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ABSTRACT

Written for local, State, and Federal vocational educators, this publication discusses the feasibility of implementing recommendations from some recent evaluations of educational excellence. Criteria for estimating the appropriateness of evaluation findings are given, and recommendations are offered for creating an infrastructure among local, State, and Federal agencies to enhance utilization of evaluation findings. Section 1 explains the basic elements of excellence and evaluation using a three-step discrepancy analysis model. Attainment of excellence through the three stages of defining excellence, discrepancy identification, and discrepancy analysis is illustrated. Section 2 examines National studies in light of these elements of evaluation and excellence and presents highlights of some states' and localities' use of evaluation results, especially in vocational education. Section 3 introduces three approaches to organizing for excellence: centralized, partially decentralized, and decentralized. Attention is then given to program improvement structures. Organization of vocational excellence councils is explored, the value of information networks connected by computers is stressed, and role responsibilities of local administrators within a State improvement system are discussed. Section 4 provides background from within and outside vocational education on perceived necessities for interactively attaining and maintaining excellence through evaluations at local, State, and National levels. (YJB)

Information Series No. 294

TOWARD EXCELLENCE IN SECONDARY VOCATIONAL EDUCATION: USING EVALUATION RESULTS

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FOREWORD

Toward Excellence in Secondary Vocational Education: Using Evaluation Results addresses a significant question of our time: "Why do so many evaluation reports remain on the shelf when improvement is needed in our educational system?" In this publication, the feasibility of implementing recommendations from some of the recent studies on excellence is discussed, criteria for estimating the appropriateness of evaluation findings are given, and recommendations are offered for creating an infrastructure among local, State, and Federal agencies to enhance utilization of evaluation findings.

This publication is one of seven in a series produced by the Information Systems Division of the National Center. This series of information analysis papers is of interest to all vocational and adult educators, including Federal and State agency personnel, teacher educators, researchers, administrators, teachers, and support staff. In particular, evaluators will find the information in this publication stimulating and helpful in promoting utilization of evaluation results.

The profession is indebted to Dr. Donald R. Brannon for his conceptualization of the factors associated with use of evaluation results. Dr. Brannon is Associate State Director for Program Improvement, Division of Vocational Education, North Carolina Department of Public Instruction. He is a past president of the American Vocational Education Personnel Development Association.

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EXECUTIVE SUMMARY

The use of evaluation results often has been viewed as a means of improving vocational education at local, State, and Federal levels. This perception has resulted in a variety and a proliferation of evaluation reports. Some reports have been written by evaluators distant from the scene; others were produced at specific sites. The increase in the use of evaluations or in the publicity they receive has led one prominent observer (Blaydon 1984) to remark that the growth industry in education appears to be evaluation reports. Unfortunately, many evaluation reports lack utility for easy use by administrators and others. Rarely are the persons affected by the evaluations involved in the design of the study. A number of recent, highly publicized evaluations of educational excellence have not addressed vocational education at all. The feasibility of implementing changes derived from evaluation results often is overlooked. Recent studies on educational excellence typically identify ideal criteria, select ways to assess programs in relation to those criteria, and attempt to describe the discrepancy between the criteria and reality. The evaluation reports usually recommend that the discrepancies be decreased, without explaining how.

This publication was written for local, State, and Federal vocational educators. Persons who design evaluation studies, collect evidence to support conclusions, and present results to decision makers need to know how to have their reports accepted by others. The basic elements of excellence and evaluation are explained in this publication by means of a three-step discrepancy analysis model. Attainment of excellence is described through the following three sets of disparate criteria:

- Quantity and quality
- Efficiency and effectiveness
- Equity and satisfaction

Quantity and quality are elements of *excellence*, effectiveness and efficiency are often used as *evaluation* measures, and equity and satisfaction relate to *people* concerns. These six criteria encompass a diverse and broad-based approach to the attainment of excellence through the use of evaluation results. These criteria should be used to judge the feasibility of strategies for implementing evaluation findings.

National studies on secondary education are reviewed in this publication for information on how their recommendations would be implemented. Comments from authorities offer a less-than-promising picture of changes likely to occur as a result of these studies. Needed is a reliable means of synthesizing findings from evaluation studies and applying results to State and local situations.

The search for an organizational infrastructure to bridge gaps among local, State, and National evaluators continues in this publication with a review of selected State and local procedures for implementing evaluation findings. The most successful procedures appear to be programmatic in nature and interactive between the planners of evaluations and the persons affected

Variables influencing the use of evaluation results are extremely complex. Implementation of most evaluation findings requires modifications to accommodate unanticipated and unique needs of local settings. Rigid, prescriptive recommendations for change are rarely implemented successfully.

Three basic organizational frameworks are presented in this paper as conceptual models for determining and implementing evaluation results. They are as follows:

- Center-to-perimeter model
- Center-node-perimeter model
- Network model

The *center-to-perimeter model* of evaluation implementation is often focused on unattainable ideals because the distance between where the evaluation is designed and where it must be implemented is too great. The *center-node-perimeter model* is an extension of the first form. It is somewhat more flexible than the first but lacks the spontaneity of the network model. The *network model* allows individual units freedom to design evaluations responsive to their own needs. Clearly, there is a need for infrastructures to articulate and negotiate evaluation or program needs in vocational education at the local, State, and Federal levels.

The prototype infrastructure presented in this paper for analyzing and using evaluation results is based on the following premise: persons affected by a study should be involved in the process of evaluation.

This involvement may take many forms, such as helping to design the study or participating in a self-study prior to interaction with an external site visit team. A sense of ownership of evaluation results by local personnel is viewed as essential for effective implementation. The following activities are recommended for attaining excellence through the use of evaluation results:

- **Organize local vocational excellence councils (VECs)**. These councils should be comprised of teachers, business persons, school administrators, and parents who would be asked to review program improvement plans and recommendations before evaluation findings are implemented.
- **Upgrade access to information by using personal computers**. Teachers, administrators, and other curriculum planners can keep up-to-date using personal computers. The computers can facilitate coordination among schools via electronic mail, newsletters, and other communication devices.
- **Develop coherent State improvement systems**. Technical assistance in the form of inservice workshops, small grants of funds for new ideas, and other state-sponsored activities should encourage local innovation within predetermined, goal-oriented guidelines.
- **Agreed-upon nationwide goals for vocational education**. Excellence can only be achieved through concerted efforts from diverse constituencies within vocational education. Professional organizations have a major catalytic role to perform in bringing about cohesiveness among these groups Agreement on goals and priorities is essential for effective use of evaluation results.

PURSUING EXCELLENCE WITH A DISCREPANCY MODEL

Much ado about generic excellence pervades and surrounds education, including vocational education. A number of studies about education have resulted in general identification of perceived ills in education and recommendations to cure them. However, most of the nationally prominent studies have ignored recommendations for improving vocational education.

This publication was written against this backdrop of concern for excellence in education and will help vocational educators determine whether or not these evaluation reports and their recommendations do, in fact, move programs toward excellence in vocational education. A second general purpose is to share ideas on procedures and organizational frameworks for better evaluating vocational education.

Specifically, this publication is for practitioners—persons at local or State levels who are responsible for designing and implementing evaluations, and those who are in training to do so. Furthermore, it will promote understanding among those who are involved in both conducting and using the results from evaluations during the next 5-year evaluation cycle mandated by the Carl D. Perkins Vocational Education Act of 1984 (U.S. 98th Congress 1984).

