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AUTHOR Clune, William H.
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ABSTRACT

Intended as a proposal for a fundamental reorientation of the Carl D. Perkins Vocational Education Act, this document suggests a new model for the federal role in vocational education aimed at program quality and improvement rather than at the distribution of funds and the provision of ancillary services. An introduction explains the scope and aims of the document, and a short conclusion section argues for viewing vocational education as a system deserving of wholesale reform rather than a piecemeal effort. In between, section 1 notes implications of the state and local education reform movement of the 1980s that are relevant for the reform of secondary vocational education, and section 2 describes the proposed model itself. The model recommends that the federal government avoid direct regulation and instead adopt incentive grants for state governments to engage in broad-scale reform of vocational education under federal guidelines; the establishment of a national task force to develop standards and options regulating course selection, course content, indicators of performance, access of special groups, and governance; and establishment of a new agency with authority over the incentive grants and capable of making substantive judgments, under guidelines, about educational quality. The document concludes with a 53-item bibliography. (CML)

REFLECTIONS ON THE FEDERAL ROLE IN VOCATIONAL EDUCATION: LESSONS FROM THE STATE AND LOCAL REFORMS OF THE 1980'S

William H. Clune

February 3, 1989

***DRAFT: NOT FOR QUOTATION OR DISSEMINATION**

Table of Contents

REFLECTIONS ON THE FEDERAL ROLE IN VOCATIONAL EDUCATION: LESSONS FROM THE STATE AND LOCAL REFORMS OF THE 1980'S

William H. Clune
February 3, 1989

Introduction: Scope and Aims of this Paper

The purpose of this paper is to suggest a new role for the Federal government in vocational education, in effect, to design a proposal for a fundamental reorientation of the Perkins Act. As a consequence of research on vocational education by the National Assessment of Vocational Education and other groups, strong dissatisfaction has emerged about the failure of the Perkins Act to achieve either of its two principal aims: the encouragement of quality, productive vocational education; and increased access to quality vocational education by groups with special needs (the educationally disadvantaged, females, handicapped, etc.).

Responding to these concerns, this paper suggests a design for the federal role aimed at program quality and improvement rather than the distribution of funds and provision of auxiliary services. In accordance with its assigned scope, the paper concentrates almost exclusively on secondary schools, recognizing the need for coordination with postsecondary education and, to some extent, job training programs, e.g., the Job Training Partnership Act (JTPA). The focus on secondary education is based on two considerations: the need for a topic with manageable scope and focus, and the experience of this author conducting research in the Center for Policy Research in Education (CPRE) on the state and local reform movement of the 1980's, especially policies aimed at secondary schools (Clune, 1987; Clune & White, 1988; Clune, with White & Patterson, 1989; Fuhrman, Clune & Elmore, in press).

My basic recommendation is that the federal government encourage the states through incentive grants to undertake a new wave of reform aimed at upgrading vocational education and coordinating vocational and academic requirements (especially the more rigorous requirements enacted during the reform movement). The new reform movements would follow federal guidelines which themselves would be modeled on the best of the 80's reforms (with their emphasis on educational content and performance). Thus, the recommendations envision a kind of federal, vocationally oriented Nation At Risk (National Commission on Excellence in Education, 1983), this time backed with federal financial aid and federal requirements.

The proposals if adopted would represent a wholesale change of direction for the Perkins Act in two somewhat divergent directions: on the one hand, deeper into the heart of the educational process (educational content) and stronger methods of performance accountability; on the other hand, away from direct regulation of state and local education toward a role of the federal government as initiator of state standard-setting and state educational improvement activities (through incentive grants for state activities under federal guidelines).

In one sense, the move into traditional areas of state and local concern (quality of education) is offset by eliminating the direct regulatory role of the federal government and substituting greater responsibility on the part of the states. In another sense, the model proposed here of the federal government encouraging state control seems to me simply the most cost-efficient method of leveraging a large amount of reform effort from a limited supply of federal aid, regardless of the nature of federal goals. The recommendations also reflect growth in the capacity of the states to undertake programs of educational improvement, growth occurring substantially as a result of the reform movement of the 1980's.

The rest of this paper has two main parts. Part I discusses the reforms of the 1980's and what can be learned from them about possible reforms of vocational education. Drawing on the lessons learned from Part I, Part II recommends a new approach to the federal role.

I.
A MODEL FOR THE FEDERAL ROLE: THE STATE AND LOCAL EDUCATION REFORM MOVEMENT OF THE 80'S

In my discussion of the federal role in Part II, I will be recommending that the federal government encourage the states to undertake a second, more limited reform movement aimed at upgrading vocational education and coordinating vocational education with academic requirements. Thus, the reform movement of the 80's is relevant for two reasons: as the model for the vocational requirements themselves and background for the task of coordinating academic with vocational requirements. As discussed below, neglect of vocational education was a flaw in the reform movement. We should be careful not to repeat that mistake in a subsequent reform of vocational education and remember the need to coordinate the effects of the two reform movements as they impinge on the same regulated institution (the American high school).

Given that the 80's reforms are a model for the federal role proposed in this paper, it is important to review specific reform policies adopted in some detail. However, before looking at the actual policies that comprised the reforms it will be useful to take a brief look at some more general connections between the 80's reforms and current concerns over vocational education.

Connections Between the 80's Reforms and the Current Concern Over Vocational Education

The state and local reforms of the 80's anticipated the current discontent with the Perkins Act. The reforms arose out of dissatisfaction with results of an earlier emphasis on inputs (salaries, state aid, teacher certification) and process (governance, school improvement without performance criteria, etc.). Likewise, the strong emphasis of the reforms on educational content and performance parallel contemporary recommendations by scholars for vocational education.

Furthermore, the new agenda was pushed by a new set of actors quite similar to the coalition pushing for reform of vocational education: business groups concerned with productivity, reform Governors, and activist state legislators. One could even explain the phenomenon of activist local district superintendents (which we observed in our CPRE research) on the basis of increased pressure to produce results in changing economic and social conditions (for example, the need to solve the problems of large cities).

Given the pervasive background of concern about economic competitiveness, it is strange that reforms of vocational education should emerge late in the process. To some extent, this oversight probably results from the fragmented and often incoherent process of making educational policy in the United States (see Cohen, 1983) (in this case, with vocational education assigned to a separate group of decision makers). But the lack of attention to vocational education in the 80's reform movement probably also reflects a deep-seated ambivalence in the United States about the quality and value of both academic and vocational education.

Some scholars believe that the comprehensive high school, which was one target of the reform movement, is itself a reflection of unresolved, egalitarian-elitist conflicts between academic and vocational goals for education and that the compromise came to represent the worst of both worlds (combining weak academics with weak vocational training) (see Hamilton, 1984). Unfortunately, the same lack of clear thinking and decisive policy which created mediocrity in the comprehensive high school (Powell, Farrar & Cohen, 1985) probably perpetuated itself in the mostly unanticipated conflict between the 80's academic reform movement and vocational education. One truly unfortunate possibility is that the reform movement sometimes resulted in substitution of weak academic courses for strong vocational courses (see Clune, with White & Patterson, 1989).

Because of its relevance to the topic, in a subsequent section of this paper I provide more detail on some of the conflicts between the 80's academic reform movement and vocational education.

Justifications for Policy Based on Content and Performance

Before discussing details of the reform policies, it is important to consider at least briefly the justifications for the new emphasis on educational content and performance. Of course, bad programs can be created under these labels --misguided mastery learning may have been an example (forcing large numbers of children into programs of rote memorization, drill and practice, and passive direct instruction, at the expense of higher order thinking and active problem solving) (Slavin, 1987). Under ideal conditions, however, policies aimed at more rigorous content and higher levels of performance are supported by basic research on teaching and learning, as well as research on educational policy, and have these advantages:

- Systematic upgrading of the content of education seems to be a powerful method of producing educational results. Research on opportunity to learn supports the proposition that children learn what they are taught and do not learn what they are not taught (Raizen & Jones, 1985; Wiley & Harnischfeger, 1974; Wolf, 1977).

- The link between content and learning holds for low achieving students as well as high achieving students. Contrary to ideas about hierarchies of knowledge, low achieving students can learn higher order content if they are exposed to it (learning less of it, perhaps, but still benefitting greatly from the exposure) (Smith & O'Day, 1988).

- Other approaches to educational policy (e.g., the emphasis on process and inputs) do not work well as a method for increasing performance. Attempts to improve education through changes in finance, teacher characteristics, and enrollment measures have largely failed because of the tenuous relationship between these variables and student achievement (Smith & O'Day, 1988).

- While the debate on the relationship between higher standards and dropping out is not settled conclusively, it is clear that, under the right conditions, high standards and exciting content can serve to motivate low achieving students and keep them in school, rather than driving them away. An important condition may be low levels of educational and social stratification in the school, absence of teachers who disapprove of the students, etc.. As with mastery learning, there are standards and there are standards (Alexander, Entwisle, & Thompson, 1987; Bryk & Thum, 1988).

