuller understanding of the benefits that different institutions and programs have to offer—such as the likelihood of completing the program, the employment opportunities if they complete the program, and salaries they are likely to earn if they get a job related to their training—students will choose institutions and programs with good expected outcomes. Institutions have an incentive to improve these outcomes if funding follows student enrollment, either through student tuition (often federally subsidized through loans and grants) or through funding based on enrollments. Efficient allocation of resources is therefore fostered by maximizing the amount of information on outcomes available to students.

Obviously, it is not possible to provide complete information, and even if it were, students' choices are constrained by many factors that would prevent them from always choosing the best program. Nevertheless, if more attention were paid to disclosure of relevant information, a more efficient allocation of educational resources might be achieved. Student choice, if better

informed, could be a powerful mechanism to induce institutions to be responsive to changing occupational opportunities and to demands for quality education.

In this paper we first review past use of information disclosure to consumers generally and to consumers of education specifically. Next, we discuss the potential benefits and costs of greater information disclosure in vocational education and describe the conditions that must be met for information disclosure to promote a more efficient allocation of resources. We then examine Arizona's experience with information disclosure. Finally, we draw some conclusions about the usefulness of an information disclosure program such as Arizona's.

INFORMATION DISCLOSURE FOR CONSUMERS

Economists and policy makers have long recognized the potential benefits of information disclosure. The efficiency of any market depends on consumers having full information about the quality and expected performance of what they buy. Only when consumers know what they will get for their money can they encourage the production of the best products through their patronage. Yet, in many markets, consumers are poorly informed about the quality of products before they buy. To help consumers improve their choices, the government has passed many different information disclosure laws over the years.

Some information disclosure laws protect consumers from the dangers of being ill-informed. For example, there are laws that require certain non-prescription drugs to carry labels warning people with certain medical conditions not to use the medicine. Similarly, there are laws that require plastic bags to carry warnings against using them in infants' beds, and laws that require labeling of flammable materials to make sure consumers know that the materials can easily catch fire.

Other information disclosure laws help individual consumers make the choices that best meet their personal needs. For example, labels on food products identify ingredients and

nutritional content to help consumers select foods suitable for their diets. Truth-in-lending laws require financial institutions to disclose effective interest rates, making it easier for borrowers to compare the costs of different loans. Sometimes consumer information is disclosed voluntarily. Responsible commercial advertising, for example, tells consumers something about the nature of products, and consumers can use this information to decide which purchases will fill their individual needs.

Studies show that some information disclosure laws have more impact than others on consumer behavior. In reviewing research on the impact of consumer information disclosure laws, Friedman and Sugarman discovered that some laws have had little effect.[1] For example, the truth-in-lending laws requiring disclosure of effective interest rates by lending institutions appear to have had little impact on consumer borrowing habits, although consumers feel more confident in their decisions because of the information. The financial prospectus required by the 1934 Security and Exchange Act is rarely read because it does not contain the information consumers consider most important to their investment decisions.

Other disclosure laws have had more impact on consumer behavior. Research shows that consumers are aware of unit pricing requirements and do use the information to guide their purchases. Friedman and Sugarman conclude that carelessly designed and implemented disclosure schemes can easily fall short of their goals. The important lesson is that the success of disclosure depends at least partly on the relevance, simplicity, and timing of information disclosed.

INFORMATION DISCLOSURE IN EDUCATION

Disclosure of information about education programs became a policy issue following the enactment of major financial aid programs. The GI Bill (Veterans Readjustment Act of 1944)

---

[1]Lee S. Friedman and Stephen D. Sugarman, *School Sorting and Disclosure: Disclosure to Families as a School Reform Strategy, Part One*, Berkeley, Graduate School of Public Policy, Working Paper #139, p. 56-62.

placed, for the first time, significant financial power in the hands of millions of potential students. Abuses followed because the program created incentives for institutions to enroll as many students as possible, regardless of their chances for success. Investigations found cases of educational enterprises compiling phony figures on veterans' enrollments, engaging in fraudulent advertising and sales practices to attract students, and going out of business and moving across state lines to reopen.[2] These abuses led Congress to develop safeguards to protect educational allowances.

Federal financial aid programs introduced in the 1960s and 1970s—the largest of which was the Guaranteed Student Loan (GSL) program—also put large amounts of money in the hands of students who could fall victim to harmful recruiting and enrollment practices. High loan default rates among students who failed to complete programs led the federal government to restrict institutions' eligibility for loan programs and revise program regulations. The new regulations required institutions to maintain records on the admission, attendance, progress, placement, and indebtedness of loan recipients. They required institutions to establish a fair and equitable refund policy for tuition, room, and board and to distribute this policy to all students. They also required institutions to make available to all prospective students, before obligating them to pay any tuition or fees, accurate information concerning current academic or training programs, faculty, and facilities. The regulations for vocational programs specified that this information must include the percentage of recent graduates who obtained positions in the areas for which they were prepared and their average starting salaries. Finally, to keep institutions from admitting students indiscriminately, the regulations required institutions to show a substantial and reasonable basis for concluding that each prospective student had the ability to benefit from the instruction or training offered.[3]

---

[2]Joan S. Stark, "The Emerging Consumer Movement in Education," in *Promoting Consumer Protection for Students: New Directions for Higher Education*, San Francisco: Jossey Bass, 1976, p. 1-8.
[3]Robert H. Davidson and Joan S. Stark, "The Federal Role," in *Promoting Consumer Protection for Students: New Directions for Higher Education*, San Francisco: Jossey Bass, 1976, p. 10.

The Department of Education remains concerned about these education consumer issues, particularly in vocational-technical programs. The Department recently commissioned a study to investigate a number of issues related to high GSL default rates at vocational-technical schools: admission of unqualified students who are not adequately informed about the difficulty of the material they must master, students who drop out of the program or who do not get jobs they were trained for, misrepresentation of program completion and job placement rates during the recruiting process, and lack of fiscal integrity. The study found what Secretary Bennett termed "excessive evidence" that private, for-profit trade schools are exploiting and deceiving students.[4]

POTENTIAL BENEFITS AND COSTS OF MORE INFORMATION DISCLOSURE IN VOCATIONAL EDUCATION

Disclosure of information on outcomes could protect students from the kind of abuses discovered in the GI educational allowance and GSL programs. If students were provided with outcome information such as completion rates, job placement rates, and entering wage rates for different programs and institutions, they could avoid programs that offer them little for their investment of time and money. As indicated above, some private schools have been charged with false and misleading advertisements about the success of graduates. Independently collected information on outcomes could be used to disprove false advertisements.

In addition to protecting students from unscrupulous behavior on the part of institutions, more information on outcomes could help students make the best choices for themselves from available options. At the present time, students are forced to choose schools with limited objective information about the quality of programs and expected outcomes. Program evaluation results and other information collected by the state or individual institutions are rarely available to the public.

---

[4] Brian Fitzgerald and Lisa Harmon, *Consumer Rights and Accountability in Postsecondary Vocational-Technical Education: An Exploratory Study*, Washington, D.C.: Pelavin Associates, February 1988.

Students typically rely on high school counselors, friends, family, and program advertisements to help them choose among educational options and between education and work. Like consumers purchasing food for the family or choosing a loan, students could benefit from accurate information about their options. Objective information on outcomes would give students a more realistic picture of the likely benefits of attending different schools and entering different occupations. If students were able to assess whether the costs of an education were justified by future employment and earnings prospects, perhaps many would avoid incurring large debts they were unable to pay because they could not find adequate employment after completing school. More formal information disclosure policies would especially benefit disadvantaged students who are less likely to have access to accurate informal sources of information on program quality (e.g., friends and family who have atended a variety of postsecondary institutions).

More information disclosure could improve the quality of vocational offerings as well as help students make wise personal decisions. Student choice plays an important role in determining what programs are offered and by which institutions. When students select the best programs, an enrollment-based funding system will direct vocational education funds to high quality programs and away from low quality ones. It will also direct additional public funds in the form of student financial aid.

Institutions as well as students could use information on outcomes. By comparing their outcomes with those of other institutions, institutions could identify immediately which programs needed improvement and not wait for students to "vote with their feet." The information on outcomes currently available to institutions is limited. Most institutions conduct their own evaluations and participate in peer reviews for accreditation purposes, but although this information provides feedback for planning and program improvement, it is expensive to collect, does not readily allow comparisons among institutions, and is not available on a regular basis.