There are specific requirements for effectively attaining and maintaining excellence in vocational education. These requirements can be met only through understanding essential elements of evaluation, training people to use correct procedures, and then building an infrastructure to analyze findings and apply relevant ones to local situations. An infrastructure is the framework necessary for the desired interrelationships among the parts. To meet these requirements, one must be able to recall and understand the following:

- The elements of excellence
- The elements of evaluation
- Local, State, and National structures and infrastructures, as appropriate, needed, or mandated to support the evaluation of excellence
- Structures and infrastructures needed to support the maintenance of levels of excellence already attained and to attain higher levels of excellence as needed
- Specific situations during a specific time span in which these requirements are to be applied
- How to fit together (synthesize) the elements of excellence and evaluation into a practical structure

This is a tall order, one not attainable within the space limitations of this publication. Therefore, this publication discusses primarily the use of evaluation findings as a means of upgrading vocational education programs. Very little is said about how the findings are generated except for references to factors that impinge on use. This is an appropriate disclaimer because the specific method of collecting evaluation evidence should be left up to persons designing a particular evaluation study. The purpose of the evaluation, the primary user audience, and time and cost constraints must be known to select the proper means of collecting data. This publication focuses on essential aspects

of evaluation utilization as a means of attaining excellence in vocational education.

This publication defines and illustrates the basic elements of excellence and evaluation as they apply to vocational education and then identifies structures and infrastructures necessary to support them. Examples are given to illustrate these structures among National studies, State evaluation procedures, and selected Federal laws pertaining to vocational education. With these definitions, illustrations, and relationships as a background, ideas for building a system oriented to the needs of local vocational programs are shared.

The Pursuit of Excellence

Excellence in education, including vocational education, continues to be one of the most sought after yet elusive qualities of schooling. The National Commission on Excellence in Education's (1983) report, *A Nation at Risk: The Imperative for Educational Reform*, asked the public to rethink its educational priorities. It called for reform, recommended an increase in high school graduation requirements, and asserted the need for higher standards without ever defining excellence. For the purposes of this publication, *excellence* has been defined as ideal qualities and quantities of education that benefit students as effectively and efficiently as possible.

Education is never static. Different combinations of educational resources exist at different points in time. Likewise, students' needs change. Older students—adults—have different needs than secondary students. Handicapped youth have different needs than youth learning English as a second language. Society delegates, through elected officials, the responsibility of interpreting societal values and setting priorities in school programs. This occurs at all levels—local, State, and Federal. Optimum benefits to recipients of education—or educational excellence—will be attained whenever the highest student achievement occurs in relation to the resources (e.g., time, money, and expertise) expended. This is the concept of excellence used for this publication.

It is important to keep expectations in perspective and to concentrate on objectives that are attainable. Experience helps keep evaluation activities on target. When one combines experienced management and leadership with evaluation activities, a new dimension is added to judgments about what is and what ought to be: what can be.

This added dimension operationalizes excellence by putting it within reach. It helps us understand which levels of excellence are possible for different sets of circumstances. This operational concept is at the heart of being able to use evaluation results to attain and maintain excellence.

The reason for this is simple. Vocational education operates within a condition of scarce resources. Those controlling sanctions and evaluations should not allow resources needed to maintain present levels of excellence to be diverted from already-attained areas of excellence to unattainable ones. A misdirection of resources could actually lower overall levels of excellence for the system.

The idea of a pragmatic system is to focus on attaining and maintaining levels of excellence that are feasible. Determining such possibilities in complex reality is based far more on art than science and more on judgment than measurement. The following section will describe a three-stage discrepancy analysis model and address conceptual concerns about excellence and evaluation.

Comparing Reality to Excellence: A Three-Stage Model

Evaluation is a process of estimating the worth of activities and programs for the

purpose of making decisions. Evaluators strive to identify and verify vocational education programs that need to be maintained as well as those that need to attain higher levels of excellence. A useful tool for comparing reality with excellence is the *discrepancy analysis model*. It helps evaluators compare the present state of affairs with "what should be."

The discrepancy analysis model has three stages. The first stage defines excellence or "what ought to be." The second stage identifies the discrepancy between "what is" and "what ought to be." The third stage contains an analysis of what to do about the discrepancy identified in the previous stage.

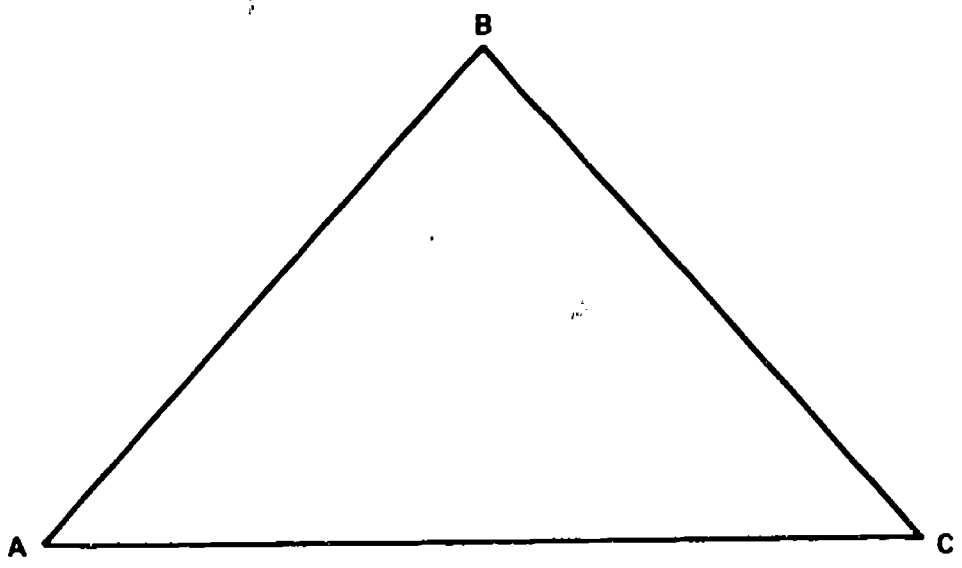
The first and foremost problem in using this model is that the ideal can never be attained. Any real entity or state of affairs compared to such an ideal must be judged or measured as lacking. Second, an ideal cannot be measured in units common to reality, although it can be described. As a result, surrogates, selected because they are measurable, tend to be substituted for the ideal. People may then seek the substitutes rather than the ideal. Furthermore, in a democratic society, there are varying perceptions of what is ideal. Consensus building is difficult. Methods of evaluation, therefore, should include ways to build consensus among potential users of the results.

Excellence is composed of quality or quantity. Evaluations cover either effectiveness or efficiency or some variations of these. Ideals can have the attribute of being both complementary and at times contradictory, possibly offsetting each other. Adherence to one ideal may diminish the other.

The first two sets of elements—(1) quality and quantity and (2) effectiveness and efficiency—are the dominant traditional ones and are applicable to all parts of vocational education. The third set is more in line with the evolution of a democratic society in which vocational education functions to develop human resources (people).

Stage I: Defining Excellence

The first stage of a discrepancy analysis is modeled visually in figure 1.



ABC=Excellence; an ideal envisioning what should be.

Figure 1. The excellence pyramid

This model represents an ideal entity or state of affairs. If the tip, or apex, were to be reached, excellence would be attained. If excellence were to be attained, the focus of using evaluation results would then move to maintaining excellence. It is important to remember that the entire pyramid, not just the apex, represents excellence. Excellence is just as much a part of the bottom as it is of the top of the pyramid. In order to attain or maintain the top, the bottom also must be maintained.