- Bureaucratic systems need performance measures and incentives to stimulate effort and achievement. In all organizations, it is important to establish a counter force to the natural tendency of measuring success by level of resources. Markets provide such incentives in market systems, but public systems require explicit attention to performance incentives within the organization. A debate exists about the best method of creating incentives, for example, through external measures of accountability or the kind of school improvement which unleashes the energy and engagement of the school staff (Levin, 1988). I discuss this issue briefly below in a sections on indicators and alternatives to policies based on content and external accountability. Basically, I think that the proper external accountability measures can reinforce organizational development and are often used in exactly this fashion.

- An emphasis on performance can have an especially healthy effect on calling attention to educational failures for underserved groups. Explicit attention to minimum educational standards and the availability of quantitative, easily understandable data prevents sweeping the problems of disadvantaged populations under the rug and the "solving" of problems by ignoring them.

- Performance standards can stimulate research on what works. For example, if an important goal is teaching first graders to read, researchers can keep experimenting with methods until the goal is achieved. Furthermore, when the goal is achieved it is much more persuasive because of its demonstrated research base (Slavin & Madden, 1988). Another example is continuing education for teachers. The emphasis on content and performance has forced attention to training which actually changes teaching behavior in desired directions (Darling-Hammond & Berry, 1988).

- Even contentious and divisive debate can be beneficial in the end. For example, early attempts at assessing teachers have been vehemently criticized for badly missing the mark; but recent progress toward more sensitive and realistic assessments probably would not have developed without the push for performance (this sometimes called the "foot in the door" argument for initially misguided educational policies) (Peterson & Comeaux, 1987).

A Profile of the Most Common Policy Instruments of the 80's Reforms

In this paper, I take the position that the distinctive characteristic of the 80's reforms was an emphasis on educational content and performance. In a subsequent section of the paper, I discuss the relationship of content/performance-type reforms to other issues on the reform agenda (especially teacher professionalism, choice, and decentralization).

My approach in this section of the paper is to describe each relevant policy instrument in the 80's reforms and then discuss its possible application in vocational education. In a later section of the paper, I will make specific recommendations for federal policy, drawing on these discussions as background.

Student Course Selection

The most common policy instrument of the reform movement (adopted by some 45 states) was increased high school graduation requirements, especially the addition of an extra math and extra science course (often also an extra social studies course, foreign language, fine arts, physical education, and state required electives). High school graduation requirements were intended to make the high school curriculum more uniform and academically demanding and to increase basic achievement levels. The graduation requirements seem to have affected mainly middle and low achieving students who previously did not take as many academic courses. However, course selection of college bound students was strongly affected by increases in university entrance requirements (at least in states with a strong pattern of attendance in the state university system).

Technically, students would not need to select the prescribed courses if they did not intend to graduate from high school or attend college. Indeed, such requirements have little effect on high school dropouts,

especially those who drop out early (as a great many do). But strong requirements have an immediate impact on both the offerings of the high school (which can only afford to offer so many courses) and the selections of all students (who are guided into required courses). The stricter the requirements, the more that the so-called core curriculum becomes, in fact, a completely prescribed curriculum. (This is especially true of low achieving students who flunk courses and must retake core courses rather than take electives.)

The analogy to graduation requirements in the case of vocational education is not clear. A vocational diploma has its own requirements. But when policy is aimed at selections of relatively few courses (for example, a set of 3 logically related, cumulative courses), what reward or penalty can be attached to the attainment or non-attainment of the sequence? One possibility directly analogous to graduation requirements is the granting of an approved vocational certificate (which also could be conditioned on attaining prescribed vocational competencies). Several of the background papers suggest financial incentives for each student completing the sequence. This is a possibility, but in the section below on indicators, I take a position favoring diverse incentives oriented toward school-wide improvement on multiple indicators rather than financial incentives tied to particular indicators.

Course Offerings

Graduation requirements and other controls on student course selection have a strong indirect influence on course offerings (schools must offer what students must take). But many states also regulate course offerings by mandating that schools must regularly offer a prescribed minimum set of courses. Given graduation requirements regulating the core curriculum, the effect of regulating course offerings is to guarantee the availability of designated electives (for example, a prescribed set of advanced courses in mathematics).

For vocational education, the option of regulating course offerings is potentially quite important because of the limited usefulness of graduation requirements. It is most unlikely that all high school or even all vocational students would be required to take a prescribed set of vocational courses analogous to the core academic curriculum. As suggested above, students might be required to take various specific sequence of courses in order to earn vocational certificates of different kinds. But nothing in that requirement would guarantee that the necessary courses (presumably a variety of course sequences) actually was offered by any school available to the student.

The option of a minimum qualified program of courses is especially attractive to the extent that policy pushes in the direction of schools specializing in vocational education. The same economies of scale and institutional expertise which allow such institutions to provide superior programs (see Benson, 1987), give them the capacity to respond to aggressive, quality-oriented state minimum standards.

Course Content

Strictly speaking, rules just discussed about course selection and course offerings control course labels (a course called "General Mathematics I," a course called "Spanish III," etc.). States, districts and schools have always gone beyond labels; but the 80's reforms involved a new level of concern over course content.

Policy instruments adopted to define and influence course content included curriculum guides, textbook selection, and standardized subject matter tests (analogous to the New York State Regents examinations). The effort to harmonize all three types of instruments (guides, texts, tests) is called "curriculum alignment" and is thought to represent a much higher degree of control and rationality than any of the elements in the absence of the others.

The value of controls over course content is subject to debate, but reformers offer a number of quite plausible reasons for central control over curriculum: technical expertise (the e.g., ability of experts to design a superior math course); economies of scale (wasted motion in designing and redesigning courses); the need for uniform course offerings (especially with high degrees of student mobility); and the tendency for watering down of courses in some districts and schools (concerns over minimum quality). The extent to which such controls interfere with superior teaching probably depends more upon the content of the curriculum and the kind of controls than the presence or absence of controls in the abstract.

I am not clear about how far states have gone in regulating the content of vocational courses, either as part of their general curriculum reforms, or as part of a special effort directed at vocational education. However, a number of the justifications for central control of the curriculum do seem applicable to vocational education (minimum quality, uniformity, technical expertise). Consequently, on the surface, at any rate, the case for central quality control of the content of vocational courses seems strong.

Student Testing

The phrase "student testing" meant many different things in the reform movement and educational policy generally: minimum competency testing (including high school exit exams); the testing side of the alignment triad of guides, texts, and tests; standardized achievement tests (ITBS, CTBS, Stanford Achievement Test, ACT, SAT); specialized tests, such as Advanced Placement (detailed standardized subject matter exams at advanced levels); multidisciplinary testing for special education, and so on.

Two important issues for vocational education are competency exams and standardized subject matter exams, especially the issue of how to use such tests if adopted. Competency exams refer either to a distinct body of functional (e.g., workplace) skills, or to minimum acceptable levels of

achievement, or both. Subject matter exams cover the content of required and elective courses and are, in the words of a New Yorker, "curriculum driven." Since competency exams tend to drive the curriculum even if they are not intended to do so (e.g., by the creation of special, remedial classes), one should probably drop the distinction and think simply of "subject matter exams."

The case for some kind of standardized subject matter examination system is fairly strong, although the ideal form of the exams and method of standardization is open to debate (see Archbald & Newmann, 1988, on alternatives to traditional tests such as portfolios and demonstrations; the English system of standardized, but not norm referenced, essay exams also is worth looking at).

Subject matter exams can serve at least three functions: a check on the controls over course content (in effect, an incentive for schools and teachers to cover the material); an extra incentive for student performance; and an indicator of overall system performance (in addition to other indicators, like course credits and attendance). Passing grades in such tests can be used as a condition for credit, as a condition for a diploma or certificate, or simply as an indicator of educational quality. Apparently, states have been quite active in developing tests for vocational competencies but less active in deploying the tests or even coordinating them with controls over course content and course materials.

A second major reform development in student testing is worth considering for its applicability to vocational education: state assessments requiring higher order thinking. States like Connecticut and California are designing tests which require active, complex problem solving rather than rote memorization. Since problem solving is one of the main objectives of proposed reforms of vocational education, it will be important to consider the type of skills called for by any subject matter exams adopted.

Indicator Systems and Monitoring

The growth of indicator systems and monitoring is one of the most important and least visible aspects of recent educational reform. Low visibility is almost inevitable because of the variety and complexity of the systems. The word "indicator" generally is reserved for data which is used for research and educational planning but not for evaluation and sanction of performance. "Monitoring" does refer to evaluation and sanctions, whether rewards or punishments, individuals or groups (e.g., teachers, districts, schools). Vocational education needs both indicator and monitoring systems, but I will focus mostly on monitoring because of the emphasis of this paper on educational improvement and performance. For the same reason, of 3 possible types of monitoring, compliance, performance, and diagnostic (Richards, 1988), performance monitoring is the most relevant to this paper.