Information disclosure does not come without costs, however. Against the potential benefits described above must be weighed the costs of collecting and disseminating information, which could be substantial. A statewide effort requires collection of information about thousands of graduates from possibly hundreds of vocational programs. Following the collection, the data must be interpreted and disseminated to those who can benefit from the information, including institutions, education agencies, and potential students.

Critics of information disclosure are quick to point out another potential cost of publishing completion, placement, and wage data. There is a danger that institutions attempting to perform well on such measures might increase admissions requirements so a higher proportion of students who enter could complete and find jobs. This kind of response to an information disclosure program could reduce services to disadvantaged and high risk groups.

NECESSARY CONDITIONS FOR EFFECTIVE INFORMATION DISCLOSURE

Information disclosure laws hold the promise of improving student choice and forcing institutions to become more performance-oriented. For this promise to be fulfilled, a number of conditions have to be met:

- institutions must generate relevant, reliable measures of performance that allow comparisons among programs and institutions;
- information on performance must be disseminated to potential students;
- students must take the information into account when making their choices;
- institutions must change their programs in response to the information.

The prospects for meeting these conditions are discussed in this section.

Performance Measures

Students can use performance measures to choose schools and programs wisely only if the measure are relevant, easy to understand, reliable, and comparable among institutions. Chapter

Two discusses performance measures at some length. The conclusion was that although defining and measuring outcomes present some conceptual and methodological problems, these problems are not insurmountable. Much progress has been made in developing indicators and reasonable sources of data, and measuring performance in useful ways is not only feasible, but well underway in many places throughout the country.

Dissemination

Institutions with good records would want to make their successes known and could be relied upon to advertise their job placement and wage rates, but institutions that have not performed well would have no incentive to cooperate in disclosing information. Dissemination of information on educational outcomes should therefore be a state-level responsibility.

Among those who should receive the information are the state legislature, the governor's office, state agencies with responsibility for education and economic development, postsecondary vocational institutions, high school counselors, high school students, and members of the public who request it. High school counselors can advise potential vocational students who are still in school, but other ways must be found to reach those who are not. Publication of results in newspapers and distribution of brochures in public places such as libraries are possible ways to reach wide audiences.

The form in which the information is presented is important. As Friedman and Sugarman pointed out, consumers are much more likely to respond to information that is simple as well as readily accessible.[5] Attractive brochures that are brief and to the point are important.

To be useful, the information must also be disseminated in a timely manner. Because there has to be a lag between program completion and collection of outcome data (to give completers time to find jobs and establish a salary history), data will necessarily be at least a year or a year-

[5]Friedman and Sugarman, *Op. Cit.*, p. 56.

and-a-half old by the time it is published. Every effort must be made to ensure that the lag is not any longer than necessary because the value of the data declines rapidly over time. Three or four-year-old wage and job information would be of little interest to potential students.

Student Choice

Assuming students had access to comparative information on outcomes for different programs and institutions, would they use it to make their enrollment decisions? For example, would an individual considering a career in electronics study use the information to determine which electronics programs had the highest placement rates and wages and then enroll in one of them? This question is difficult to answer, because attendance decisions are complex. Nevertheless, it is an important question, because the potential benefits of information disclosure cannot be realized if students do not actually use the information.

There is some evidence that high school seniors do in fact use job placement records of programs in choosing the colleges they attend, although it is not specific to vocational students. A 1982 survey of a national sample of graduating seniors asked about the importance of various factors in choosing the college they planned to attend, and one of the factors was the job placement record.[6] A total of 41 percent reported that the job placement record was somewhat important, and 48 percent said it was very important. Only 12 percent said it was not important. The sample included all students attending or planning to attend college, not just vocational students. It is reasonable to predict that vocational students would be even more interested in job placement.

Students also care about colleges' reputations in academic areas. The same survey found that 49 percent of the students rated academic reputation as very important in their decision and 44 percent ranked it as somewhat important. Interestingly, in a separate study, Manski found that

---

[6] *High School and Beyond 1980 Sophomore Cohort First Follow-Up (1982), Data File Users' Manual*, Washington, D.C.: National Center for Education Statistics, p. 147.

students do not predictably choose the highest-quality school they can get into. They are most likely to choose schools with students slightly more qualified than themselves—i.e, with SAT averages about 100 points above their own.[7]

Despite apparent student interest in outcomes and overall quality, there are a number of factors that limit student choice. We cannot assume that students are automatically free to choose the best programs and schools. Location is an obvious limiting factor. Many vocational students have to live at home while enrolled, often for financial reasons. Even if they are armed with information that the local program is not one of the best, they may still have to choose it. Another limiting factor is student ability—if the best programs are full, not all students can choose them; some will have to choose inferior ones. Cultural factors may make it very difficult for students to select certain programs. Some programs are traditionally dominated by males or females and may not be chosen by the other sex even in the face of evidence that they prepare students for jobs with high wages. More than information alone is needed to steer these students in the direction of non-traditional high quality programs. Still other limiting factors for students are the cost of the program and the availability of financial aid. Some students may have to choose the institution with the lowest costs or with the best financial aid offer.

In sum, it would be rational for students to choose the institution with the best expected outcomes, and there is some evidence that students take into account expected outcomes in making their choices. However, many factors enter into student choice, and we have no real way to predict how much weight students would give to published information on outcomes.

Institutional Response

If information disclosure is to affect the quality of vocational education, institutions must improve their programs because of (a) the comparative information showing how they are doing relative to other institutions and (b) student demand, which presumably has been influenced by

[7]Charles F. Manski and David A. Wise, *College Choice in America*, Cambridge: Harvard University Press, 1983.

the information. In addition to improving the quality of the programs they have, they must eliminate programs for which demand is low, expand programs that are doing well, and possibly add new programs in fields that are doing well in other institutions.

Organizations tend to resist change, and it is easy to imagine that at least some institutions would ignore the information. Postsecondary vocational institutions can be unresponsive to changing technologies and changing demand for workers in different occupational areas. Opening and closing programs requires costly investments in new equipment and personnel, and existing faculty cannot easily be reassigned to teach different skills. Consequently, institutions often continue to offer outdated programs as long as students are willing to enroll. With more information disclosure on outcomes, institutions would have to be more responsive or risk losing their funding.

To this point, we have focused on the potential benefits of an information disclosure policy and examined the conditions that have to be met for an effective information disclosure system. In the rest of the paper, we describe Arizona's experience with information disclosure to highlight the practical considerations involved.

ARIZONA'S EXPERIENCE WITH INFORMATION DISCLOSURE

In 1985, Arizona implemented an innovative information disclosure program. The state collected from each postsecondary vocational institution the social security numbers and vocational education program classifications of all students completing programs during the 1982-83 school year. The social security numbers were checked against unemployment insurance data files to determine whether or not the completers were employed during the year beginning in the fall of 1983 and, if so, what their wages had been during the year following their completion. The results were published and distributed to high school counselors and to vocational institutions.

Unfortunately, the information disclosure program only lasted one year. The law authorizing the data collection and publication remains on the books, but the legislature did not authorize any funding after the first year. A mix of technical and political problems were responsible for the program's demise, but valuable lessons were learned during the one year of operation. Many in the state considered the project a success and believe that it generated valuable information for students, educational institutions, and the state.

To gather information for this paper, we interviewed the major participants in the design and operation of the program, including a former aide to Governor Babbitt, the director of the Vocational Education Resources Coordinating Unit at Northern Arizona University (NAU), which was responsible for collecting the social security numbers and program identification codes and publishing the report, the director of Research and Administration in the Arizona Department of Economic Security, which maintains the state unemployment insurance data base, and the economic consultant on the project.[8] Through these interviews we were able to find out how an information disclosure system worked and to determine some of the practical problems likely to be encountered in a program of this type.

Rationale for the Program

The idea of a report for students, parents, and schools originated in Governor Babbitt's office. The legislature was considering a larger education initiative as part of a package of economic development legislation. As a condition of support for the package, the Governor insisted on articulation and accountability measures for the state's education systems. For postsecondary vocational education, the Governor specifically wanted performance measures.