Quantity and quality. These two basic concepts illustrate the point that complementary and countervailing criteria can be used to assess attainment of goals. Typically, as the demand for quantity increases, quality will be lower; as the demand for quality increases, quantity will be lower. In regard to vocational education, then, we must conclude either that higher quality vocational education programs will be balanced by fewer programs or that higher quantity vocational programs will be balanced by lower quality programs. Related to the juxtaposition of "quality" versus "quantity" are "judgment" versus "measurement," "words" versus "numbers," and "subjectivity" versus "objectivity." The evaluation of quality typically is done through observations that are converted into words and, therefore, is subjective. At best, quality can be estimated.

Quantity, on the other hand, can be measured through numbers under the aegis of objectivity. Often, measurements of quantity are substituted for judgments of quality because such measurements are consistent with others' measurements of the same object taken at another time, and can be divorced from the evaluator. Judgments tend to vary more than measurements do, and judgments are closely aligned with the values of the evaluator.

Sometimes certain indicators of quantity are used for evaluating quality simply because measurements of quantity are available. Whereas the use of measurements can be largely objective (if assumptions are met and if the user follows procedures accurately), the selection of the measures is always subjective. Perceptions of each measuring device underlie judgments of its qualities.

Vocational education legislation. A major, if not the primary, goal of the Vocational Education Act of 1963 dealt with quantity. Increasingly, Federal legislation has dealt with quality. Compare the quantity goal implicit in the Senate Committee on Labor and Public Welfare's (U.S. 94th Congress, 2d session 1976) summary of the "progress" of the Vocational Education Act of 1963 to the purposes of the Perkins Act of 1984:

> The Committee's hearings showed that the Vocational Education Act of 1963 and its amendments have clearly achieved tremendous progress. This can be seen in greatly increased enrollments at all levels, especially among post-secondary students and among the disadvantaged and handicapped, greatly increased expenditures of funds for vocational education from local, state and Federal sources, the construction of thousands of area vocational schools throughout the country, an increase in the number of trained teachers, and an expansion in the number and variety of course offerings and occupational training areas.

In contrast, the overall goal of the Perkins Act of 1984 (U.S 98th Congress 1984) is to assist the States to expand, improve, and update high-quality programs of vocational education. According to this act, quality in vocational education is directly or closely related to—

- the pertinence of programs to the workplace and to new and emerging technologies.
- the responsiveness of programs to the current and projected occupational needs in the State.

- the capacity of programs to facilitate entry into and participation in vocational education and to ease the school-to-work and secondary-to-postsecondary transition,

- the technological and educational quality of vocational curricula, equipment, and instructional materials to enable vocational students and instructors to meet the challenges of increased technological demands of the workplace, and

- the capability of vocational education programs to meet the needs for general occupational skills and improvement of academic foundations in order to address the changing skills needed for jobs.

In other words, while the Perkins Act is in effect, all five of these indicators will be at the top of the excellence pyramid when quality is evaluated based on Federal indicators of excellence in vocational education. Interestingly, none of these quality indicators refer to access to vocational programs by special groups or to equity.

The degree to which progress is made in reaching these ideals will depend not only on the context of each situation being evaluated, but also on the use of evaluation results. If the accomplishment of one of these ideals diminishes the possibility of accomplishing any of the others, then the indicators themselves will cause negative evaluations. The second stage of the discrepancy analysis model will help to determine the relationship between these indicators of excellence and reality.

Stage II: Discrepancy Identification

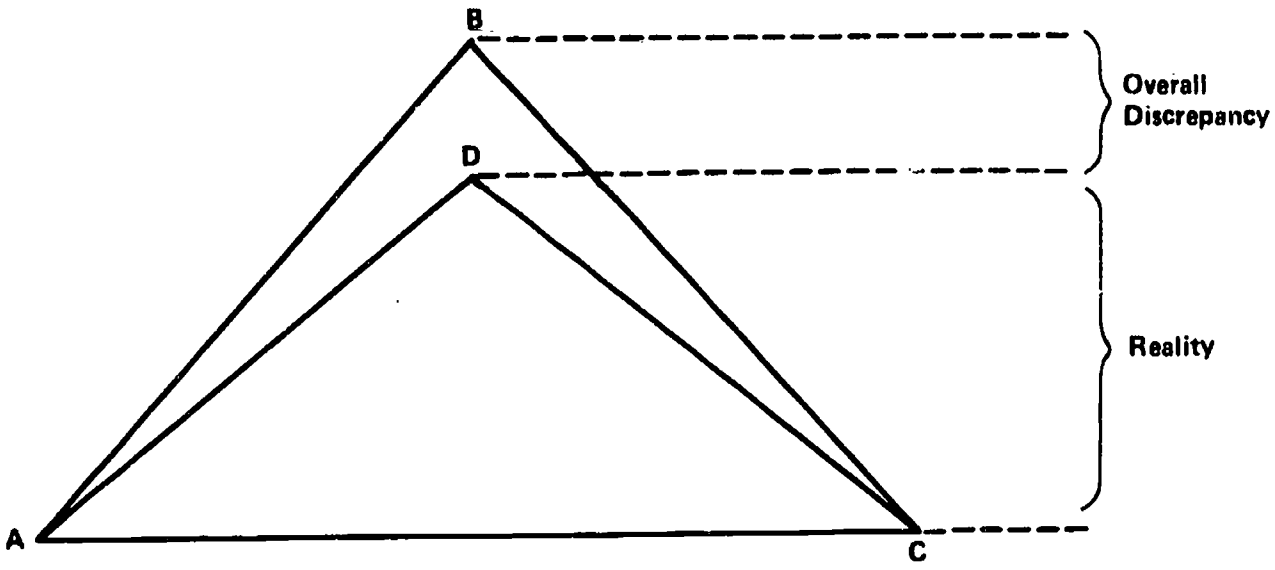
Evaluation using a discrepancy analysis model compares measurements or judgments of present reality with indicators of excellence, whether they fall under quality or quantity. This comparison of the discrepancy analysis is called *discrepancy identification*.

Under the first of the five federally mandated indicators of quality, an evaluation system would identify the degree to which vocational programs in reality were pertinent to the workplace and to new and emerging technologies. Hypothetically, there is an ideal level at which all vocational programs would be absolutely pertinent, but in reality there is a present level of excellence already attained and being maintained.

The difference between the two levels is a discrepancy. The size of the discrepancy indicates the amount of improvement in quality and quantity necessary to reach excellence. A reduction in the discrepancy means a higher level of excellence has been attained. The second stage is represented in figure 2. One should evaluate the effectiveness of the system in getting to and staying at its highest level and its efficiency in reaching that level.

Efficiency and effectiveness. Two concepts related to the goals and objectives of an organization, and prevalent to the second state, are efficiency and effectiveness. All too often it appears that there is less than adequate understanding of their meanings or implications for conducting and using results of evaluations in vocational education. First, we will examine effectiveness, the evaluation of which is highly appropriate for vocational education; later, under the discussion of stage three, we will examine efficiency, the utility of which is questionable in evaluating vocational education.

Effectiveness traditionally has been defined as the degree to which prescribed goals or objectives are attained or intentions are reached. In this case, it refers to the degree to which excellence is attained and maintained. A more useful definition, however, considers the degree to which goals themselves are judged to be appropriate and feasible for their chosen contexts.