Also contributing to obscurity is the fact that there are a series of quite distinct (but often confused) policy issues to be considered with

regard to indicators and monitoring. I will discuss the following issues in this section:

- Single or multiple measures of quality;
- Criteria: relative or absolute, minimums or maximums;
- Level of aggregation (student, teacher, school, district);
- Sanctions: publicity vs. financial incentives, individual vs. group.

Full discussion of these issues would require a very large paper in itself. To keep the discussion manageable, I will reflect mainly on what I perceive to be the most common approaches adopted in school improvement schemes with a proven record of performance. I consider the system adopted by the State of South Carolina to be the most sophisticated, thought-through and field tested in the country (see annual reports on the Education Improvement Act from the South Carolina Board of Education, 1987, 1988a, 1988b).

Single or Multiple Measures of Educational Quality

It is difficult to imagine an acceptable monitoring system which relies on a single measure of performance. All of the successful systems I am familiar with rely on multiple measures (for example, not just course taking but achievement, not just courses and achievement but attendance, participation, and satisfaction with programs). There are several reasons for relying on multiple measures:

- Educational systems usually have multiple goals which can be maximized in different acceptable ways. (Put differently, there is usually no political consensus around single goals.)

- A small number of measures of performance greatly exacerbates problems of reliability because the units evaluated can concentrate resources to look good on particular measures (e.g., teaching to the test). Conversely, it is much more difficult to look artificially good on a variety of indicators all at once.

- Multiple indicators allow evaluators to check validity and do analyses of problems by examining the relationship among indicators (e.g., the relationship of coursetaking and achievement).

Criteria of Success: Relative or Absolute, Minimums or Maximums

Most successful systems seem to use a combination of relative and absolute goals. Absolute goals often are necessary for the goals to be meaningful (literacy, language fluency). On the other hand, there is a relative aspect to almost all goals (exactly how literate); and, more important, states, districts and schools start from very different places and consequently need different intermediate goals. In other words, even when the ultimate goal is fixed, relative, intermediate goals are required for increments of school improvement.

The kind of logic applies to minimums and maximums. States often establish a range for various goals, for example, at least 10% and up to 35% of students taking Advanced Placement courses.

Level of Aggregation

The next issue is level of aggregation (whether results are calculated and reported by student, classroom, teacher, school, district or state). One frequent basis for setting the level of aggregation is where policymakers desire to place responsibility for results and improvement. Students may be required to pass tests to earn credit as an incentive for working hard in the course. Test scores may be aggregated across by classroom and teacher to see if teachers are responsible for allowing particular groups of students to fall below prescribed minimums. The most common level of aggregation for indicators probably is the school level, under the general theory of school improvement (the idea that people in schools can come together and design methods to reach a wide variety of goals). State and district goals probably are more useful as an overview of progress across larger populations than as a measure of responsibility and corresponding educational improvement (in other words, as indicators rather than as monitoring).

Sanctions

I found the NAVE background papers somewhat narrow in their emphasis on financial incentives in monitoring. Real monitoring systems use a wide variety of sanctions: publicity, jawboning, praise, administrative consultations (e.g., the principal with teachers), as well as financial incentives. Financial incentives themselves often flow to groups or individuals in groups (e.g., to the school or individuals in the school).

Financial incentives also are extremely difficult to design in a manner which avoids serious distortions of educational aims, individual motivations, and organizational dynamics (Murnane & Cohen, 1986). For this reason, the jury is still out on the utility of financial incentives in education. Publication and administrative pressure seem to be reasonably effective in producing results and probably should be preferred as sanctions.

Summary of Indicator and Monitoring Discussion

Distilling the above, it can be said that the dominant approach to indicators and monitoring is the use of multiple indicators of quality, with both relative and absolute criteria of success, aggregated at the level appropriate for exercise of responsibility (most commonly the school level), with sanctions of publicity and administrative pressure.

Research, Technical Assistance

State and local reforms of the 80's were not strong on research and technical assistance (learning how to produce results better and teaching people and organizations how to do better) (McDonnell & Elmore, 1987).

Yet these can be powerful policy instruments and should be kept in the repertoire of vocational reform. Some success stories do exist. New forms of training for beginning and continuing teachers are being created in many districts. The federal government has had a considerable impact supporting the development and dissemination of new curricula in math and science. States are experimenting with technical assistance as a means of encouraging use of computers in schools (Patterson & Williams, 1988).

Although the 80's reforms were not strong on research and technical assistance, the most successful of such reforms do seem to be based on ideas of educational content and performance (for example, improvements in science teaching sponsored by the National Science Foundation).

Changes in the Policy Process

The 80's reforms did not involve just changes in policies. Changes in the policy process were necessary to support the new emphasis on educational content and performance.

Two distinctive characteristics of that process were:

- Broader involvement and interest in education of many groups, resulting in effective resistance to the dominance of traditional educational interest groups over educational policy, but at the same time a higher level of support for effective education. Groups with new involvement inside the government included active legislators and governors; outside the government, business groups, minority advocates, and others.

- A more stable involvement of interest groups in education. Coalitions were formed which held together on a program for educational quality extending beyond political campaigns and issue cycles. Besides the interest groups referred to above, an important element of such coalitions was the presence of technical experts and policy analysts with a strong institutional base and access to relevant data.

It appears that successful reform incorporating performance measures must include the stimulation and creation of the kind of governance structure briefly described above and specifically cannot rely exclusively on existing structures dominated by education interest groups. Education interest groups are an important and valuable component of the process (in many ways -- for example, checking the mistakes and excesses of the accountability movement, and reminding us of the central importance of teachers and teaching). But exclusive reliance on such groups pushes policy in the direction of programs and process (the "old" way of doing business) and away from strong standards of content and performance. A further reason for broadening the process is the need for coordination across sectors of modern society, for example, the importance of business participation in vocational education.

Instructive Gaps and Failures in the 80's Reforms, Including Vocational Education

One can often learn as much from the failures of reforms as from their successes. Here, I summarize some problems of the 80's reforms, including problems of vocational education.

The Persistence of Educational Stratification

The most extensive failures can be grouped under the heading of stratification of learning opportunities (Gamoran, 1987). New graduation requirements did not result in a uniform, rigorous curriculum for all students because the requirements did not prevent students from taking remedial, basic, and general levels of courses like math and science. The most common response to the new requirements was to offer just these courses (Clune, with White & Patterson, 1989; Hanson, 1988). We also saw some evidence of a rapid growth of alternative educational opportunities, like night school and GED certificates, which relieve students of meeting normal requirements for high school graduation and probably specialize in an even less demanding curriculum. A related problem is that some kinds of student testing may have lowered the level of instruction instead of raising it, particularly high school exit exams based on minimum functional skills. Certainly the greatest problem of stratification is dropping out of high school altogether (Catterall, 1985; Moore & Davenport, 1988). This problem probably was not made better or worse by the 80's reforms, nor even addressed in a systematic way, but obviously remains a serious limitation on what can be expected from improving high school education.

The persistence of severely stratified learning opportunities is relevant to this paper because of the extensiveness of stratification in vocational education and the centrality of equal access as an objective of the Perkins Act. Special groups participate equally in vocational education, but not in quality opportunities (Benson, 1987; Oakes, 1983). The evidence is clear that sustained, informed, careful effort is required to alter such patterns; and I will make some suggestions in Part II of the paper on the federal role. States which are having some success upgrading academic education are concentrating on methods such as "bridge courses" (courses designed to move students from the general to academic track), and remedial education which attempts to "accelerate rather than remediate" (Stanford University School of Education, 1988). Both of these techniques require excellent educational planning, hard work, patience, and monitoring of progress.

Special Problems of Vocational Education

Of special relevance to the topic of this paper is the fact that the 80's reforms created special problems in the area of vocational education.

The major problem is the decline of vocational courses which occurred as a result of the new graduation requirements. According to our data, vocational education was the main casualty of the "new basics"

(Clune, with White & Patterson, 1989; Hanson, 1988) (that is, most of gains in academic courses were offset by declines in vocational training). As the NAVE reports suggest, ambitious academic requirements hurt vocational education simply by preempting a large portion of the schedule of high school students, leaving little or no time for vocational training.

This "exchange of courses" which occurred is not clearly desirable. First, it may have been largely unanticipated (in the sense that policy-makers did not really know which courses would decline, if any); and is contrary to the intentions of some reformers. The "bible" of school reform, A Nation at Risk (National Commission on Excellence in Education 1983), speaks of eliminating basic and general courses and increasing both high level academic and vocational courses. Second, independent of reformers' intentions, the exchange may not have been a good idea. The best education for non-college bound students may be a combination of high quality academic and vocational education (Kang & Bishop, 1988). Substituting weak academic courses for strong vocational courses seems one of the least attractive options, and this may have occurred if students adjusted to the new requirements by taking low level, free standing vocational courses instead of larger blocks of credits in a logical sequence.

We did see evidence in some states of specific conflicts between academic and vocational requirements. In one state, students who are required to take vocational training in large blocks of time (5 hours) were unable to meet both sets of requirements, except in special vocational high schools offering an 8 hour day. Similar conflicts occurred in other states. Unfortunately, vocational-academic conflicts may have been most severe for disadvantaged students whose schedules tend to be most monopolized by academic requirements. In many schools, our respondents said that low achieving students had no electives whatsoever because of the need to take required, remedial, and make-up classes.