By providing objective information about the percentage of students completing both public and private programs, the Governor hoped that students would make better choices among

[8]The authors gratefully acknowledge the information on Arizona's experience offered by Dan Anderson in the Arizona Department of Economic Security; Kathryn Nyer, formerly of Governor Babbitt's Office; and Robert Kerwodd, Center for Vocational Education, Northern Arizona University.

vocational options and have realistic expectations about the outcomes of completing different programs and attending different institutions. The Governor also hoped that the information would protect students. State leaders were very concerned that the placement and wage rates advertised by some private training institutes were suspiciously high, and they wanted an independent source of information that would discourage false advertising.

Initial Objections to the Information Disclosure Program

When the proposal to disclose outcome information based on unemployment data was introduced, opponents quickly appeared. The primary opponents were the community colleges, which were concerned that the data would be insensitive to justifiable differences among programs, would be so inaccurate that potential students would be misled, would encourage creaming as an enrollment practice, and would have limited value to students and the state.

Differences Among Programs

Many people thought that comparing completion and placement rates of programs in the same occupation at different schools was inherently unfair. They argued that different schools have different resources, and that small schools with limited resources cannot provide the same diverse curricula as larger schools. They argued further that publicizing placement data would highlight regional differences in employment prospects rather than differences in program quality. They also objected that a comparison between community college programs and private technical programs was unfair because the missions of the two types of institutions are different. Community college programs, because they include general education as one of their goals, focus less on job training and placement than do technical schools.

Proponents of the program were not dissuaded by these arguments and stood firmly behind their belief that some accountability data, even if not perfect, was better than none. They believed that students had a right to know about differences among institutions, regardless of why the

differences existed. They responded to the charge that the missions and content of different programs were not comparable by asserting that more statewide consistency in curriculum would not be a bad idea. The outcome information, they believed, could encourage schools with less successful programs to investigate and adopt some of the methods and curricula of successful programs. Schools in economically depressed areas, proponents argued, would improve if they either cut programs that did not serve local needs or increased their efforts to find job placements outside the local area.

Data Accuracy

Opponents of the program argued that using the unemployment insurance data base would produce inaccurate results and therefore provide misleading information to potential students, who might then avoid perfectly good programs whose low placement rates were caused by factors other than low quality. This argument was based on the recognized limitations of the unemployment insurance data—particularly that self-employed graduates and completers who continued their educations, left the state, or entered the military would appear unemployed.

To deal with this problem, the state investigated matching vocational school completion records with military enlistments and the rosters of the state four-year colleges so that students enrolling in further education or joining the military would not be counted among the unemployed. Although the program did not use these additional data sources in the first year, the state planned to incorporate them later. To further improve accuracy, Arizona hoped to add searches of unemployment insurance data bases in neighboring states such as Colorado and California if those states developed similar programs.

"Creaming"

Most institutions, public and private alike, complained that their placement rates were relatively low because their schools served difficult populations. The emphasis on placement and

wages, they argued, would encourage "creaming"—the recruitment of students most likely to succeed and failure to serve the low-skilled and disadvantaged most in need of services.

The Governor's Office acknowledged this possibility, but countered that because no funding depended on performance and no sanctions were being proposed for low placement rates, schools would not be pressured to "cream."[9] In addition, every school claimed to serve the most difficult students. Consequently, the state reasoned, no school would be at a disadvantage because of its clientele.

Usefulness of the Data

Finally, colleges questioned the usefulness of the data. First, they argued, the unemployment insurance information replicated outcome data already available to the state and institutions from the national VEDS system (now discontinued). In fact, it did not—the VEDS data were virtually useless because they were so incomplete. A major advantage of the unemployment insurance data was that it was much more complete.

Second, they argued that the data would not help students because student mobility was limited by the community college fee structure—fees are lower for students attending the college in their region. However, the State argued that the fee system allowed students to attend any college in the state for the same low fee if the local program did not meet their needs. The state was confident that this rule would permit students to choose colleges based on the data presented in the outcomes report.

---

[9]Institutions would, however, be subject to pressure from enrollment changes if students responded to the low placement rates and avoided such programs. With enrollments down, institutions would be hurt financially. It would be possible to avoid this problem by calculating placement rates separately for certain groups such as physically or learning disabled.

Support for Information Disclosure

Although the initial reaction of the community colleges was negative, some colleges, especially private institutions, welcomed the state's effort to collect student outcome data. Most institutions were interested in the success of their graduates but had not been able to track them well through follow-up surveys, which are very expensive and usually have disappointingly low response rates.

The legislature was easily sold on the information disclosure project as a good way to generate performance measures and introduce accountability. It also addressed one of the legislature's greatest concerns in education—that students be informed of the earnings potential of an occupation before going into debt with student loans. The supporters prevailed primarily because the main opponents, the community colleges, were undergoing a restructuring of their state aid and did not want to jeopardize their budget, being considered by the legislature at the time. Representatives of the community colleges testified against the project, but, in the words of one observer, testified very carefully, guaranteeing cooperation with any program that would help students.

Other than the community colleges, the initiative had no organized opposition. With the support of the governor and sponsorship of the majority whip, the legislation passed.

Implementation

The Department of Economic Security (DES), which maintains the unemployment insurance data base, in some ways would have been the natural choice for the task of collecting and analyzing the data. The design team realized early on, however, that imposing this new, major responsibility on the department would meet strong opposition because of the extra work involved. The state therefore contracted with Northern Arizona University to collect and tabulate the data from the institutions. DES had only to run the tape containing social security numbers and program codes against the employment data, a minimal burden.

Although the system was operational for only one year, Arizona's experience illustrates many of the measurement and interpretation issues that other states adopting a similar program could expect to encounter. The most important technical issues were choosing appropriate outcome measures and dealing with data limitations. Other problems included releasing timely data, protecting individual privacy, and securing school cooperation. These issues and problems were approached cooperatively by a project advisory committee composed of representatives from community colleges, private institutions, the Department of Education, and the Department of Economic Security. The committee was assisted by state staff and an economist.

Outcome Measures

The published data included three outcome measures: completion rates, placement rates, and wages. How institutions were to define completers was not clear, because there were no statewide guidelines for what constituted a program in any occupation. Nor was the state involved in certifying program completion. The advisory committee therefore allowed each institution to decide what constituted a program and successful completion. Some schools adopted narrow definitions of completion and had fewer completers; others chose to adopt more liberal definitions and had more completers. Placement rates were calculated by dividing the number of completers found in the unemployment insurance data base by the number of completers. Quarterly average wages were computed for completers based on one, two, three, or four quarters worth of data, depending on how many quarters they were employed.

Data Limitations

While the unemployment insurance data base is a valuable source of information on employment outcomes that can be accessed at very low cost, it does have serious limitations, some of which were described earlier. The limitations discussed here are the ones regarded as the most serious in Arizona.

A major drawback was that it was not possible to determine whether or not students entered employment in the fields for which they were trained, only whether or not they were employed. In Arizona, the unemployment insurance files contain only an industry code for businesses, not occupational codes for individuals. The state could determine that a completer was working for a trucking company, for example, but not whether the student was a truck driver, mechanic, or janitor for that company. Because of this data limitation, Arizona decided to count any job as a placement. An alternative—considered but rejected—would have been to try to identify placement related to training by attempting to determine what types of occupations were associated with different types of industries.

A second major area of concern was that the unemployment insurance data offered definite outcome information only about vocational graduates who found employment in the state. There are many activities that educators consider positive outcomes of vocational education that were not reflected in the Arizona data, including entering the military, becoming self-employed, continuing on to a four-year institution, or securing employment outside the state. Completers in these categories could not be distinguished from the unemployed. Consequently, placement rates may have appeared deceptively low in certain program areas. For example, many cosmetologists are technically self-employed. They rent spaces from salons but are not employees of the salon owners. Graduates of certain technical programs may be more likely to enter the military than are other students, introducing a downward bias in the job placement rates of those programs.

Arizona's unemployment insurance files record only total wages earned in a quarter, not hourly wages. As a result, the average wages reported for an occupation mixed wages earned by both part-time and full-time workers. The average also combined the wages of those who worked the full quarter and those who worked only part of the quarter. The wage data did not, therefore, accurately describe potential earnings in an occupation, especially when the reported averages were based on a small number of cases.

Many programs had very small numbers of completers each year. In order to protect the identity of individuals and to avoid reporting misleading results because of a small number of cases, Arizona decided not to publish information about programs with fewer than 25 completers. Because most programs in the state turned out to have fewer than 25 graduates, the limit was later changed to 10. Even this standard resulted in the omission of many programs from the published report.