ABC = Excellence; an ideal
ADC = What is; attained levels of excellence now being maintained; reality
ABC-ADC = Overall discrepancy

Figure 2. Stage II: discrepancy identification

The more distant the evaluation is from the actual context of the situation being evaluated, the more likely it is to stop at the second stage of the discrepancy analysis model. This characteristic is typical of most, if not all, of the National studies on education. This situation may lead to unrealistic expectation and the identification of needs rather than an examination of the total picture of what has been attained.

The second stage of the model, discrepancy identification, draws attention to the difference between excellence and present reality. The tendency is to look at the emptiness of the pyramid rather than at its fullness. This view may backfire in focusing always on shortcomings with little, if any, attention given to present levels of excellence. This focus on the need for improvement may yield gaps in maintaining excellence. In other words, the model itself may affect the degree to which excellence is perceived to have been attained.

According to prevailing judgments, vocational education typically is evaluated, for example, by the number of graduates placed in occupations for which they were prepared. The degree to which this occurs is a measure of a program's effectiveness, all other things being equal. Unfortunately, all other things are not equal. For instance, the placement of vocational graduates in Baltimore, Maryland, would be more difficult than in Raleigh, North Carolina, due to the youth unemployment rates for these localities.

Current legislation. The Perkins Act addresses effectiveness. It directs each State to develop measures for evaluating specifically the effectiveness of programs assisted under this act in meeting the needs identified in the State plan. For example, States could use the following as measures or indicators of program effectiveness:

- The occupations for which people train, which will reflect a realistic

assessment of the labor market needs of the State

- The levels of skills to be achieved in particular occupations, which will reflect the hiring needs of employers

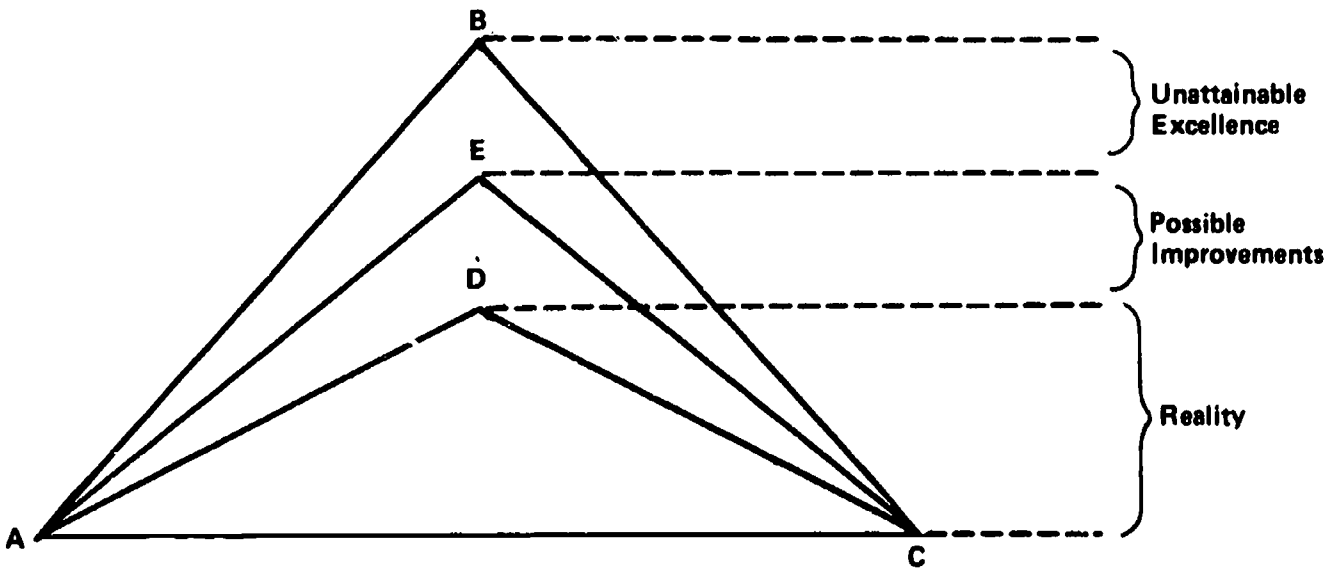
- The basic employment competencies to be used in performance outcomes, which will reflect the hiring needs of employers

- Measurements for all of these regarding their effectiveness for the handicapped

In other words, these four indicators should be considered when each State evaluates its vocational programs based on federally mandated indicators of effectiveness.

Stage III: Discrepancy Analysis

The often-neglected third stage of the discrepancy analysis model is illustrated in figure 3. The third stage more closely represents the real form of a useful evaluation if the intent is to make discernible progress toward excellence. This stage of discrepancy analysis takes into account the feasibility of implementing recommendations; the first and second stages of the model did not. Although the space ABC continues to represent our idealized sense of excellence, new dimensions of the model have been introduced, AEC. This space represents potential improvements—feasible changes to be implemented. This level of reality is different from the status quo, ADC, and within the range of possible improvements. The difference between ABC and AEC represents a



ABC = Excellence; an ideal
ADC = What is; attained levels of excellence now being maintained; reality
AEC = What is possible
ABC-ADC = Overall discrepancy
ABC-AEC = Idealized discrepancy; unattainable excellence; political rhetoric
AEC-ADC = Attainable further excellence or possible improvements

Figure 3. Stage III: discrepancy analysis

level of excellence that is unattainable. Perhaps the costs are too high or the particular attributes of excellence represented by this level of attainment are not valued by society.

Previous legislation. When the previous Federal law governing vocational education (Public Law 94-482, for example) is held up to the light of stage three, some of its ideals are not fully attainable. Because the field seemed to accept these ideals as "what could be" and was evaluated using them as realistic standards, the field was found lacking. Some paraphrases suffice to describe these ideals:

- Vocational education will be available to all people in all communities (not to some or only as feasible).

- Vocational education will overcome sex bias and sex role stereotyping (not reduce or help reduce).

Additional predictors of inaccurate evaluations of effectiveness occur in situations where the accomplishment of one goal may diminish the accomplishment of others. *Vocational Education Study: The Final Report* (National Institute of Education 1981) asserts that of the purposes of Public Law 94-482, "equalization and special needs purposes . . . are likely to be at odds with improvement purposes." The report also observes that if higher placement percentages became an indicator of excellence, the result would be a curtailment of enrollment; instructors would feel compelled to exclude students who may not be easily placed after graduation.

The countervailing goals of maximum placement and maximum access to some extent cancel out each other, placing vocational instructors in a perplexing position. Any employee who receives conflicting commands must be evaluated as being ineffective in carrying out one or both of the commands. Apply this conclusion to all affected vocational teachers and the size of the problem becomes evident.

Efficiency, on the other hand, presents a different story. If two vocational programs were equally effective, and if the second of the two were to use fewer resources (inputs) per completer (unit of output), then the second program would be more efficient. *Efficiency*, therefore, is the ratio of input to output, assuming consistent qualities for both. The more common term used for efficiency is *productivity*. The guideline for efficiency is to choose the process requiring the least input to produce the same product.

The term a*dministration* in the Perkins Act means activities necessary for the proper and *efficient* performance of a State's duties. Evaluations of efficiency require measurable, comparable input and output. In vocational education, we cannot objectively isolate the components of input into education or output from education. We *can* isolate, describe, or measure the race, sex, handicap, geography, or socioeconomic level of students. Graduation rates, scores on the Scholastic Aptitude Test (SAT), and percentages of graduating seniors going on to college are some popularized measurements for output. Less easy to relate to vocational education is employer satisfaction with vocational completers.