The potential watering down of both academic and vocational education may be exacerbated by the political response of states to the new requirements. In response to the conflicts between academic and vocational education, several states are adopting rules permitting substitution of vocational equivalents for academic requirements (courses containing enough academic material to meet the new requirements). The general idea of upgrading the academic content of vocational courses is excellent (and recommended in several NAVE background papers). On the other hand, the level of academic content in vocational courses designed quickly to reduce the damage of unrelated requirements is open to serious doubt. In one state, we saw courses like "baking math" and "nursing math" in the planning stages.

Whatever actually occurred, the clash between the "new basics" and old vocational courses was largely unplanned and unmonitored. Thus, the real problem of the 80's reforms for vocational education was simply a lack of intelligent planning. Unplanned policy change usually does not work out well (a corollary of the first law of implementation that even well planned change is quite difficult). A reform movement which was

attentive to both issues would have investigated the ideal combination and content of both academic and vocational courses and upgraded the content of both (for example, taking a really close look at the cognitive content of vocational education) (see Rosenfeld, 1987).

A Comment on Other Reforms of the 80's (Teacher Professionalism, Empowerment; Educational Decentralization; Choice)

It would be misleading to conclude a discussion of the 80's reforms without some discussion of the alternatives to the basic policy approach I have been describing in this paper. In a broader perspective, the approach I have been describing (emphasis on content and performance) represents relatively strong organizational control of or influence on schools by political authorities. The approach could be thought of as either regulation (in a broad sense including policy instruments other than regulation in a narrow sense); or, perhaps better, quality management. The 80's reforms represent an effort to manage education more effectively from outside and above by the groups with official authority over the schools.

There is a long tradition of skepticism about the feasibility and educational effects of such management -- skepticism, in effect, about the value of "policy" in the ordinary sense (see Cuban, 1984). Those who distrust outside management as a tool for reform, but still support the possibility of school improvement and planned progress, usually embrace one of three alternatives: choice (client control), teacher professionalization (making teachers better), or school restructuring (organizational improvement at the school level) (see Elmore, 1988). In this section of the paper, I want to make a few comments (impossibly brief given the difficulty of the subject matter) about the relative advantages and disadvantages of the various alternatives, some practicalities of choosing one or the other, and the degree of compatibility or incompatibility between the management approach and its alternatives.

Choice is undoubtedly a powerful policy instrument (Elmore, 1986) and, in many ways, a substitute for internal organizational control, or management (Lindblom, 1977). Choice gives clients considerable power over service providers (holds them accountable and puts pressure on them to perform better), and the choices of clients can serve as the "indicators" of quality (whatever clients choose is good). But I do not think that there is a major conflict between choice and management in vocational education.

First, choice is already a familiar element of vocational education. Students choose courses, schools, and training programs. Any proposal for vocational reform (including mine later in the paper) must decide how much and what kind of choice to build into the system. But, second, there is really no realistic possibility of using choice as a total substitute for management and regulation (in other words, no possibility of abolishing these traditional policy instruments). Public vocational education at the secondary and postsecondary levels is not going to dry

up and blow away, and federal policy is not going to adopt the destruction of these institutions as a major objective. Furthermore, educational options in choice systems, perhaps especially those provided by the private market, always seem to require considerable regulation (for example, problems of quality in proprietary schools and issues of stratification by socioeconomic background in course choices and training programs). In summary, choice will remain an important but not exclusive or even dominant aspect of vocational policy.

As for improvement of teaching and school restructuring, I would make the same basic points about both: first, the case for the effectiveness of these reforms is not as clear as either choice or management; and, second, management is not really inconsistent with either approach, if management is done properly.

Both the meaning and effectiveness of school restructuring are currently under debate (Kirst, quoted by Olson, 1988). There seems to be little doubt that strong educational effects can flow from the proper kind of school culture and active engagement by the school staff (Purkey & Smith, 1983, 1985). It is not clear how to foster such conditions in schools which do not possess them to begin with. Consequently, in my opinion, the school restructuring debate is not currently in a position to provide clear, reliable guides for policy. Furthermore, the two approaches can be complementary rather than antagonistic. It is possible that over detailed, "lock step," accountability measures interfere with school autonomy. The more likely culprit is disorganized political conflict (in effect, incoherent policy) (Chubb & Moe, 1986). But advocates of school improvement usually do not object to appropriate controls over educational content (curriculum, etc.) and restrained measures of accountability (Levin, 1988). Enlightened systems of the kind described in this paper (for example, South Carolina) actually capitalize on school improvement by involving school people in both the design of and response to indicators of educational quality.

The same kinds of points apply to professionalization of teachers. No one can doubt the importance of teachers' knowledge and skill. While most policies designed to promote these objectives are of doubtful effectiveness, some recent policies show considerable promise (Darling-Hammond & Berry, 1988; Sykes, 1988). The main point for our purposes is the lack of any necessary conflict between quality management and teacher professionalization. The most progressive curriculum and accountability policies capitalize on the expertise of centralized decision makers by providing conceptually deep and professionally valid content while at the same time not only permitting but in many cases actually requiring the exercise of creative pedagogy and cooperative efforts among teachers (for example, the New California mathematics assessment which emphasizes higher order thinking and active problem solving). A key attribute of effective teaching is knowledge of the subject matter and how best to teach that subject matter to different kinds of students (so called pedagogical content knowledge). A key aspect of professionalism is a distinct and respected specialized body of knowledge. A key factor for satisfaction of teachers is a body of knowledge and practice which is an

outstanding success in the classroom, especially for disadvantaged children where teachers have the greatest problems staying engaged and motivated (see generally Smith and O'Day, 1988).

A Concluding Caution

In summary of the last two sections (on the failures of reform and its alternatives), there is one great drawback of quality management, and it is implicit in the very argument I have made on its behalf. I have basically said that the "right kind" of quality management is consistent and actually reinforcing of the values which flow from choice, restructured schools, and professionalized teachers. The obvious question about that position is the feasibility of such enlightened policy. To the extent that policymakers cannot design thoughtful, effective curricula and appropriate, restrained measures of accountability, authorities above the school level lose their comparative advantage as decision makers, and it would be preferable for them to abandon policy making and leave all decisions at the local or school level (Clune, 1987). Bad policy is not just a theoretical possibility; it is common. Reasons include the clumsiness of policy instruments, the incoherence and irrationality of educational policy in a complicated political system (Cohen, 1983; Chubb & Moe, 1986), and ignorance of policymakers about the educational process.

On the other hand, strangely enough, policy in the sense of quality management is also inevitable for two reasons: first, the political conviction about the importance of school improvement may emerge most strongly outside and above the school level. A common reason in the United States has been concern of the business community about economic productivity. Second, the very complexity of existing policy frequently calls for additional reforms to make them more coherent and effective. The consequence is an awkward, but think basically realistic, role for policy analysis: an awareness of the pitfalls of bad policy and a conviction about the need for good policy.

This is exactly how I see the federal role in vocational education: possibilities for making things better, or worse. The two most important guidelines to be taken from this concluding discussion are (a) the need to make policy and its effects more coherent rather than more fragmented (thus, the danger of piecemeal solutions), and (b) the need to respect and encourage the essential processes of teaching and learning in any policies that are adopted.

II.
SUGGESTIONS FOR A REVISED FEDERAL ROLE IN VOCATIONAL EDUCATION

I see three main issues for federal policy:

- What is the basic role of the federal government in the sense of policy instruments, or policy levers? Here I recommend that the federal government avoid direct regulation and instead adopt incentive grants for the state governments to engage in broad scale reform of vocational education under federal guidelines.

- What criteria of quality in vocational education can be established by the federal government as the goals of state policy, and what policies should the states be encouraged to adopt? I recommend that a national task force be established to develop standards and optional standards regulating course selection, course content, indicators of performance, access of special groups and governance. To begin discussion, I offer some illustrative details of those standards.

- How can the federal government monitor progress toward goals of quality in vocational education? Monitoring would occur under the federal standards or guidelines mentioned above but also would require a monitoring agency. Here I recommend a new type of agency with authority over the incentive grants capable of making substantive judgments about educational quality (under the guidelines).

Basic Federal Role and Policy Levers

In this section of the paper, I recommend that the federal government encourage state reforms of vocational education through incentive grants. Two subsidiary issues need to be discussed: the arguments for incentive grants as opposed to direct regulation, and the form of the incentive grants (voluntary vs. mandatory, single vs. multiple phase).

The Argument for Incentive Grants to the States

Two basic issues are involved in a switch to incentive grants: why grants and not regulation, and why the states rather than other levels of governance (districts, schools, regional authorities, etc.).