Privacy

Protecting individual privacy was another major concern, as it would be for any program proposing to use social security numbers to locate people in confidential records. DES objected to releasing employment data in any form that allowed identification of individuals by outside agencies. To overcome this problem, DES conducted the computer match of social security numbers with employment information and released only aggregate data.

Timeliness

The timeliness of the data was another source of concern. Arizona did not publish its outcome report until approximately two years after the end of the school year. Although many would have liked more immediate feedback, the delay was unavoidable. The delay was not caused by unemployment insurance data, which are available shortly after the end of each quarter, but by the requirement in the law that the report show placement and wages for the first full year after graduation. The law recognized that students could take at least a year to find a job.

Cooperation

The law required all public and private schools to submit, for all of their graduates, the social security numbers and the names of the occupations for which they were trained. It did not, however, provide any sanctions for schools that failed to comply. The project's success depended on the schools' cooperation, but fears that institutions would refuse to provide data

proved to be unfounded. All of the community colleges and most of the private technical schools provided the required information.

Dissemination

After collecting and tabulating the completion, placement, and wage data on vocational students, NAU produced a final report. The whole project had cost NAU so much more than originally anticipated that funds available for disseminating the results were severely limited. In the end, the report was distributed to state agencies, vocational institutions, and high school counselors, but not to the public.

Although dissemination was not targeted directly at potential students, they did have access to the findings through their high school counselors and NAU assumed that the outcome information would be publicized by schools anxious to advertise their own placement and average earnings data. However, the published report was not presented in the best format for students and parents. It was published as a rather official-looking document on standard report paper. If more funding had been available, the university would have printed a simpler version of the findings in brochures for distribution to high school students and their parents.

Arizona has no information about how many students saw the report or the extent to which potential vocational students used the information to inform their choices. A few students contacted NAU directly to get the report, and presumably high school counselors made it available to other students. Since the Arizona program lasted only one year, neither NAU nor the governor's office could analyze the effect the information had on student choice. Project staff estimated that it could take three to four years for vocational training outcome data to become integrated into high school advising, student choice, and institutional planning.

Institutional Response

Although NAU was not able to evaluate systematically the response of vocational institutions to the report, it was able to collect some anecdotal evidence of changes stimulated by the information disclosure requirement. A few examples can serve to illustrate some of the responses that occurred.

The reporting requirements forced institutions to look carefully at how their programs were defined and what was required for completion. One college, for example, restructured a two-year occupational program into two programs—a one-year program and a two-year program—in response to low completion rates in the two-year program. The two-year program, which is often taught in one year at private schools, lost many students after one year because they had acquired enough skills to enter the labor market. The program was reorganized so students could enroll in either a one-year program or a two-year program. With this restructuring, the college could count those getting jobs after only one year as successful completers. Because funding was based on enrollment, the college had a financial incentive to keep students for two years. The publishing of the placement information motivated the college to meet the needs of students who wanted to enter the labor force sooner, saving these students a year's tuition and time.

Another reaction to the law was an increased focus on placement at the public institutions. Colleges had placement services, but many were insufficient. The new focus on placement gave colleges the incentive to improve or expand placement services and many colleges responded by increasing resources allocated to placement activities and by working harder to place students.

The new legislation also motivated some instructors to increase their contacts with industry. Knowing their programs' performance would be evaluated on job placements, instructors moved to contact employers and update their curriculum in order to improve the job-relevance of their courses and identify potential job opportunities for their students.

The data provided useful information that the state could have used to assess the funding of vocational programs. For example, the report revealed a number of programs with very high enrollments in some courses but small numbers of completers. Investigation showed that a number of these programs included courses that were counted as vocational for funding purposes, but that were in fact large lecture courses in vocational education departments, taken as electives by many non-vocational students. Since vocational courses receive 40 percent in additional funding per full-time equivalent student because equipment costs and smaller class sizes make vocational education more expensive, the state could see that schools were increasing their funding by defining low-cost lecture courses as vocational courses.

Information Disclosure Costs

The legislation appropriated $20,000 for NAU to collect and publish the outcome data. When they started, NAU researchers considered this ample funding for the project. During the first year, however, unanticipated expenses raised the total cost to approximately $50,000 and forced the university to use its own general funds to complete the project. The costs incurred by the Department of Economic Security—mainly for computer time—were minimal (only about $2,000 to $3,000), because the computer program to match completion information to the unemployment insurance data files could be tacked onto other programs and run at very little additional expense.

Over time, the total cost of the information disclosure program in Arizona would have declined. First-year fixed costs for planning the project and developing computer programs were high and would not recur. However, additional funding would have been necessary to match the school completion files to postsecondary education files and military records. Also, to communicate the findings to parents and potential students effectively, it would have been necessary to write and distribute a brochure aimed at this audience.

The Program's Demise

After the first vocational education report, Governor Babbitt left office and was replaced by Governor Mecham. Reportedly, relations between the new governor and NAU were strained, at best. The new Governor cut the state education budget significantly, including the NAU budget. In the budget negotiations with the university, the governor reportedly refused to directly fund the information disclosure project. In a move to force the university to use funds effectively, the governor told NAU to fund the project directly out of its own general funds if it was a priority. The vocational education unit at NAU, which had invested a significant amount of its own money in the project the previous year, decided it could not afford to continue the research without direct funds. Although the law remains on the books, the project fell dormant without NAU's participation.

Adding to the project's political problems, information disclosure never had an organized constituency. The main beneficiaries of the program were potential vocational students and their parents. Many of these people were unaware of the legislation, and the group had no organized representative in state government.

Although the lack of funding directly caused the demise of Arizona program, public and legislative awareness of technical difficulties were contributing factors. Opponents of the program made sure that these difficulties were well covered in the press. The technical problems that caused the most concern were the large number of programs with fewer than ten completers for which no information was published and the fact that the program could not match employment occupations to the field of training. In the words of one observer, "the technical problems did not kill the project, but they sure didn't help."

CONCLUSIONS

Our consideration of the potential benefits of information disclosure and our review of Arizona's experience suggest that improving information about the expected outcomes of

educational alternatives is feasible and that improved information has a good chance of improving student choice and the quality of postsecondary vocational education. More definitive conclusions about the impact of information disclosure must await evaluation of a program that has been in effect for several years.

Because Arizona's information disclosure project was so short-lived, it was not possible to evaluate the impact on student choice. Arizona's experience did show, however, that when an information disclosure project begins, it creates a new forum for schools and educational agencies to consider the quality of postsecondary vocational education. An information disclosure project gives states a reason to address issues such as the consistency of occupational programs across the state. The publication of placement and wage data encourages schools to consider important issues, including the need for stop-out certificates, the responsiveness of programs to local employment opportunities, the relevance of curriculum to skills demanded by local industry, and the effectiveness of student placement services.

Arizona's use of unemployment insurance data as a source of outcome information can serve as a model for other states. These data can provide accurate information on placement and wages at relatively low cost. States must be aware of the limitations inherent in these files, however. Of particular concern are the absence of occupation codes for individual's jobs, the lack of information on wage rates, and missing data on students not employed in jobs covered by the state's unemployment insurance program. If the limits are well understood in advance, states can avoid frustrated expectations. Florida, in a similar program, has demonstrated that it is possible to compensate for at least some of the limitations by searching other data bases and by surveying employers to obtain information on occupations. States might also consider requiring employers to include occupations and wage rates for newly hired employees in their unemployment insurance reports.

The limitations of unemployment insurance data suggest that institutions and state agencies should not rely entirely on this data for information on outcomes. It cannot replace in-depth information about program quality that is gathered from site visits, self-reviews, the accreditation process, and other sources of information available to states and schools. Unemployment insurance information cannot replace students surveys, because only students themselves can report whether they use the skills they learned in school in their jobs, whether they are voluntarily unemployed or working part time, and whether they are satisfied with the training they received in vocational programs. What unemployment data offers that these other data do not is a low-cost means of gathering information on all former students, statewide, including those the schools cannot contact because no current address is available and those who would not respond to a questionnaire.

There are many ways to use unemployment insurance data in conjunction with other sources of data. With a little creativity—as has been exhibited in Florida—states can greatly enhance the quantity and quality of outcome information. Arizona explored (although did not pursue) several strategies for tracking the outcomes of students by using other data bases such as military enlistments, four-year institution student data bases, and unemployment insurance data bases in other states. States could also use the unemployment insurance data base to locate former students so they can be contacted for surveys.