Measurement of Goals

Although all profit-making institutions have financial gain as their goal, in a pluralistic society, no similarly clear-cut goal exists for vocational education. Evaluating attainment of excellence in vocational education is complex. Taxpayers, parents, politicians, administrators, teachers, and students evaluate the effectiveness of vocational education in their own ways at different levels. Their views of and responsibilities for excellence take many directions, as do their standards of excellence.

Vocational education obviously cannot produce one product for multiple constituents. It must be continually involved in determining what its products should be,

including determinations by those who set curriculum requirements, those who elect to attend or not attend classes, parents of attendees, those whose taxes pay for these classes, and so forth. Furthermore, there are multiple indicators of attainment and maintenance. Indicators are selected subjectively not only based upon the values of those who selected them, but also based on a choice of those indicators that are readily measurable and collectible.

A hazard of selecting readily available measures is that just as students tend to study for what they think will be on a test, and teachers tend to teach for tests that will publicly reflect on their abilities, so education systems tend to move directly toward available output *measures* rather than toward the output *goals* these measures purport to represent.

In other words, although an SAT or American College Test (ACT) score is a simplistic effectiveness measurement about a fairly circumscribed set of achievement outcomes of education, it tends to be substituted for the aptitude it was supposed to measure. Now, it is often cited as the primary measure of quality in secondary education, although it was designed only to predict grades during the freshman year of college. Achieving high average scores on the SAT seems to be the goal of a number of high schools instead of the ideal underlying accomplishments and student potential these scores originally were said to represent. Only a part of all secondary school students take the SAT and ACT examinations, but the scores are assumed to represent all students.

From this and other evidence available, education as presently measured and constituted appears to be more efficient for certain groups of individuals than for others. In other words, education apparently requires more or different input components for persons having certain measurable qualities. Efforts to promote increased educational efficiency have led to "special programs" and additional resources for at-risk individuals. These special groups need greater or different efforts to produce attainment levels comparable to those of other students. Relevant adjustments in effort need to be explored in some depth, especially since vocational education is one of those "special programs" considered to be helpful to at-risk groups.

Equity and Satisfaction

In a democratic society where most people's basic survival needs are met, higher level needs become the common focus. Equity and satisfaction are examples of higher needs. All people are deemed to be created equal. Aligned with equity, the concept of satisfaction pervades our society. The current definition of *management* is working with and through people to accomplish organizational objectives and includes attaining an acceptable level of employee personal satisfaction. This approach to management has been evolutionary. Both equity and satisfaction will continue to evolve as indicators of quality. These two concepts also have spawned evaluations of how special groups are served and how well they perform.

A demonstration of the degree to which the legislative and executive branches of the Federal Government have come to view vocational education excellence in terms of equity is evidenced in the degree to which funds available under the Perkins Act are targeted to groups requiring more efforts to achieve equity. About 57 percent of the basic State grant funds available to States and localities are targeted to provide vocational education services and activities to meet the special needs of selected groups: handicapped and disadvantaged, adults who are in need of training or retraining, single parents or displaced homemakers, participants in programs designed to eliminate sex bias and stereotyping in vocational education, and criminal offenders who are serving in correctional institutions. (Note again the use of the absolute term "eliminate"—an ideal not achieveable.)

According to the Perkins Act (U.S. 98th Congress 1984), the supplemental or additional resources and efforts needed to attain equity in providing vocational education effectively to disadvantaged and handicapped students through Federal funds consist of (1) staff, (2) equipment, (3) materials, and (4) services not provided to others that are essential for disadvantaged or handicapped individuals to participate in vocational education. The concept of excellence used especially in regard to disadvantaged individuals is noteworthy. The available funds may be used for the improvement of vocational education services or activities designed to provide equal access to quality vocational education for disadvantaged individuals.

The criteria for equity and efficiency as goals may or may not be compatible. The rule of efficiency is that given two processes producing the same product, the one requiring the least input is the most efficient. For example, a teacher who wishes to be evaluated as efficient and who is given the opportunity would logically choose students requiring less input to achieve the stated objectives of the course, for instance, a high percentage of employment. With equity as an evaluation criterion, students are chosen who require *more* input to achieve the objectives of the course, and through addition of resources, attempts are made to get these students to achieve those objectives. Equity in access to programs and in attainment of program objectives is ideal. Excess costs are those providing the additional resources to achieve equity in access and course objective attainment.

In summary, equity and satisfaction are not only ideals of a democratic system aspiring to excellence, but equally important, they are needed as ways and means of attaining other ideals of that system, such as assisting the States in meeting the needs of the Nation's existing and future work force. These needs include the following:

- Improve productivity and promote economic growth
- Serve those inadequately served
- Promote greater cooperation
- Improve academic foundations
- Serve the employed and unemployed
- Serve economically depressed areas
- Provide supportive services, special programs, guidance counseling, and job placement
- Increase consumer and homemaking effectiveness
- Decrease sex role sterotyping

Is it possible to attain these ideals? Is it possible to be evaluated as effective and efficient enough to attain the quality and quantity of programs implied in these ideals? This will be determined when vocational education is evaluated under the goals and purposes of Public Law 95-524. All of these ideals come directly from that law. Leaders in the field now have the major task of deciding how to meet these goals, how to influence evaluators to use feasible indicators as evaluation criteria, and how to report these findings realistically.

For the present, however, we can use the elements of excellence and evaluation to examine the degree to which vocational education has been realistically evaluated in the near past by looking at major recent National studies that affect all of education. This examination is intended to give vocational educators interested in evaluation design a preview of some of the considerations they will have to face. The next section will first examine popular National studies in light of the elements of evaluation and excellence covered earlier, second, other National studies in general will be examined, and third, conclusions will be presented about using evaluation results, especially in vocational education.

Implications for Excellence from National Studies

The National studies on education serve as examples of evaluation efforts that typically use ideal standards and pay minimal attention to feasibility. The degree to which they dealt in reality is indicated by the degree to which their study committee members considered the feasibility of implementing their recommendations.

The National Commission on Excellence in Education (1983) sponsored by the U.S. Department of Education simply recommends that citizens across the Nation hold educators and elected officials responsible for providing the leadership necessary to achieve the recommended reforms.

Peterson and the Twentieth Century Fund Study Task Force on Federal Elementary and Secondary Education Policy (1983) do not refer to implementation planning; however, the Task Force on Education for Economic Growth (Education Commission of the States 1983) recommends that each State develop and implement a K-12 education improvement plan. The plan would be developed by a broadly inclusive task force on education appointed by the Governor. Each local education agency would do likewise.

The National Science Board's (1983) Commission on Precollege Education in Mathematics, Science, and Technology recommends that local boards foster public and private partnerships for constructive change; that cooperative programs be established with the private sector for resource sharing, including equipment contributions; and that students be provided programs and opportunities to see science and technology actually applied in plants. Their teachers should also be employed throughout the entire year.

The Carnegie Foundation for the Advancement of Teaching (Maeroff 1983) recommends that each college or university form a comprehensive partnership with one or more secondary schools and that secondary schools should establish connections with libraries, museums, art galleries, colleges, and industrial laboratories.

The National Academy of Sciences (1984), as summarized in its report, *High School and the Changing Workplace: The Employer's View*, indicates an understanding that implementation of its findings will require dedication, patience, and very hard work by all concerned.