The Advantage of State vs. Federal Regulation

I see the following arguments for encouraging state reforms through incentive grants:

First, the task of implementing policy aimed at improved educational content and performance is both intrusive and large. Intrusiveness occurs as an inevitable by-product of trying to change the content, organization, and governance of education. Academic and vocational requirements will need to be coordinated, requiring, in effect, a review of the recent state reforms of education. The task is large because of the large number of units to be regulated (students, courses, high schools, vocational training centers, etc.). To undertake this task, the federal government would need to go far beyond its traditional role of regulating the distribution and use of federal funds and assume something very close to the traditional state and local role in regulating the core of instruction. It is doubtful that the federal government has the political capacity (or will) to undertake the task or the technical capacity to complete it.

On the other hand, the role of maintaining educational quality is traditional for the states, and the states recently have acquired increased capacity to fulfill this function. The increased state capacity is both technical (knowledge of how to do the job) and political (having in place interest groups and political structures needed to support the task). In other words, the states are receptive to the call for educational improvement as never before.

Third, I believe that encouraging state reform is a superior method of federal leverage to any that has so far been attempted. Two of the more common federal policy instruments in education are the conditional grant and the direct service requirement (Clune, 1986). The conditional grant has problems familiar to some parts of the Perkins Act, such as encouraging educational practices more attentive to accounting needs than educational quality. Conditional grants also have limited leverage because they operate only on federal funds. Direct service requirements, such as 84-142 and other parts of the Perkins Act, achieve greater leverage by mandating educational services beyond the scope of federal funds (in effect, requiring state and local matching funds). The leverage achieved in this way is both limited and resented, however. Since the requirements are visibly federal, states and localities often feel that the federal government is not paying the cost of its own mandates; and the regulation is responsively narrow in scope.

Encouraging state reform has two main advantages as a source of leverage. The most simple is gaining the active cooperation and resources of the states, thus greatly expanding the institutional base for policy. Beyond resources, the states are better positioned than the federal government for this type of policy. State promotion of educational quality is well accepted and ongoing, requiring no awkward political or technical innovations. Since the states have authority over the full range of public school functions, they may be able to implement desirable reforms of vocational education with considerable efficiency, for example, by redistributing existing resources (e.g., students and teachers to new types of courses). States also are uniquely well positioned to adopt changes in organization and governance that are attuned to local conditions.

Diverse local conditions -- variety of circumstances -- is yet another general reason for favoring state reform. Implementation always is affected by local conditions (McLaughlin, 1987), but the diversity in vocational education must be extraordinary. States are starting from very different places and probably would adopt a variety of ultimate goals (assuming that the federal guidelines allow a range of options, which seems sensible).

The only major drawback of the strategy of encouraging state reform which occurs to me is the possibility that many states would not cooperate, or cooperate grudgingly. The entire viability of the strategy does depend on this question, and we don't know enough to make confident predictions. Early feedback from the states would, of course, be part of any federal planning effort. I am inclined toward optimism for

four reasons. First, many states seem very receptive to the idea of improving educational quality and vocational education in particular. The idea that vocational education is important leftover business from the previous reforms could be quite appealing. Second, the states should be willing to accept the federal role of providing funds and encouraging quality vocational education. Third, states also are frequently quite receptive to the offer of high quality policy design and technical assistance (available as part of the federal policy). Fourth, I see no other option for the broad scale changes which are required; and a less ambitious federal policy always is available as a fall back.

State vs. Lower Units of Governance

Some federal educational policy bypasses state governments, making funds available directly to lower units of governance such as districts and schools. At a time of criticism of central bureaucracy and emphasis on the benefits of school site governance, this may seem an especially attractive option.

But for the specific task of reforming vocational education it seems to me that the state is the best and probably the only feasible option. The basic reason is the need for coordination across a wide domain of geographical areas and organizational units. Vocational policy is at the stage of needing basic ground rules (standards) and efficient delivery systems. School improvement is important but less fundamental. Moreover, the state policies adopted can and should be the kind which rely on school improvement for many performance goals (e.g., increased student attendance and placement in certain kinds of courses).

Basic Form of the Incentive Grant: Voluntary, Multi-Phase

The actual design of incentive grants to the states would be a formidable task involving a multitude of important details. Here, I discuss three general issues which strike me as particularly important: voluntary participation, multiple phases, and coordination of old and new requirements.

Voluntary Participation. "Incentive grant" implies that the states could decline to participate. In theory, one could imagine a mandatory requirement that the states reform vocational education under federal guidelines as a condition of receiving any federal funds (thus placing a serious cost on opting out). I favor a system in which funding continues for status quo vocational education, but an additional sum of money is made available for the incentive grants. It would be understood that states are completely free to participate. Funding would be arranged to accommodate a defined number of states in each funding cycle. If applications for grants exceeded revenues, states could be selected on a competitive basis.

Voluntary participation has two advantages. First, the knowledge base about how to improve vocational education is not strong. Voluntary participation would allow experimentation, the working out of

unanticipated problems, and the production of some success stories, or exemplars, for other states to emulate. Second, voluntary participation is an extension of the leverage principle discussed above. Federal leverage depends upon active cooperation. A mandatory system probably would produce grudging compliance, shirking, and even resistance. States initially unprepared to participate probably would become enthusiastic when the benefits of reform became obvious. On the other hand, there is no obvious reason why the federal government should be overly concerned about less than universal participation.

Phases of Grant Implementation. Since educational reform is a continuous process running from planning to implementation, the federal grants would have to be awarded for completion of successive stages of the process. It seems manageable to divide the process into three distinct phases: governance and planning; adoption of standards; implementation of standards. Each of these activities or phases would have its own set of federal guidelines.

In the first phase, **governance and planning**, the states would be asked to establish a governance mechanism for reform (representing various groups, etc., see below), to acquire data, and to undertake a planning exercise culminating in the design of state legislation and other components of reform. The second phase would consist of actually **adopting and funding** the new process (adopting new standards, establishing an indicator system and monitoring agency). The third phase would be **implementation** (establishing baseline indicators, monitoring progress, encouraging school improvement). Measurable progress toward goals would be one measure of the effectiveness of improvement, but the emphasis would be on appropriate standards, data, and incentives.

Coordination of Old and New Requirements. Since the new federal guidelines and existing federal law (e.g, the Perkins Act) overlap in their coverage, states probably should be released from the "old" regulations once they enter the implementation phase of vocational reform (thus providing a switch-over point from the old to the new method of governance). At that point, status quo funding would come under the control of the Federal Agency charged with monitoring state reform efforts and would be dispensed or withheld according to progress in meeting defined goals of the reforms. Also at this point, the federal government would be out of the business of regulating vocational education and exclusively in the business of, in effect, regulating the states' regulation of vocational education.

What of states ultimately refusing to participate? The simplest approach would be to discontinue their federal funding. An alternative would be to continue the status quo of direct regulation (ala the Perkins Act), as amended to incorporate new proposals.

The Federal Standards of Quality in Vocational Education

Having discussed the advantages and basic form of the incentive grants, it is now necessary to discuss policy content, the specific

conditions or guidelines that would shape state reform efforts. Three general issues can usefully be discussed here: the feasibility of standards given a weak knowledge base, the process of adopting the federal standards, and some likely candidates for the standards themselves.

Feasibility of Standards in a Weak Knowledge Base

The NAVE background papers contain many examples of divergent opinions and absence of needed research on the nature of quality vocational education (for example, the value of various curricular options and the proper role of vocational education in secondary schools). The federal government is in no better position than anyone else to resolve these issues immediately. The question, then, is how to define quality in an a situation of highly imperfect knowledge and uncertainty. To put it bluntly, is it premature to enter the game of improvement of vocational education?

The answer to this question really depends on how close existing practice is to the frontier of knowledge, however imperfect. We may know enough to make improvements over existing practice without understanding all issues, or any issues with a high degree of confidence. Vocational education seems to be characterized by a relatively weak knowledge base (compared, say, to our understanding of how to teach mathematics, which is itself evolving, see Romberg, 1988). At the same time, there appears to be a substantial gap between knowledge and practice because little of what is known about quality vocational education is implemented in a systematic way. Existing policy with its emphasis on funds allocation and auxiliary services (like assessment) does not identify and promote the known characteristics of quality (e.g., defined combinations of vocational and academic courses, vocational courses emphasizing higher order thinking, programs with up-to-date equipment and connections with employers).

As a result, the practice of vocational education is characterized by enormous variation in quality. Some students receive vocational education which is close to the known ideal. Because some practice is already excellent, the government would not be in the position of sponsoring a revolution in practically all teaching, as may be the case shortly with mathematics (Romberg, 1988). Other students seem to receive almost the opposite of what we understand to be quality. The role of policy, then, is to "raise the bottom" (hence the appropriateness of both minimum standards and accurate indicators).

The Process of Defining the Federal Standards: State Involvement and Optional Standards.

A weak knowledge base also has consequences for procedure, or process. Even if our understanding of quality vocational education were extremely strong, the federal government probably would wish to obtain the active cooperation of the states by involving them in formation of the standards. Political consensus becomes even more important when the standards themselves are debatable. Any of a large set of possible

standards could properly claim to be an improvement over the weaker aspects of existing practice. Thus, the states should not only be involved in defining the standards, but the standards themselves probably should be multiple and, within the defined set, optional.