Unemployment insurance data bases are also potentially useful for investigating long-term outcomes of vocational education. For example, the earnings of vocational completers could be tracked indefinitely—at least as long as they remain in the state. Research could also be conducted on job mobility and employment security based on the number of times that persons in each occupational area change jobs. Researchers could even determine whether students worked before entering programs and how their wages compared before and after training. For students not entering postsecondary vocational programs immediately after high school, wages sometimes fall after graduation when they enter new fields. Unemployment insurance data would allows us

to see how long it takes wages to rise to the before-school rate, and how long it takes trainees to recoup their tuition costs.

Although the potential of these data is exciting, an important lesson to learn from Arizona's experience is to expect resistance to the publication of outcome-related information. The implementation process must be carefully thought out. In Arizona, the advisory committee contributed to the high level of cooperation NAU experienced with the schools. Involving public schools, private schools, labor, education, legislative committees, and executive staff is important to ensuring a sound methodology, cooperation in the field, and acceptance of the information when it is released.

Another technique for political survival—one not used in Arizona—is a sound plan for evaluating the effects of an information disclosure project. To get continued support for an information disclosure project, states should plan to document the results. Evaluation should monitor the reaction of students, schools, and organizations. It should assess the effectiveness of dissemination, discovering how many high school students see the outcome report and whether or not the students use the information. The evaluation should assess the reactions of schools to see if the schools view the information as a benefit or an imposition, if school administrators plan changes in order to improve their performance on the measures, if instructors are aware of the reports, and if placement services change to address student employment needs. This information could help states secure continued support for information disclosure projects and provide solid evidence for other states considering information disclosure programs.

CHAPTER FIVE: TOWARD PERFORMANCE-BASED FEDERAL VOCATIONAL EDUCATION POLICY

Chapter One stated that for performance-based policy to be effective, it must meet four requirements. First, it must be possible to define desired outcomes clearly. Second, it must be possible to measure these outcomes accurately and efficiently. Third, measures of performance must affect levels of funding. Fourth, useful information on outcomes must be available for consumers and policy makers. In the first four chapters, we have demonstrated that it is possible to meet these four requirements. Defining and measuring program outcomes, linking them to funding, and reporting to consumers and policymakers are not merely abstract, untested, academic concepts. On the contrary, these practices are present in a wide variety of vocational education and employment training activities. How, then, might one craft a performance-based approach to federal vocational education policy?

To begin, it is important to state clearly the primary goal of adopting a performance-based orientation. Performance-based postsecondary vocational education policy should have as its primary aim stimulating postsecondary institutions to increase the knowledge and skills of students participating in vocational education and to improve their prospects for successful participation in the labor market. Policy should seek to achieve this goal for all students, as well as emphasize its realization for students with special needs.

In seeking to realize this overarching goal, performance-based policy should contribute to a secondary objective—namely focusing policy debates more on issues of outcomes and less on procedural matters. In some respects, the fact that performance-based policy creates a climate for asking hard questions about what postsecondary vocational education should be seeking to accomplish and how best to determine if these aims are met is as important as whatever measurable changes in performance can be attributed to a shift in federal policy. Indeed, if federal policy did nothing more than stimulate a new ongoing attention to outcomes

and to assessing institutional effectiveness on performance measures, it would have accomplished a great deal.

Crafting such a policy will need to heed a number of important lessons that have been learned to date. First, policy should allow states and localities substantial discretion to tailor performance-based policies to best fit their particular circumstances. States vary greatly in how they organize and deliver postsecondary vocational education. Programmatic emphases also differ, reflecting variance in regional and local labor markets and the types of students to be served. Seeking to impose a uniform, highly specific approach to implementing performance-based policy is not likely to succeed.

Second, federal policy should require the adoption of multiple definitions of performance. States should be given considerable discretion as to how they define and measure performance criteria, but they should not be allowed to rely on a single set of criteria (e.g., labor market outcomes) or a single measure for such a set (e.g., placement rate). States should be required to develop measures of both labor market outcomes and educational outcomes and to adopt procedures for evaluating these measures for students with special needs, as well as for all other students. With respect to education outcomes, states should be required to include some measure of value added or changes in institutional performance over time so that performance is not measured simply in terms of highest achievement but also reflects improvement by students and institutions. In this way, gains in performance of even relatively low achieving institutions can be recognized, encouraged, and rewarded.

Third, in linking funding to performance, states should be required to make provisions for adjusting for major factors that affect outcomes but are outside the direct control of vocational educators. Two of the most important of these factors are local economic conditions and student characteristics. In assessing the performance of postsecondary institutions, it is important that the comparisons be made among like institutions facing more or less equal local

economic conditions. Fine tuning the procedures for ensuring such controls will take time and may require technical assistance. Assistance may also be necessary to help states address the difficult questions about how to treat schools in different labor markets or serving different kinds of students. Thus, there may be consensus that the same placement rate should not be expected of an institution confronting a local unemployment rate of ten percent as would be expected of one facing a rate of five percent. How much lower, however, may the placement rate be for the institution dealing with higher unemployment? States may lack the expertise, as well as the data, to answer such questions adequately, and outside help may be needed.

Using these three guidelines—substantial state and local discretion, multiple measures, and adjustments for external circumstances—how could federal postsecondary vocational education policy be made more performance-oriented? There are many possibilities but perhaps it is most instructive to stick with one that would not require any major changes in the basic structure and objectives of the existing Perkins legislation

Introducing Performance Funding into the Carl Perkins Act

It is possible to develop a performance-based federal policy for postsecondary vocational education without modifying significantly the basic purposes and organization of the existing Carl Perkins Vocational Education Act. To do so simply requires a redefinition of how federal funds are allocated within states, shifting away from allocations based on inputs or processes to allocations based on performance. We will illustrate how this might be accomplished. Although our discussion will be limited to postsecondary vocational education, much of what we suggest could be applied to secondary vocational education as well.[1]

[1]We are not implying that there is little difference between ssecondary and postsecondary vocational education programs. On the whole, secondary programs are less advanced and may emphasize acquisition more general academic and job skills. Hence, learning outcomes may figure more prominently in performance-based policies aimed at secondary programs, while labor market outcomes are more heavily weighted in postsecondary policies. The differences tned to be more ones of degree, however, than kind, and the general framework proposed here for postsecondary programs could be adapted to secondary.

Designing the Basic System

The bulk of federal funds for vocational education is distributed under Title II of the Carl Perkins Act, the basic state grants for vocational education, and we will limit performance funding to this part of the legislation. Title II is divided into two parts. Part A reserves 57 percent of Title II funds for supporting programs and services for students with special needs and establishes six "setasides" for different types of students. Part B reserves the remaining 43 percent of funds allocated under Title II for program improvement, innovation, and expansion. Current legislation specifies the funds distribution procedures that are to be used for the 10 percent handicapped setaside and 22 percent disadvantaged setaside, leaving the allocation of the remaining Part A setasides and the Part B program improvement funds up to the states.

It is possible to leave this basic structure of special needs setasides and program improvement funding intact, while requiring states to establish performance funding formulas to replace current funds distribution procedures. This requirement does not necessarily mean that states would have to develop seven different performance funding formulas (one for each of the six setasides and one for program improvement). Rather, a single generic formula could serve all seven types of funding. To illustrate how this might work, let us begin with an example of how Part B program improvement funds might be distributed and then examine how this formula might be used, perhaps with some minor modifications, to allocate funds under each of the Part A setasides.

For allocating program improvement funds, the states would be required to develop a performance funding formula that incorporates a set of labor market outcome variables and a set of education outcome variables. At least one of the education variables that states would be required to measure is program completion. At least one other of the education variables states would be required measure is either value added (in terms of students' knowledge and skills) or improvement over time in an institution's mean score on a measure of educational outcome. Value added measures require pre-testing and post-testing, which may be beyond the present

capabilities of many states. Consequently, federal law should allow the use of a longitudinal measure of change in overall institutional performance, measured only once annually.