From within the vocational education field, Magisos (1984) offers conclusions about the implications of implementing these National studies; he urges vocational educators to adopt a mentality for excellence which extends to every course and every student.

Magisos lists nine recommendations gleaned from National studies (abbreviated herein) for which vocational educators must understand implications.

- A common core of learning
- Stiffened requirements
- More able teachers
- More intensive learning
- Meeting critical shortages of teachers

- Improved management
- A strong Federal role
- Partnerships
- A balance between quality and equity

Paul Peterson (1983), director of Governmental Studies at the Brookings Institution and a member of the National Academy of Sciences' task force that produced *Education for Tomorrow's Jobs* (Sherman 1983), summarizes the National reports as reassertions of what is well-known, exaggerated claims on flimsy evidence, pontification on matters about which there could scarcely be agreement, and recommendations that either cost too much, cannot be implemented, or are too general to have any meaning.

Peterson feels that such evaluations—

- are almost certain to exaggerate the problem they address;
- state only broad, general objectives;
- recommend changes that are beyond current technology and resources;
- do not spell out the details of their proposed innovations;
- seldom call for institutional reorganization; and
- poorly document the value of the proposed solutions.

Why has so little attention been given nationally to effectively implementing the results of the National studies? Peterson concludes the problem is that no one has written any reliable recipes for producing the desired results.

Prakken (1984) says there is a need for legislators and education board members to learn about the values of industrial and vocational education to students ignored in the national statements. State and local elected representatives need to know about the accomplishments of industrial and vocational education. Individual shop teachers need to include practice in the basics and to update their programs in new technologies with a closer tie to local industries. Shop teachers need to acquaint school administrators, parents, the public, and students with the objectives and accomplishments of their program.

Reliability refers to consistency. Consistent actions require consistent situations. The reason we do not have reliable recipes is not only because the environment within which schools function is more complex than described earlier, but also, as Peterson points out, because schools' needs are always balanced politically against other social and ideological concerns such as health, welfare, or defense. This balance is not acknowledged by the National reports. Accordingly, Peterson concludes that the state of the economy will dictate the amount of needed resources that come to education for improvements far more than will any of the studies' recommendations. None of the National reports addressed education's reciprocal dependence on the economy.

Secretary of Education Bell (Fiske 1984) added even more succinctly to Peterson's summary of the possibility of attainments from National studies by concluding that the number of reforms on the platter may lead to indigestion in application. According to the same report, as of September 1984, States have responded in the following manner:

- Forty-two States' solutions have been to increase certification standards.
- Forty have increased the number of academic courses required for graduation.
- Thirty-two have changed curriculum standards required for graduation.
- Thirty-two have changed curriculum standards or textbook adoption procedures.

- Twenty-four have lengthened the school day or year.

According to Bell (Fiske 1984), the United States now faces the biggest test of educational leadership, administrative competence, and school diplomacy in our history. This comes about at least partly because educators have been the missing element in making the recommendations. Governors and other political or business leaders who backed them face the challenge of persuading educators to carry out policies that largely were enacted without their participation and, in some cases, over their fervent objections.

The Complexities of Attaining Excellence

In recent years, there appears to be increased realization among national-level researchers of the complexities involved in improving vocational education and the necessity of focusing efforts at the local level. Additionally, realizations seem to be increasing that models designed to generalize evaluation results to a much larger population apply less effectively than more pragmatic ones designed to meet local needs in local situations.

Some of this realization has been arrived at through research carried out by the National Center for Research in Vocational Education, as well as through other institutions working on a National scale. Moser (1983) sums up what appears to be an emerging consensus at the National level, that replacing old materials and practices with new and better materials and practices is far more difficult for school districts than was once assumed. McCaslin (1974) concludes that the application of evaluation results may be worse than no evaluation activities at all if the local conditions, including limitations, are not understood by those trying to apply the results.

Studies by Caplan, Morrison, and Stambaugh (1975), Caplan (1980), Berman and McLaughlin (1975-1980), the Human Interaction Research Institute (1976), Raizen and Rossi (1981), Franchak and Kean (1981), Degner (1982), and Moser (1983) indicate that the dissemination of evaluation data, new products, new materials, or new practices alone seldom fosters change. This kind of information simply does not play a central role in local decision making. Hull and Adams (1984) came to somewhat the same conclusion. They discovered that because program improvement is issue oriented and site specific, the worth of any product (in this case evaluation results) depends on its relevance to the problems at that site.

There are complex reasons why information alone does not yield desired change in those receiving the information. The information can pose new risks for those in the organization. It can perturb the organization, challenge assumptions, challenge traditional ways of doing things along with the social relationships in the group, and threaten agendas and rationales for budget items (Raizen and Rossi 1981). Furthermore, new information can yield more disorganization as the organization to which it applies seeks to adapt (Youngman et al. 1980).

If these studies are accurate, then designing an environment for excellence means designing an atmosphere that encourages interactive evaluations, that supports and facilitates localities' own attempts to attain and maintain levels of excellence. The larger systems must try to design means to fit with the more localized ones, instead of the traditional attempts to mandate improvements from the top down.

State and Local Evaluation Results

Following are highlights of how some States and their localities have been using evaluation results. This information is taken from a June 1984 review of selected States' fiscal year 1982 or fiscal year 1983 accountability reports in which it is mandated (by P.L. 94-482) that States report yearly on the

results of the uses of evaluations of their programs over the 5-year evaluation cycle. These examples are a sampling, not inclusive or representative of all the actions of all the States. These highlights are followed by a contrasting summary of evaluating State and local actions based on expended funds as presented in *The Vocational Education Study* (National Institute of Education 1981).

Most of the selected States typically followed the process of "front-end loaded" evaluation systems found earlier in *The Vocational Education Study*. In these systems, localities typically conducted self-assessments by program, the State verified these assessments, localities developed improvement plans, localities may or may not have shared these improvement plans with the State, and the State may or may not have provided follow-up technical assistance to aid in making improvements.

In North Carolina, following individual self-assessments, State consultants' on site visits verified self-ratings of teachers. Specific recommendations were sent by State consultants for each program. Local improvement plans were included in their annual applications for funding. Improvements were at local discretion. Computer runs of numerical ratings identified State-level priorities for inservice and other activities.

In Maine (1983), for example, localities conducted a self-study using State board criteria. The State visited the localities to audit the self-study findings. Each local education agency (LEA) reported its findings and recommendations to the State board. Action was taken by the State board for approval or disapproval regarding the modification or continuation of the local vocational programs evaluated.

Arizona (1983) reported that its assessment process included both program compliance and quality items. Areas assessed included planning, curriculum, staff development, facilities, equipment, safety, guidance and counseling, articulation, program development, advisory councils, placement, and vocational student organizations. Nine to twelve months after the program review, the team chairperson conducted a follow-up. The results indicated that local school districts actively utilized the results of the assessment process as a means of improving their programs. Additionally, this process was used as a productive and positive public relations activity.

Georgia (1983) focused heavily on monitoring outcomes in programs with, for example, a requirement of 75 percent placement in postsecondary institutions and 50 percent in secondary schools. Georgia's position on using evaluation findings for results asserts that the ability to evaluate capability and adequacy is an essential part of the assessment of statewide programs of occupational education; it is clear that the effectiveness and value of a program can be determined most effectively with respect to outcomes.