See the discussion immediately below on the need for participation by knowledgeable participants in the 80's reforms.

The Standards Themselves: Federal Goals for Quality Vocational Education

Defining the standards in this paper would be pointless. As explained above, those standards must be negotiated. Others who have studied the question at length are more qualified than I to define quality vocational education. Obtaining such expert opinion obviously would be part of adopting federal standards. What I will try to do is provide a kind of checklist of the categories where standards probably should be developed. I do so based on the NAVE background readings and overlap of vocational quality issues with similar issues in the 80's reform movement. As explained in Part I, the 80's reform movement anticipated the present critique of vocational education in theoretical underpinnings and general philosophy (emphasis on content and performance). Even the specific suggestions for reforming vocational education which I read in the NAVE background papers would be for the most part quite familiar to 80's reformers.

Indeed, I strongly recommend participation of knowledgeable 80's reformers in the federal planning effort for vocational education, a participation all the more necessary because of the many connections between the 80's reforms and vocational education, e.g., coordination of vocational and academic education, incorporation of vocational indicators in the general indicator system, integration of school improvement efforts.

Standards seem to be desirable in the following areas: reform governance, organization of service delivery, regulation of the high school curriculum, access of special groups, competency testing, indicators of educational quality, and a mechanism of school improvement. Keep in mind the above discussion of the phasing of these standards (planning, adoption, implementation), a discussion which will not be repeated here.

Reform Governance. Since federal policy would ask the states to undertake their own reforms of vocational education, state governance of those reforms becomes an issue of immediate importance. As explained in Part I, the success and coordination of state reforms seemed to depend on a new coalition of established educational interest groups, business, and activist Governors and legislators. Additionally, vocational education has been plagued by fragmented and isolated governance structures. The states might be asked, therefore, to form comprehensive planning units for their vocational reforms, including established vocational and manpower groups, business (even more important for vocational education), labor, key legislators, and the Governor's staff. This group should be supported by a technical staff capable of providing high quality

policy and data analysis. Many states have used such groups in the past, for the 80's reforms, but also for earlier reforms, like school finance.

Regulation of the High School Curriculum. States are already active in regulating the high school curriculum, including vocational education. New regulations to be considered include the following (see Part I for an explanation of the purpose and operation of the categories of policy instruments listed below):

- Course Offerings. The states could adopt standards of an acceptable curriculum in vocational education which must be offered by any high school offering vocational education at all. Options include required sequences, exporting certain courses to the general curriculum (e.g., typing?), and phasing out of weak courses which really translate into problems of access for special groups who are "dumped" in such courses (e.g., Home Economics?).

- Course Selection. On the analogy of high school graduation requirements, states could set up a system of vocational diplomas and certificates requiring prescribed sequences of courses (or review existing requirements). Vocational students probably should be required to take a prescribed series of academic courses as well. See the discussion below of coordinating the two sets of requirements.

- Course Content. Curriculum guides could be developed for upgrading the academic and vocational components of vocational courses in the direction of higher order thinking and problem solving (for example, to correspond to the "agricultural" model, discussed in (Rosenfeld, 1987). These guides would work best if aligned with authorized texts, course materials, and tests (see below).

- Coordination with Academic Program. Conflicts between vocational and academic requirements exist even without new requirements (see Part I). New requirements would need to be coordinated as well. A fundamental issue is whether students can actually satisfy all sets of requirements in the available high school day. A related issue is whether the "basic skills" component of vocational courses actually is strong enough to substitute for certain academic courses.

- Remediation in Basic Skills. Any program of vocational education, especially one successful in broadening access, will face the problem of how to bring students' basic skills up to an acceptable minimum. How to design a remedial program which pushes students ahead instead of holding them back is a delicate issue deserving the most careful study (captured in the motto "accelerate, don't remediate," see Levin, 1988). The objective is to raise content, standards, and expectations without pushing students out. Although I am not really qualified to speak authoritatively on the issue, from what I have observed four elements of such programs seem important: defining a limited domain of higher order skills which students can master; developing a test of those skills; providing concentrated attention

(e.g., tutoring, peer or otherwise) for students failing to reach the desired skill levels in the regular course of instruction (see Slavin, 1987); and, perhaps, sacrificing mastery for exposure to content, if necessary.

Access of Special Groups. Access of special groups like the disadvantaged to quality vocational education seems to involve two problems: "positive access," the exclusion from quality programs through geography, lack of support, admission policies, etc.; and "negative access," the oversubscription, or "dumping" of special groups in inferior courses and programs (Benson, 1987). Solving these dual problems will require a variety of remedies, some mentioned elsewhere in this section (e.g., minimum quality standards for programs, including course content and selection; minimum standards for equipment and placement). The following ideas might be considered:

- Upgrading programs in districts and schools with concentrations of the disadvantaged.

- Changes in admission policies for high quality programs (e.g., eliminating entrance tests with a discriminatory impact and substituting other suitable admissions criteria).

- Facilitating attendance at high quality vocational institutions through careful analysis of obstacles to attendance and provision of necessary compensating services (e.g., financial incentives, transportation, child care).

- Intensive academic remediation (rather, acceleration, see above) for those needing it.

- Adjustments in the course and schedule requirements of students who must "catch up," allowing them to take an intensive core of courses without impossible conflicts.

- An alternate track to a vocational diploma or certificate for students out of school or too far behind the requirements for a regular diploma (for example, a core of courses in basic skills and a high school vocational sequence, followed by two years at a postsecondary institution). I make this suggestion with some hesitation because of the potential of all "alternate routes" to become second class offerings.

- A system of data, indicators, and monitoring to keep track of the educational opportunities and experiences of disadvantaged students. There should be separate reporting (see discussion of indicators, below) on the progress of improving access of disadvantaged groups against defined goals. Recall the Part I discussion of such issues often being "swept under the rug."

Student Testing. Tests should be developed to measure vocational competencies, academic skills, and mastery of the curriculum (tests

aligned with the curriculum guides). These tests should be designed to raise the cognitive content of all courses, and emphasize active learning, rather than driving the curriculum toward factual memorization, drill and practice, passive listening to lectures, etc. The exact combination of tests which fits vocational training is beyond my competence to address. But the usual caution against exclusive reliance on standardized achievement tests seems especially applicable to vocational training with its emphasis on "doing" as well as "knowing" (see Archbald & Newmann, 1988).

Coordination with Programs for the "At Risk" Student. Some of the better programs for at risk students (e.g., alternative schools, schools within schools) may already combine a number of the features discussed above (superior course content, streamlined route through high school requirements, active learning, peer tutoring, etc.) (see Wehlage, Rutter, Smith, Lesko, & Fernandez, forthcoming). How to learn from such successes, encourage them within a set of more formal requirements (e.g., course credits for fieldwork), and distinguish them from similar programs of inferior quality, are all questions deserving careful study.

Minimum Standards of Organization and Service Delivery. It seems clear that quality vocational education must go beyond quality coursework. Certain organizational and service characteristics also are essential, and these should be built into the minimum standards (and the program of incremental improvement, see below). Desirable features include modern equipment, qualified faculty with up-to-date knowledge, connections with employers, and well functioning placement programs. Because of economies of scale and institutional expertise, separate vocational training institutions seem to have a big advantage over comprehensive high schools in meeting such criteria (Benson, 1987). The federal planning group will need to consider how much to push the guidelines toward the model of separate vocational training institutions. To the extent that programs are concentrated in fewer institutions, issues of access for disadvantaged groups may increase (e.g., transportation).

Coordination with Postsecondary Institutions. One of the ways to push students toward high quality, specialized institutions is the 2 + 2 model which uses high school training to prepare for further education in a postsecondary training institution. How best to structure such programs deserves study. One model (incorporated in Federal legislation) uses the first two years of high school for academic training and the second two years for vocational prerequisites. Another model might emulate Minnesota's "postsecondary enrollment options" plan which allows 11th and 12th graders to enroll freely in postsecondary institutions (a significant number of students do choose vocational institutions, (see Archbald, forthcoming and Minnesota Department of Education, 1987). If the Minnesota plan is practical and has high standards (e.g., of academic preparation), it seems to offer the great advantage of accelerating the education of students (a considerable cost-efficiency).

Note that a combination of encouraging specialized high schools and postsecondary institutions would, if pushed hard enough, lead in the

direction of abolishing vocational education in comprehensive high schools. That might seem to be an incongruous position to be found in paper about vocational education in high schools, but it is nevertheless a serious policy option which deserves careful attention. It may be that the high school offering a weak vocational curriculum and associated services should be considered a thing of the past and phased out in favor of a spectrum of more specialized institutions (including specialized high schools), with appropriate mechanisms of (and support for) student choice.

Student Choice. Choice by students is everywhere in vocational education, whether inside or outside the public system (see Elmore, 1986). Vocational training in public schools is optional. A wide variety of programs exists outside public schools. The only questions, then, are the scope and effectiveness of choice. Choice would be expanded through programs like 2 + 2 and postsecondary enrollment options. In Minnesota, the most persuasive argument for postsecondary options was the increase of opportunity for many students and the correspondingly more efficient use of publicly supported facilities. In this sense, lack of choice represents the unnecessary frustration of a better match of student needs and available services.