To illustrate how a state might specifically implement these general requirements, consider the following example. Assume that a state decides to adopt three labor market variables: number of completers of vocational education entering jobs related to training within three months of program completion, number of completers entering other jobs, and number of completers earning more than twice the minimum wage. Let us call these three variables RELATED, UNRELATED, and EARNINGS, respectively. All three could be derived using information from the state's unemployment insurance files, assuming information on occupation and hourly wage were obtained as suggested in Chapter Two.[2] We stress that the choice of these three variables is for illustration purposes only. States might choose more than three (they would be required to adopt at least two), modify these definitions, or adopt other measures.

Similarly, assume that the state decided to adopt three measures of educational outcomes: number of students completing a vocational education program, the number of students achieving a gain of twenty percent or more on competency-based tests in vocational education programs, and the annual percentage change in an institution's average achievement test scores of completers of vocational education programs. These variables will be named COMPLETERS, COMPGAIN, and TESTCHANGE, respectively Again, we stress the ability of states to adopt different kinds of variables, greater numbers of measures, or modified definitions.

The distribution of program improvement funds, then, would be a function of these six variables, a relationship we can state mathematically as:

[2]In the absence of information on occupation and hourly earnings a state could substitute a variable that simply measured number of completers employed and a variable that measured the number of completers earning twice the quarterly earnings of the average completer statewide.

$$AID_i = f(RELATED_i, UNRELATED_i, EARNINGS_i, COMPLETERS_i, COMPGAIN_i, \text{and } TESTCHANGE_i)$$

This means that federal aid for program improvement (AID) to institution *i* will depend on this institution's scores on each of these six variables. The next step is to specify precisely how these variables will determine the distribution of funds.

There are an unlimited number of possibilities as to how a state might specify the precise formula for incorporating these six variables. To keep things relatively simple, assume that each variable will carry equal weight in the formula. This is equivalent to dividing the program improvement money into six equal portions, and distributing the first based on completers employed in occupations related to training, the second on completers employed in other jobs, etc. Finally, assume that each institution will be funded based on its score on relative to the sum of scores statewide.

These two assumptions permit fully determining the funds distribution formula. The general formula becomes:

$$AID_i = aRELATED_i + bUNRELATED_i + cEARNINGS_i + dCOMPLETERS_i + eCOMPGAIN_i + fTESTCHANGE_i$$

where a, b, c, d, e, and f are dollar amounts per unit of measurement for each variable (e.g., $400 per completer employed in a job related to training). Computing these coefficients is straightforward. For example, assume a state has $6 million in program improvement money to allocate to postsecondary institutions. If each of the six variables has equal weight in the formula, each variable in effect allocates $1 million ($6 million ÷ 6 variables = $1 million per variable). For each variable, the state next computes a statewide sum and divides $1 million by this total to obtain a dollar amount per unit of measurement for each variable. If, for example, in the previous year postsecondary vocational education programs statewide produced 5,000

completers who within three months of completion were employed in jobs related to their training, the state would allocate $200 per completer employed in a job related to training ($1 million ÷ 5,000 completers = $200 per completer). Similarly, if there were another 2,500 completers statewide employed in jobs unrelated to training, the state would allocate $400 per completer employed in a job unrelated to training ($1 million ÷ 2,500 completers = $400 per completer employed in a job unrelated to training). Similar calculations would be made for each of the remaining four variables.[3]

Note that this particular approach results in an institution's receiving more per completer for those employed in unrelated jobs than for those employed in related jobs. The formula, therefore, would create an incentive to place completers in unrelated rather than related jobs, an outcome that probably is not desirable The creation of this possibly perverse incentive occurs because, in this particular example, there are fewer completers employed in unrelated jobs than in related jobs and because both variables are given equal weight. Removing or reversing this perverse incentive could be easily accomplished by assigning different weights to the variables. Formula design, therefore, is an iterative, empirical process that also calls for political or other more subjective judgments about the appropriate weight for each variable included in the formula.

We should reiterate that there is no one best formula, and the approach presented here is merely illustrative. States would be permitted, indeed encouraged to design formulas that, within the general guidelines outlined above, best fit their particular policy objectives and availability of data.

---

[3]Because the state will be working with a fixed amount of federal money, the coefficients will need to be recalculated each year, and the absolute dollar amount of the coefficient will change as the amount of money changes each year and as the statewide totals for each variable change. The changes will, however, always work in the right direction. If the amount of money stays fixed but the number of statewide completers goes down, the amount per completer will rise, increasing the incentive to get students to compete. Alternatively, if the number of completers statewide rises, the amount per completer will decline. Economists will appreciate that this result is consistent with the law of diminishing returns; as the number of completers rises, the state is unwilling to pay as much per completer to make completions rise more.

With minor modifications, mainly to the weights assigned to each variable or perhaps the addition or exclusion of a variable, the general formula used to allocate program improvement funds could also be used to allocate funds under each of the setasides in Part A. However, instead of applying to all students or the performance of the institution overall, measures would be limited to the setaside group in question. For example, the formula for allocating the handicapped setaside would count handicapped completers employed in jobs related to training, handicapped completers employed in unrelated jobs, handicapped completers earning more than twice the minimum wage, handicapped completers, the average competency test score gains of handicapped completers, and average change in achievement test scores of handicapped completers. Computation of the coefficients for each variable would proceed as above with adjustments in the weights made when deemed appropriate.

This same process could be completed for allocating the setasides for the disadvantaged, adults in need of retraining, single parents, men and women completing programs nontraditional for their sex, and criminal offenders.[4] Although states would be free to adopt different procedures for allocating the setaside funds, they would not necessarily have to do so. Hence, what at first blush might appear administratively complex is really quite simple.

A final adjustment will also be needed, namely recognizing that all institutions are not equal and all do not face equal local economic conditions. States will need to decide what indicators of inequality they consider important and how to address these in the funds distribution formula. One possible institutional consideration is resources per student. Other things equal, a higher spending postsecondary institution should be more effective than a lower spending one. If resources are outside the control of vocational educators, states may not wish to penalize lower spending institutions. Therefore, they may choose to reweight the variables to

[4]Definitions of some of the variables used to allocate funds for criminal offenders might be modified somewhat. For example, rather than defining RELATED as employment three months after completion of the vocational education program, a state might define it as employment three months after release from incarceration.

reflect such differences. For example, an institution's completers could be weighted by the inverse of the ratio of its expenditures per student to statewide average expenditures per student. Consequently, completers at an institution spending 80 percent of the statewide average would each be counted as 1.25 (1 + .8 = 1.25) completers, while completers at an institution spending 120 percent of the statewide average would each be counted as .833 completers (1 + 1.2 = .833). A similar procedure could be used to adjust for differences in local unemployment rates.

We do not mean to underestimate the difficulties of making such adjustments or to pretend that these are merely technical matters. Whatever procedures are used must be politically or subjectively evaluated as to whether they are a fair compensation for uncontrollable factors that affect program performance. Any funds distribution procedure, however, makes these judgements either implicitly or explicitly. Thus, to ignore resource differences in funds distribution just as surely introduces a weight, albeit an implicit one, as does the explicit consideration of the appropriate adjustment. Explicit weighting, however, has the advantage of subjecting the process to debate and clarifying the kinds of weighting decisions that have been made.

Multiple measures and adjustments for major influences outside the control of vocational educators are the two major required features of performance funding for federal postsecondary vocational education policy. There are, however, a number of additional refinements that states might want to consider in designing their systems. For example, features that stabilize annual distributions to individual institutions may be desirable. In the early stages of introducing performance funding, there could be large changes from year to year in an institution's allocation. If avoiding or minimizing such large changes is desired, states could employ such strategies as using three-year rolling averages of the data used in the funding system. Averaging over several years smoothes out sharp annual fluctuations. Alternatively, a state might choose to limit the annual increase or decrease in an institution's allocation to a fixed

percentage—ten percent, for example. In short, states would be free to develop whatever technical refinements they deem desirable.[5]

Administering Performance Funding

Currently, the Perkins Act requires states to designate a single state board to oversee the administration of federal funds for both secondary and postsecondary vocational education. In some states, the designated board is responsible for overseeing state and local postsecondary vocational education, but in most states the designated board is responsible only for secondary vocational education.

The desirability of a sole state agency for administering federal aid to vocational education is a controversial topic with a long history of feuding over legislative requirements. Nothing about performance funding for postsecondary programs would inherently require a change in the sole state agency requirement. Just as boards that only oversee secondary vocational education have in the past delegated funds distribution authority to relevant state agencies responsible for postsecondary vocational education, they could continue to delegate this responsibility for designing performance funding procedures.