Colorado's (1983) conclusion about success in using evaluation results was that the results of the evaluation are virtually guaranteed by the process. This process included four types of evaluation: (1) on-site supervisory reviews (checklists), (2) comprehensive program reviews (requested by localities), (3) cost-effectiveness model evaluations, and (4) evaluations for local administration and local advisory committees. The process included 10 visits; an assessment of the administration, guidance and counseling function, and other support functions; a complete report with all recommendations sent to the district or institution, the district or institution being invited to respond with or without agreements; negotiated timelines for carrying out the improvements; and follow-up visits 1 year later.

Colorado's cost-effectiveness model was used to evaluate and compare costs for full-time students, completion rates, placement rates, and the number of male, female, disadvantaged, handicapped, and minorities in programs. It yielded a ranking, with emphasis

given to both the top 5 percent and bottom 20 percent. The results of this cost-effectiveness evaluation system yielded the identification of the following areas needing improvement:

- Inaccurate reporting
- High equipment costs
- Low percentages of placements
- Possible poor student identification of vocational objectives
- Possible teacher effectiveness problems
- Errors in computing program costs and full-time equivalency costs

Assistance was provided to school districts and institutions to rectify inadequacies. Colorado then went further than other typical States in inducing improvements: if the program was not improved, it was placed on probation. Failure to remove the program from probationary status resulted in the termination of funding support under the Colorado Vocational Education Act. Thus, the positive results of this evaluation are virtually guaranteed by the process. The key parts of this process seem to be thoroughness, negotiated agreements, and legislative backing.

Illinois (1984) used a variety of sources including the program reviews to assess comprehensive improvement needs and identify priorities. From a statewide survey of vocational educators, on-site evaluations, final reports from research and development, individual and group concerns from such organizations as the Illinois Vocational Association, the University Occupational Coordinating Committee, and the Illinois State Advisory Committee's ideas and testimony, improvement priorities were selected based on their universality, their relationships to the State's vocational goals, and the availability of resources—financial, material, human, and time.

Texas (1983) reported on the following four purposes of validating its vocational education evaluation system:

- Improving existing programs
- Improving the design of the evaluation system
- Providing technical assistance for program evaluation
- Increasing local compliance prior to required monitoring

Claims for the results of this system were conservative. For example, one out of eight respondents identified the lack of evidence that all vocational education programs had been evaluated prior to the local evaluation plan. And, one out of eight reported that evaluation results were used for documentation purposes and to provide information to the Texas Education Agency.

Connecticut (1983) reported that its reviews covered advisory committees, administrative support, curriculum development, program of studies, public relations, safety, staffing, student retention, and vocational student organizations. Two noteworthy accomplishments are that the annual plans and proposal for ensuing years are reviewed to ensure inclusion of earlier evaluation recommendations prior to approval and that a review of the follow-up report prepared by the local education agencies evaluated show that better than 80 percent of the recommendations have been carried out.

Florida (1983) has a nationally recognized program improvement system. A major objective of Florida is to determine optional methods for analyzing and disseminating evaluation data in order to achieve program improvement.

From its yearly evaluations, Maryland (1983) has identified four noteworthy goals for improved programs: equal access, quality education programs, adequate support ser-

vices, and sound program administration. Equally important is Maryland's conclusion about continuing program strengths (areas where programs are most amenable to improvement) and chronic program weaknesses (areas where program improvements are not so readily made). Maryland (1983) program strengths tended to be concentrated in those areas in which schools and programs have internal control, for example, clarification of program goals and objectives; utilization of varied instructional materials and methods; the adequacy of facilities and equipment. Program weaknesses were more apparent in areas where there were greater external influences, for example, placement services, community relations, use of community resources, and advisory committees.

Washington, D.C. (District of Columbia 1983), is a city whose students' probability of dropping out of school is higher than that of graduating. According to the accountability report, at the end of the school year, students' scores on the needs assessment showed a marked decrease in their need for basic occupational information.

According to California's (1983) report, program improvement funds were often used for routine operations rather than for program improvement or special programs. In some cases, the money was used for general expenses of operating or maintaining the educational program in the post-Proposition 13 era. Adjustments in the accountability system are inevitable, as compromises have reduced the program improvement function.

The Vocational Education Study (National Institute of Education 1981), funded by Congress and headed by Dr. Henry David, reported that in addition to finding a great variation in the uses of program improvement funds, there were also great variations among the States and localities in the actual use they made of the federally mandated program review or evaluation results. The study concluded that about half the States surveyed in 1979-80 asked local agencies to state in writing when and how they planned to correct deficiencies revealed by reviews. Some States simply communicated the results and left it to local administrators and teachers to decide what if any action to take. Many of the States offered technical assistance in improving programs. The authors of the study also used funds as indicators of attainments in improving vocational education programs. They reported that the uses of Federal funds authorized primarily to induce change accounted for only 1.3 percent of all expenditures of Federal funds.

Of local education agencies' expenditures, this study found that 74 percent spent nothing on new programs, 70 percent spent less than 5 percent of their budgets on new services, 25 percent spent nothing on program improvement, and 69 percent spent less than 10 percent on program improvement.

The study concluded that relatively few dollars were being spent locally to update curriculum and improve programs. Since the bulk of the education budget goes into instructional and administrative salaries and facilities, this fact is not shocking. Only a small part of the budget is available for program improvement, one of the stated purposes of Public Law 94-482. This conclusion should not be surprising in light of the emphasis placed on effectiveness in providing the quantity of evaluation implicitly called for in the Vocational Education Act of 1963.

ORGANIZING FOR EXCELLENCE

This section introduces three approaches to organizing for excellence: a centralized approach, a partially decentralized approach, and a decentralized approach. Attention is then given to program improvement structures. Organization of vocational excellence councils (VECs) is explored: the value of information networks connected by computers is stressed, and role responsibilities of local administrators within a State improvement system are discussed.

Three Models for Excellence

It is necessary to develop organizations to maintain and improve vocational education. Just as good organizational design will help people move toward the limits of needed quantity and quality with maximum efficiency and effectiveness, poor or no organizational design will hinder such movement.

The three organizational designs presented in this section are intended to place responsibility for evaluation and excellence. The first model can be pictured graphically as a sun radiating outward. It can be thought of verbally as the center-to-perimeter model. In this model, the center has the authority, knowledge, and resources about improvements that simply need to be transmitted toward the perimeter. The job of those outside the center is to accept the knowledge and resources and make the improvements. This model requires a stable, homogeneous environment and a simple message. In this model, the transmission radiates out to the perimeter with little if any impedance (although in reality there may be considerable impedance). Many National commission reports on education assume this model exists. It is pictured in figure 4.

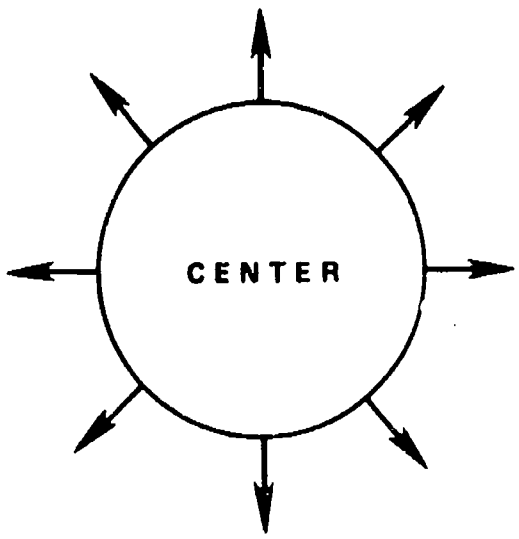


Figure 4. Center-to-perimeter model

A second model may be thought of as a center-node-perimeter model. It does not have as large a center, but it has other smaller centers (nodes) that receive transmissions, amplify them, and send them on toward the perimeter. Other nodes may also be waiting to receive each transmission, possibly boost it, and transmit it farther.