Effectiveness is the other big issue about choice. Students who are barred by admissions criteria, lack of transportation, improper counselling, etc., do not exercise effective choice. In a more subtle way, students who are presented with inferior programs in their own schools, and are unaware of quality alternatives, also lack effective choice.

Coordination with Job Training. I do not know enough about job training (e.g., JTPA) to make intelligent recommendations about coordination with high school programs. The only clear need is to end the complete lack of coordination produced by different governance structures. Federal standards authorizing state coordination could accomplish just that.

I do have a few somewhat specific ideas about coordination. Assuming that training programs tend to serve the less academically successful young person (e.g., dropouts of high school age or older), the obvious question is how to coordinate the various services available for such students, in and out of school. For example, states might be encouraged to shape job training in such a way as to prepare students for more intensive academic/vocational training in high school, and thence to a postsecondary institution. In effect, states could create "tracks" leading from job training to an abbreviated high school diploma (or school within a school), then to a vocational college. One implication might be the provision of high quality (accelerative) basic skills training in training programs. The converse kind of coordination would be use of high quality training programs to supplement, and, in effect, upgrade sub-par high school curricula.

Because of the nature of the students served, the coordination of high school and training programs is, to some extent, an aspect of coordinating programs for "at risk" students discussed above.

Indicators of Quality and Performance. Having discussed governance and quality standards, we now come to the all important area of indicator systems. The importance of indicators cannot be overemphasized. Indicators give the standards a concrete, observable meaning and provide information on progress or lack of progress for public debate. Some indicators also can be used for monitoring (information designed to produce an administrative response, see Oakes, 1986; Richards, 1988). One of the key functions of indicators is keeping track of underserved populations, whose opportunities and problems otherwise tend to be hidden from view. In South Carolina's state-of-the-art improvement package, indicators play a role equal to the standards of quality and superior governance structure (South Carolina Board of Education, 1987, 1988a, 1988b). Indicators also are a vital cog in discharge of the federal role, because the federal government will be evaluating progress of the states on the basis of their own indicator systems.

Basically, every standard of quality education discussed to this point should be measured. The quality standards fall into two broad groups: standards of institutional and program quality (course offerings, modern equipment, administrative organization, etc.), and standards of student training (course attainment, tested competencies, etc.).

For vocational education, an innovation with considerable appeal (as well as difficulty) would be to track students who are not in regular high schools. Such students could be picked up in alternative schools and training programs to provide a more complete data base on the state's human capital. Previous state school improvement efforts have not taken this approach because of their focus on public schools. Because of the focus of the Perkins Act on access for the underserved, a data base allowing analysis of variables by type of student would seem very appropriate; but, to my knowledge, no state has an indicator system which allows tracking by student type (or by individual student, for that matter). Building an indicator system with the capability of long run tracking of students, like the High School and Beyond data base, would be an additional challenge.

Many states will need to work very hard and come a long way to build acceptable indicator systems. Records must be defined properly and accurately recorded at the field level. A data base must be designed to store and structure the information for analysis. Analytical capacity must be available to interpret the information. The vocational indicator system should be integrated with the state's existing system. Of course, an important factor greatly reducing the challenge of this task is the possibility of imitating the states which start first.

I have given only the barest sketch of the indicator issue in these paragraphs. The whole topic would require the sustained attention of systems analysts, researchers, state indicator experts, and others accustomed to thinking about the design and use of data. Fortunately, many such people have already contributed to the NAVE effort, and others could be brought in for design of the federal guidelines.

Mechanism for Educational Improvement. If indicators are essential, the main reason is their role in educational improvement. In Part I, I discussed how successful programs of educational improvement must work with gradual increments of progress toward defined goals (goals provided by the standards). Educational improvement works with indicators and monitoring -- the collection and publication of performance in various aggregates of the population (the state as a whole, all vocational high schools, individual high schools, types of students, etc.).

Often, the simple publication of reliable information about goals and progress seems to provide a stimulus for change. Administrative systems generally are responsive to what is measured (a potential problem as well as an advantage, compensated for by high quality and multiple indicators -- see discussion in Part I). Keep in mind, in this respect, that the authority to withhold federal grants for lack of progress would itself provide a considerable incentive for the states to find ways of improving.

But the states also should be asked to design appropriate sanctions and incentives for superior and unsatisfactory performance by subunits (just as the Federal Government will do for the states). The exact nature of these incentives and sanctions is a delicate topic. As discussed in Part I, administrative attention and fiscal incentives to groups may be just as effective and more reliable than rewards attached to specific measures. In my view, the current enthusiasm for performance incentives should be tempered by an understanding of the difficulty of designing workable systems. But here, too, the states are beginning to accumulate useful experience which can be brought into the federal planning process.

Another important aspect of state educational improvement is the planning and phasing of institutional change. Some of the federal standards are quite easily measured, particularly those pertaining to organizational and program quality (e.g., course offerings in high schools, number of students in specialized vocational schools as compared to comprehensive schools, availability of up-to-date equipment). An important "indicator" of progress in such cases is the presence of an effective plan for making progress. Is the state building more specialized vocational schools? Is there a plan for concentrating qualified faculty in a limited number of schools in a geographical area? Is new equipment being identified and ordered? Are admissions policies being changed?

Federal Capacity and Agency Required for Administering and Monitoring the Grants

The pleasant picture of state reform just portrayed has assumed an effective federal role in the background. It is an extremely challenging and, to my knowledge unprecedented, role which gives no clear assurance of being ultimately possible. Feasibility of the federal role is probably the weakest link in the entire program recommended in this paper.

Administering the new "Perkins grants" under the kind of comprehensive guidelines discussed in this paper requires establishing a

permanent federal agency for research, monitoring, and consulting on the federal standards. The agency would need to publish and explain the standards, receive and evaluate plans for each stage of the process, evaluate progress toward goals, negotiate compromises, and dispense or withhold grant funds. Standards should be periodically changed based on new research, requiring a mechanism for ongoing research, planning, and revision.

Large demands on federal capacity are made by this model. On one hand, the agency would need to possess considerable amount of technical expertise, equivalent to the most sophisticated policy analysis capacity in the states. On the other hand, the agency would have great authority combined with great discretion. Adequacy of state plans and progress is inevitably a relative and somewhat subjective judgment. Political confrontations over refusals to grant funds could well occur. In thinking about such an agency, one is reminded of an often neglected advantage of the contemporary emphasis in federal policy on formalistic rules and guidelines. Such rules may not produce much education improvement, but they reduce the scope of legal and political conflict (see generally Handler, 1986).

How to design such an agency deserves serious discussion. It may be that the federal role in the first two phases of the grants (planning & governance; adoption of standards and indicators) will not be too difficult because the activities are discrete and criteria can be well defined. In fact, these two phases in some ways resemble traditional federal activity in evaluating research proposals. The greatest difficulty with these two phases is the imponderable question of whether the initial grants are large enough to stimulate a state response. Here, I simply guess that the appeal of the task to some states will overcome initial resistance, while the desire to emulate success stories will bring others into line.

The most difficult task will be monitoring and sanctioning education improvement itself. Perhaps the difficulties here can be relieved by a system of graduated incentives (minimal, adequate, and superior performance), together with a system of representation of state interests (e.g., a review panel consisting of representatives from the states). If the role of federal monitor becomes too difficult, perhaps a less authoritative mechanism can be devised more along the lines of NSF (technical assistance, incentive grants for planning, adoption, start-up, etc.).

Conclusion

The scope of what has been recommended in this paper in a piecemeal manner only becomes apparent when viewing the entire structure in retrospect. It seems that moving vocational education in the direction of quality and performance is an activity fully as comprehensive as the 80's reforms themselves. To that extent, the idea of the states undertaking the task rather than relying on direct federal regulation seems well justified.

On the other hand, one also can see some extreme challenges to the federal role, both political and technical. Wholesale educational reform is exactly what it sounds like -- an extremely ambitious undertaking. At bottom, we are asking whether a federal agency really can take a role of substantive educational leadership for the states. I don't think that the federal government has ever done anything just like it (except, perhaps, for leadership of NSF in math and science, which proceeds under a more cooperative model). Unreserved cooperation of first group of states seems essential to the success of the whole effort.

In spite of difficulties, there is no point in underestimating the task and pretending that it can be achieved on a lesser scale. I doubt that a more piecemeal set of solutions will be effective (e.g., adopting some of the proposed guidelines as direct regulations). The various standards needed for quality and performance are interdependent. Vocational education really should be viewed as a system deserving wholesale reform.

References

Alexander, K. L., Entwisle, D. R., & Thompson, M. S. (1987). School performance, status relations, and the structure of sentiment: Bringing the teacher back in. American Sociological Review, 52, 665-682.