If the sole state agency requirement is maintained, however, it is important that federal legislation establish a minimum share of Part A and Part B federal funds to be devoted to postsecondary vocational education. Performance funding is not likely to be greeted with much enthusiasm unless it promises a significant amount of funding for postsecondary vocational education programs. There are at least three ways this minimum guarantee could be established.

[5]Federal policy could, of course, restrict somewhat the discretion of states. Policy could offer states a menu of approved technical refinements, which they could elect to use or not use. Alternatively, refinements could require the approval of OVAE.

First, federal legislation could simply specify a minimum percentage for secondary and postsecondary programs. For example, federal law could require that at least 40 percent of the funds go to secondary programs and 40 percent go to postsecondary, leaving the sole state agency free to decide how the remaining 20 percent is divided. This approach has the advantage of simplicity and probably would not provoke much controversy in most states.[6] On the negative side, the division of the remaining 20 percent might still be biased depending on the state and local responsibilities of the sole state board.

Second, federal law could specify a minimum postsecondary share as a percentage of total state and local spending for postsecondary vocational education. For example, the law could require an allocation to postsecondary of at least 5 percent of total state and local expenditures for postsecondary vocational education. This approach has the advantage of ensuring that the postsecondary allocation is large enough to affect performance. It also adjusts automatically for differences among states in the size of postsecondary programs relative to secondary. It is possible, for example, that in some states where postsecondary programs are relatively large compared to secondary, the 40 percent minimum suggested above would produce an insignificant amount of funding for postsecondary vocational education. The major disadvantage of this approach, however, is that many states cannot determine state and local expenditures for postsecondary vocational education. Accounting is not done programmatically, and in the absence of good accounting, a guarantee of federal funds equal to 5 percent of total state and local expenditures would invite inflated estimates. Hence, rather than requiring a 5 percent allocation, federal law may want merely to suggest this figure as a guide to states in determining how the division of funds should be made.

---

[6]Presently, some states do not allocate any federal vocational education funds to "postsecondary" institutions, and these are likely to resist requirements to do so. Typically, these states do allocate funds to institutions serving "adults," and they could be required to adopt performance funding for adult programs. Alternatively, states could be permitted to apply for an exemption from performance funding in the event they can provide good reasons for not allocating funds to the postsecondary programs. Still another option, as discussed below, is to leave the decision to the governor of each state.

Third, federal law might give responsibility for determining the division to the governor of each state. Indeed, this option could be combined with either of the first two, so that the governor would determine whether any amount of federal funds, in addition to the minimum required by federal law, would be allocated to the secondary or postsecondary systems. Involving the governor in this way has several advantages. First, given that in most states the sole state agency often is predisposed in favor of either secondary or postsecondary education, the governor is likely to make a less biased decision about the appropriate division of funds. Second, the governor is likely to command a broader view of the full array of job training, economic development activities, and other state policies that should be coordinated with postsecondary vocational education. Third, because the governor enjoys more autonomy from postsecondary education than the overseeing governing boards, the governor may be in a better position to exert leadership in urging accountability and implementing performance funding. There may be disadvantages, however. Some governors may be poorly informed about secondary and postsecondary vocational education. Moreover, introducing one more player into what is already a controversial issue in many states may further politicize the division of funds with no real benefits.

However the division is ultimately made, responsibility for developing and administering performance funding should be located with the governing body closest to the postsecondary vocational education system. In most states, where community colleges or vocational technical institutes are the primary providers of postsecondary vocational education, this approach should pose no serious problems. However, in states where secondary school systems have responsibility for operating adult vocational education programs—through area vocational schools, for example, or adult education programs—administration will be more complicated. As federal law cannot very well anticipate the administrative idiosyncrasies of postsecondary vocational education in all states, it would be best to leave the states free to determine how

performance funding will be developed and implemented. Here again a role for the governor may be appropriate.

As under current law, states would be required to submit to the Office of Vocational and Adult Education a State Plan. In the first year, states should be required to set forth the procedures they plan to follow for developing performance funding; states should not be required to implement performance funding until the second year. The first Performance Report would describe the performance funding system that would be implemented during the second year of operating under the new legislation. Subsequent Performance Reports would report, by institution and statewide, data on the variables used in the performance funding system. The report would summarize trends in the performance measures, highlight outstanding accomplishments, and describe any actions taken by the state to deal with instances of poor performance.

Technical Assistance from the U.S. Department of Education

To assist states with the design and implementation of performance funding, the U.S. Department of Education should be directed to develop several prototype models of performance funding and to offer technical assistance to the states. These prototypes, while not systems that states would be required to adopt, could be adopted or modified by states choosing to do so. These prototypes should, at a minimum, set forward the following:

- definitions of multiple measures of labor market and education outcomes;
- likely sources of existing data for performance measures and possible procedures for new data collection;
- approaches to competency testing and sources of information on competency testing and competency-based curricula;
- procedures for assessing access in terms of program outcomes;
- procedures for tying performance to funding, including examples of workable funds distribution formulas;

- procedures for adjusting the allocation of funds to control for external factors affecting program outcomes, such as institutional resources or local economic conditions;
- approaches to reporting performance to consumers and policymakers.

The Department could conduct a series of regional workshops on performance funding where these prototypes could be presented and discussed. Additionally, the Department could make technical assistance directly available to states needing help with system design, especially with some of the more complicated aspects of formula design and controls for external factors affecting program outcomes.

The Office of Vocational and Adult Education (OVAE) would be responsible for reviewing and approving the performance funding systems proposed in the State Plans. Technical assistance should be available to states proposing systems with technical deficiencies. OVAE would also monitor Performance Reports and prepare an annual report to Congress on changes in performance from year to year.

Uses of Funds under Performance Funding

Current law is quite prescriptive as to how federal funds may be used under Parts A and B of Title II. While these restrictions on the uses of funds could be maintained under performance funding, maintaining them is not required and might, in fact, be counterproductive. One of the advantages of performance funding is that by emphasizing the achievement of particular outcomes, less attention need be paid to how these objectives are met. Indeed, with a well developed system of performance funding, the federal government might be indifferent as to how federal funds are spent, as long as there is a demonstrated improvement in performance. Matching requirements, excess cost calculations, and the detailed lists of permitted uses could all be eliminated under performance funding. Federal law might simply require that federal program improvement funds be spent on postsecondary vocational education programs and that setaside funds be spent on programs and services for each of the

respective special needs groups. Within these very general constraints, postsecondary institutions would be free to spend these funds on vocational education as they saw fit.

States have long sought to be free of the detailed prescriptions for the uses of federal vocational education funds. Performance funding would provide the federal government with the assurance that if these restrictions were lifted, the money would not simply be left on the proverbial stump. Postsecondary institutions would have to perform to receive federal funds, and those performing better than others would receive a larger relative share of the federal assistance.

Data Requirements

By allowing states considerable discretion as to how they design performance funding, the proposal outlined above avoids imposing universal definitions of performance outcomes. Hence, the proposal does not impose any specific new data requirements upon the states. Nevertheless, states can be expected to encounter difficulties with the availability of data, and consideration should be given to some federal assistance for addressing new data needs. As these will vary by state, a competitive grant process to obtain federal assistance with data collection might be the best approach to addressing these needs.

The two critical types of data will be information on labor market outcomes and education outcomes. With respect to labor market outcomes, states should be encouraged to make better use of the unemployment insurance files. Adding information on occupation and earnings at the time of hiring would make these data files substantially more useful for tracking labor market outcomes. As long as this collection is limited to occupational status at the time of hiring and employers are not required to keep the information current, the addition of this information to the files should not impose much additional data burden. The federal government could support pilot tests of adding these variables in several states. Additionally, it could fund

experimentation with interstate sharing of unemployment insurance data to improve information on out-of-state employment histories for completers of vocational education programs.

Unemployment insurance data are more or less standard across the states, and with the improvements suggested above, these files would constitute a good universal source of follow-up information on the labor market outcomes for participants in postsecondary vocational education. Unfortunately, a common source of data for information on education outcomes is not extant. In meeting the requirement that at least one of the educational outcome variables be a measure of completion and that another be a measure either of value-added or institutional change over time, states will need to consider what information from their own data files can best serve these requirements.