Archbald, D. A. (forthcoming). The origins, effects, and political significance of a state legislated program of choice in education: The Minnesota postsecondary enrollment options law. Center for Policy Research in Education, University of Wisconsin-Madison.

Archbald, D. A., & Newmann, F. M. (1988). Beyond standardized testing: Assessing authentic academic achievement in the secondary school. Reston, VA: National Association of Secondary School Principals.

Benson, C. S. (1987, February). Access to quality vocational education. In J. Wirt (Director), Design papers for the National Assessment of Vocational Education. Washington, DC: Department of Education, National Assessment of Vocational Education.

Bryk, A. S., & Thum, Y. M. (1988). The effects of high school organization on dropping out: An exploratory investigation. Paper prepared for the Center for Policy Research in Education, Rutgers University, New Brunswick, NJ.

Catterall, J. S. (1985, December). On the social costs of dropping out of school (SEPI-3). Stanford, CA: Stanford University, School of Education, Stanford Education Policy Institute.

Chubb, J. E., & Moe, T. M. (1986, Fall). No school is an island: Politics, markets and education. The Brookings Review, 4(4), 21-36.

Clune, W. H. (1986). The deregulation critique of the Federal role in education. In D. L. Kirp & D. N. Jensen (Eds.), School days, rule days: The legalization and regulation of education. Philadelphia: Falmer Press.

Clune, W. H. (1987). Institutional choice as a theoretical framework for research on educational policy. EEPA, 9(2), 117-132.

Clune, W. H., & White, P. A. (1988, September). School-based management: Institutional variation, implementation, and issues for further research (CPRE Research Report RR-008). New Brunswick, NJ: Rutgers University, Center for Policy Research in Education.

Clune, W. H. (with P. White and J. Patterson). (1989). The implementation and effects of high school graduation requirements: First steps toward curricular reform. New Brunswick, NJ: Rutgers University, Center for Policy Research in Education.

Cohen, M. (1983). Instructional, management, and social conditions in effective schools. In A. Odden and L. D. Webb (Eds.), School finance and school improvement: Linkages in the 1980's: Fourth Annual Yearbook of the American Educational Finance Association. Cambridge, MA: Ballinger.

Cuban, L. (1984). School reform by remote control: SB813 in California. Phi Delta Kappan, 66, 213-215.

Darling-Hammond, L., & Berry, B. (1988, March). The evolution of teacher policy (JRE-01). Santa Monica, CA: The Rand Corporation.

Elmore, R. F. (1986, December). Choice in public education (JNE-01). New Brunswick, NJ: Center for Policy Research in Education.

Elmore, R. F. (1988, December). Models of restructured schools. Paper prepared for the Center for Policy Research in Education, Rutgers University, New Brunswick, NJ.

Fuhrman, S., Clune, W. H., & Elmore, R. F. (in press). Research on education reform: Lessons on the implementation of policy. In D. H. Monk & J. Underwood (Eds.), Microlevel school finance: Issues and implications for policy, 1988 Yearbook of the American Educational Finance Association. Cambridge, MA: Ballinger.

Gamoran, A. (1987). The stratification of high school learning opportunities. Sociology of Education, 60, 135-155.

Hamilton, S. F. (1984). Raising standards and reducing dropout rates: Implications of research for recent secondary school reform proposals. Ithaca, New York: Cornell University. (ERIC Document Reproduction Service No. ED 273 570)

*Handler, J. (1986). The conditions of discretion. New York: Russell Sage.

Hanson, T. (1988). Curricular change in Dade county: 1982-83 to 1986-87. A replication of the PACE study. Paper prepared at the University of Wisconsin-Madison, Center for Policy Research in Education.

Kang, S., & Bishop, J. (1988). Vocational and academic education in high school: Complements or substitutes (Working Paper 88-10). Ithaca, NY: Cornell University, center for Advanced Human Resource Studies.

Levin, H. M. (1988, September). Accelerated schools for at-risk students (CPRE Research Report Series RR-010). New Brunswick, NJ: Rutgers University, Center for Policy Research in Education.

Lindblom, C. E. (1977). Politics and markets: The world's political-economic systems. New York: Basic Books.

McDonnell, L. M., & Elmore, R. F. (1987). Getting the job done: Alternative policy instruments. Educational Evaluation and Policy Analysis, 9(2), 133-152.

McLaughlin, M. (1987, Summer). Learning from experience: Lessons from policy implementation. Educational Evaluation and Policy Analysis, 9(2), 171-178.

Minnesota Department of Education. (1987, January). Postsecondary enrollment options program: Final report. St. Paul, MN: Author.

Moore, D. R., & Davenport, S. (1988, April). The new improved sorting machine. Paper presented at the Educational Writers Association conference, New Orleans, LA.

Murnane, R. J., & Cohen, D. K. (1986, February). Merit pay and the evaluation problem: Why most merit pay plans fail and a few survive. Harvard Education Review, 56(1), 1-17.

National Commission on Excellence in Education. (1983). A nation at risk: The imperative for educational reform. Washington, DC: U.S. Government Printing Office.

Oakes, J. (1983, May). Limiting opportunity: Student race and curricular differences in secondary vocational education. American Journal of Education, 328-355.

Oakes, J. (1986, October). Educational indicators: A guide for policymakers (OPE-01). New Brunswick, NJ: Rutgers University, Center for Policy Research in Education.

Olson, L. (1988, November 2). The restructuring puzzle: Ideas for revamping 'egg-crate' schools abound, but to what ends? Education Week, pp. 7, 8,

Patterson, J. H., & Williams, P. A. (1988). Computer education reform: An analysis of local effects. Paper prepared for the Center for Policy Research in Education, New Brunswick, NJ.

Peterson, P. L., & Comeaux, M. A. (1987). Assessing the teacher as a reflective professional: New perspectives on teacher evaluation. In A. E. Woolfolk (Ed.), The graduate preparation of teachers. Englewood Cliffs, New Jersey: Prentice-Hall. Prepared for the Center for Policy Research in Education, Rutgers University, New Brunswick, NJ.

Powell, A. G., Farrar, E., & Cohen, D. K. (1985). The shopping mall high school: Winners and losers in the educational marketplace. Boston: Houghton Mifflin Company.

Purkey, S. C., & Smith, M. S. (1983). Effective schools: A review. The Elementary School Journal, 83(4), 427-452.

Purkey, S. C., & Smith, M. S. (1985). School reform: The district policy implications of the effective schools literature. The Elementary School Journal, 85(3), 353-389.

Raizen, S. A., & Jones, L. V. (Eds.). (1985). Indicators of pre-college education in science and mathematics: A preliminary review. Washington, DC: National Academy Press.

Richards, C. E. (1988, March). Indicators and three types of educational monitoring systems: Implications for design. Phi Delta Kappan, 69(7), 495-498.

Romberg, A. T. (1988, September). Changes in school mathematics: Curricular changes, instructional changes, and indicators of changes (CPRE Research Report RR0-007). New Brunswick, NJ: Rutgers University, Center for Policy Research in Education.

Rosenfeld, S. A. (1987, February). Determinants of excellence in vocational education. In J. Wirt (Director), Design papers for the National Assessment of Vocational Education. Washington, DC: Department of Education, National Assessment of Vocational Education.

South Carolina Board of Education. (December, 1987). What is the penny buying for South Carolina? Assessment of the third year of the South Carolina Education Improvement Act. Columbia: Author.

South Carolina Board of Education. (December, 1988a). What is the penny buying for South Carolina? Assessment of the fourth year of the South Carolina Education Improvement Act. Columbia: Author.

South Carolina Board of Education. (December, 1988b). Draft prepared of an evaluation of the educational progress from South Carolina's education improvement efforts: The fifth annual report of the South Carolina Education Improvement Act. Columbia: Author.

Slavin, R. E. (1987). Taking the mystery out of mastery: A response to Guskey, Anderson, and Burns. Review of Educational Research, 57(2), 231-235.

Slavin, R., & Madden, N. (1988, November). Instructional strategies for accelerating the education of at-risk students. Paper presented at the Accelerating The Education of At-risk Students conference sponsored by Stanford University School of Education, Stanford, CA.

Smith, M. S., & O'Day, J. (1988, October). Teaching policy and research on teaching. Paper prepared for Rutgers University, Center for Policy Research in Education, New Brunswick, NJ.

Stanford University School of Education. (1988, November). Accelerating the education of at-risk students. (Conference brochure). Stanford, CA: Author.

Sykes, G. (1988, September). Licensure and certification of teachers: An appraisal. Draft paper prepared at Michigan State University for publication in L. Darling-Hammond & J. Millman (Eds.), Second handbook of teacher evaluation.

Wehlage, G., Rutter, R. A., Smith, G. A., Lesko, N., & Fernandez, R. R. (forthcoming). Reducing the risk: Schools as communities of support. England: Falmer Press.

Wiley, D. E., & Harnischfeger, A. (1974). Explosion of a myth: Quantity of schooling and exposure to instruction, major education vehicles. Educational Researcher, 3(4), 7-12.

Wolf, R. M. (1977). Achievement in America. New York, NY: Teachers College Press.