Gene . ..y, "completion" should mean "*demonstrated and certified* acquisition of the basic and job specific skills needed to perform effectively in a job related to the student's training." Institutions would be able to count as completers any student who satisfied this definition. Precisely what constituted "demonstrated and and certified acquisition" would be left to the states, and states could further delegate res- nsibility to individual institutions to determine the procedures for demonstrating proficiency and for institutional certification. Completion, therefore, could mean anything ranging from successfully passing a single test to successfully completing a major program of study involving multiple courses and multiple benchmarks along the way. Thus, if short-term participation is indeed all a student needs to brush up skills for effective performance on a training related job, postsecondary institutions would be permitted to count such a student as a completer, provided the institution determined that before leaving the student indeed possessed the necessary skills.

To meet such a requirement, most postsecondary institutions will need a well developed system for assessing student's abilities at the time of entry to training, for monitoring their progress, and for providing necessary support services. They may also need stronger

placement services and follow-up activity to determine that they are correctly assessing students' abilities to perform effectively on the job. While many postsecondary institutions possess data systems to support such activities, many do not. Federal legislation should encourage the development of such data systems and provide technical assistance through the U.S. Department of Education.

Likely Objections to Performance Funding and Possible Responses

Performance funding for federal postsecondary vocational education policy is likely to generate a number of objections. In this section, we anticipate some of these and offer some responses.

1. Performance funding is a lofty ideal but cannot work in practice. Outcomes will be defined too narrowly and will fail to stimulate attention to education's most important mission—development of the whole mind and a comprehensive range of cognitive skills.

Educators have long insisted that the most important outcomes of education are unmeasurable and that assessing education on the basis of what can be measured trivializes teaching. Without question, measurement is imperfect and can be applied more easily to some types of outcomes than to others. Performance funding, if it is to be successful, must grapple with the difficult questions about what vocational education is seeking to accomplish; it cannot mindlessly pounce upon certain indicators merely because they are easily measured or readily available. Moreover, the effort to develop performance funding should produce healthy challenges to some of the conventional approaches to defining and measuring performance in vocational education. For example, "competencies" and "competency-based curricula" take many forms in vocational education. Narrowly defined in terms of rote, job specific skills devoid of cognitive understanding, competencies are not likely to constitute very desirable measures of performance. There is nothing inherent in competency-based curricula, however, that requires such narrow conceptions of student skills, and indeed the best competency-based programs stress demonstration of real understanding rather than memorized mechanical skills.

There is no substitute for getting clear about educational objectives and how best to measure progress toward them. That this task is difficult, controversial, and subject to constant reevaluation and change cannot be disputed. Performance funding will force educators to get on with the task rather than hide behind empty claims that what they do cannot be appropriately assessed. If it cannot, what are grounds for continuing the enterprise at all?

2. Performance funding will encourage "teaching to the test," at the expense of inculcating more important knowledge and skills.

If the desired outcomes are correctly defined and if tests measure achievement of these outcomes with reasonable accuracy and consistency, then teaching to the test is precisely the kind of teaching one would want to encourage. Objecting to teaching to the test implies that either the test is invalid or that objectives have been improperly specified. If performance funding challenges the validity of testing instruments or helps to clarify what objectives are appropriate, its presence should be welcomed.

3. Performance funding will shift federal dollars to the most effective institutions, which will tend to be those that are the least in need of additional resources. The rich will get richer and the poor poorer.

Performance funding need not be designed to reward only the highest achieving institutions. Rather it can be designed to reward those displaying the largest gains in performance. As the highest achieving institutions have the least amount of room in which to improve, they will not necessarily be recipients of the most funds. Indeed, the approach suggested above would require states to adopt at least one measure of value added or institutional improvement over time to ensure that institutions presently performing sub par would be eligible for federal funds. They must, however, demonstrate improvement. Additionally, it requires states to make adjustments in distribution formulas for external factors affecting performance. In short, it is possible to develop a level playing field with appropriate handicaps that ensure that all postsecondary institutions compete fairly for federal funds.

4. Performance funding will encourage creaming, denying access to those students most in need.

Although a poorly designed performance funding system might encourage creaming, there is nothing inherent in performance funding that would produce this result. Performance funding can just as easily be used to create incentives *not* to cream as to cream. Heavily weighting the completion of students who are the least likely to succeed, for example, creates powerful incentives to serve these students well. Similarly, be maintaining the existing setasides, the performance funding proposal described above constrains the range within creaming might occur. For example, regardless of the specific form that performance funding might take, at least 22 percent of the federal funds would still be reserved for programs and services to disadvantaged students. Institutions would simply earn these funds based on performance measures rather than measures of inputs. Finally, performance funding is not likely to affect more than 5 percent of the revenues an institution receives for postsecondary vocational education. Most of the institutions general purpose revenue will continue to be based on some measure of FTE, and an institution is unlikely to deny access to gain an additional 5 percent of revenue, when this means sacrificing the other 95 percent.

5. The federal funds are not likely to account for more than 5 percent of total federal, state, and local spending. The states can adjust the distribution of state funds to offset any reallocation of federal funds that might result from performance funding. Performance objectives will, therefore, be thwarted.

While this could occur, it is a problem that will plague any federal policy regardless of whether it is outcome- or procedure-based. Performance funding is not likely to prevent any state that desires to resist performance measurement from doing so. It will, however, facilitate states that want to promote better accountability and constructive discussions about the goals for postsecondary vocational education.

6. Under the 1976 Amendments, states were given substantial discretion in the design of funds distribution procedures. The resulting formulas were often poorly designed and subject to serious technical flaws. The discretion proposed for the development and implementation of performance funding would simply repeat this history.

Successful development and implementation of performance funding will depend on the U.S. Department of Education's developing good prototypes for consideration by the states. The Department must also be prepared to provide technical assistance to states. Neither of these requirements was met during implementation of the 1976 Amendments.

7. Performance funding will lead to a lowering of standards, as institutions compete more fiercely for performance-based dollars—i.e., institutions will find that the easiest way to increase the number of completers is to make it easier to complete.

Any funding system, whether performance-based or not, can produce perverse behavior. Thus, an FTE-based system may encourage institutions to generate unnecessary "seat time" to increase FTE or engage in misleading advertising to increase enrollments. There are at least two steps that can be taken to ensure that performance funding minimizes undesirable behavior. First, encouraging the use of multiple measures of performance will reduce the possibility for any one measure to dominate an institution's efforts to improve performance. If chosen wisely, multiple measures will often provide a built-in system of checks and balances. For example, if labor market outcomes include measures of both placement and earnings, efforts to maximize student earnings will generally favor longer-term, more in-depth training. Thus, concern about earnings will help to offset the temptation to emphasize short-term, quick turn around training that might increase placement rates.

Second, the selection and definition of multiple performance criteria can be subjected to close scrutiny by employers and outside evaluators. Indeed, it may be desirable to require employers or state technical committees to review and approve performance standards adopted by postsecondary institutions. At the very least, the state should monitor the employment outcomes of students certified by postsecondary institutions as having completed a vocational education program. Institutions whose completers consistently perform poorly on such labor

market outcomes as placement, duration of employment, and earnings should be flagged for program review and technical assistance.

Conclusion

It is possible to define desirable performance objectives for postsecondary vocational education, measure them with reasonable ease and efficiency, tie them to funding, and report them to consumers and policymakers. Moreover, adopting performance funding need not require major revisions of the existing Carl Perkins Act. The basic structure could be maintained, while altering the funds distribution procedures used in the major pieces of the legislation. With performance funding in place, much of the emphasis by current law on matching, calculating excess costs, and complying with restrictions on the uses of funds could be eliminated. Accounting for federal funds would be simplified.

Developing and implementing performance funding as outlined above would certainly encounter difficulties. We do not mean to gloss over the extent of start-up time and a number of technical problems that will need to be addressed. These problems, however, are not unique to performance funding. Any well crafted federal policy, whether performance-based or not, will require time to implement and refine.

The great advantage of performance-based policies is that as problems are encountered with implementation, they are problems about issues of central concern to the effective operation of the postsecondary vocational education enterprise. Performance funding creates the climate for encouraging important debates over what the objectives of postsecondary vocational education should be, how these aims should be defined and measured, how well they are being realized, where the system is successful, and where it needs improvement. By focusing the attention of the system on outcomes, a performance-based federal policy for postsecondary vocational education stands a good change of realizing the two long held aims of federal vocational education policy, improved programs and improved access for all students.