The center-node-perimeter model may be somewhat akin to the federal-state-local, the state-local-school, or local-school-class models. Any of the nodes can boost the transmission clearly, distort the transmission, or shut down the transmission. It is pictured in figure 5.

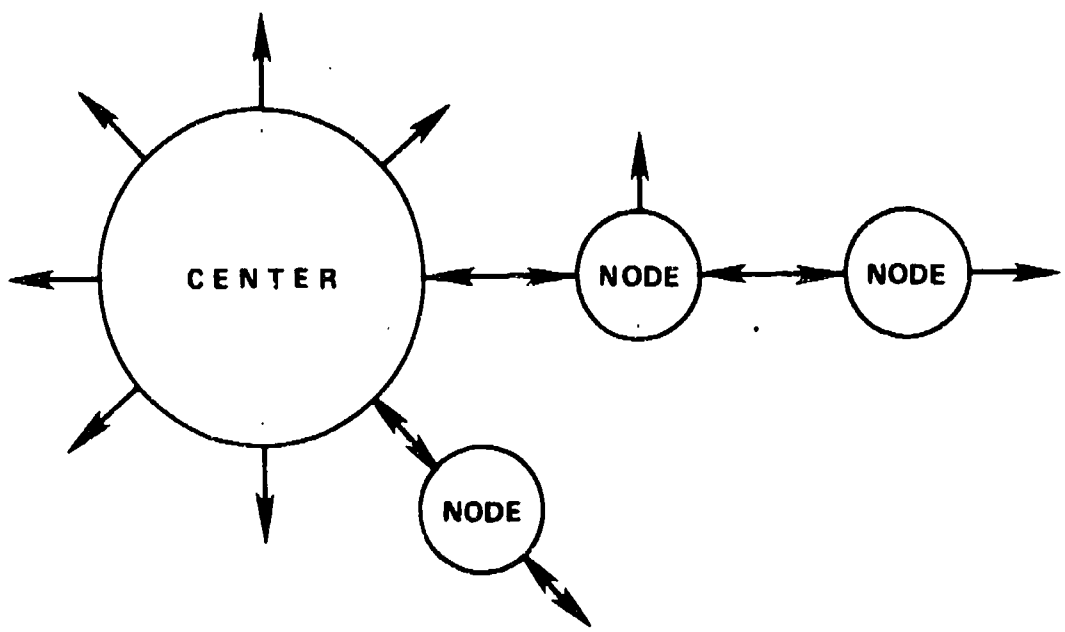


Figure 5. Center-node-perimeter model

The third decentralized model can take a variety of forms. The effectiveness of this model depends upon each sender-receiver-sender coupling basically agreeing on the message. Since individual lines of transmission do not have to fan out so far, and because boosters are available at various levels, this system can function in a less stable environment than the other two models. It can use its energy to transmit and adapt to diverse messages, although each message may have less impact than messages sent through the other models. Carried further, these ideas eventually lead to a network of many dimensions. See figure 6.

In this network, the lines of communication not only cross at every node, but can also bypass every node. In a sense, every node becomes a center and it can choose to communicate with every other center node. In the network, members are not dependent to a significant degree on a center. Their behavior in identifying and making improvements is based on their self-direction and individual needs or wants. They are more concerned with learning how to solve problems in their particular situations and with immediate application. Vocational education needs to set up a learning system that reflects reality and allows its members adequate independence but also provides useful assistance and direction.

Characteristics of Centralization

The proper goal of the center in developing a viable improvement system is not to control but to induce members toward the

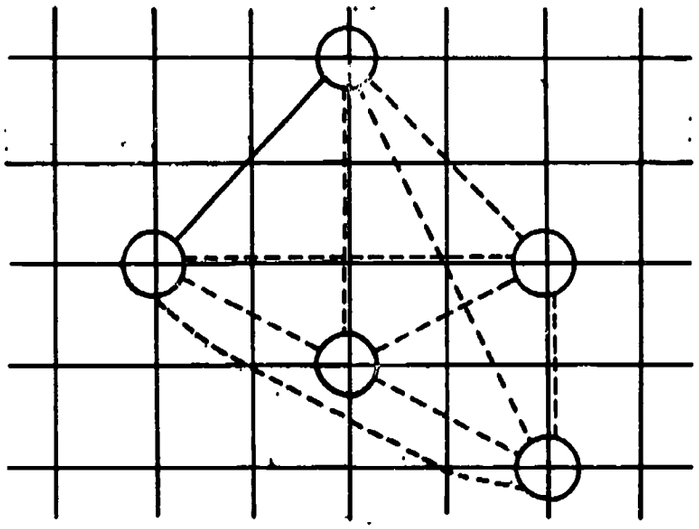


Figure 6. Network model

perimeter to increase their own capabilities for attaining and maintaining excellence. In this sense, the management of individual local improvement situations is emphasized rather than the seeking of conclusions that are generalizable to entire populations but are less than applicable to individual ones. A number of other reforms to the system can be made to increase the likelihood of achieving and maintaining excellence at the local level.

Those who wish to direct program improvement from a center and to have discernible and substantial progress made toward attaining higher degrees of excellence must send simple messages that do not conflict and that carry with them concurrent ways and means to reach the desired ends. These ways and means must include either the authority to carry out the messages or inducements sufficient to carry them out.

Centralized systems are conservative; they work hard at maintaining the status quo. Such systems, therefore, can lead to more consistent activity across situations. They necessarily deal more in ideal terms and in generalities that may or may not apply to those toward the perimeter. Evaluation tends to be limited to determining the degree to which those toward the perimeter conformed with central ideals. Evaluation may focus on unattainable ideals without either acknowledging or realizing it.

The center-node-perimeter model is an extension of the center-to-perimeter model, with each node being a center having nodes of its own. This model approximates the reality of the school system more closely. Units in this system can receive, cut off, boost, and send information as needed. This model is less coherent overall but can be less time consuming because of the multiple paths information and resources can travel. Decisions in this system tend to be more adaptable to each local situation, although all decisions will vary somewhat from the center's decisions.

Characteristics of Decentralization

In the network, each node is a center in its own right. It can contact every other node to access that node's information at their mutual discretion. Decisions made at each node may be more tailor-made for its situations, but coherence may be lost from an overall perspective.

The more a system becomes decentralized, the more it can satisfy the wants or needs of its individual units. On the other hand, having multiple parts in a decentralized system tends to lead to more duplication. When evaluated as an entity, this system appears to incur more overall waste of scarce human and fiscal resources, potentially lower quality in output, and higher costs in time spent by its center in purposeful coordination.

Views differ on the degree to which decentralized systems are significant as a trend. Sizer (1983), author of *Horace's Compromise: The Dilemma of the American High School Today*, concludes that the current trend toward more centralized direction of schools increases staff demoralization and ever lessens the opportunities for principals and teachers to adapt their programs to real and pressing needs. Centralized, standardized practice almost always leads to low standards; decentralized authority provokes commitment from school people on the firing line and increases the chance of wise response to the special needs and opportunities that each student has.

Conversely, Annison (1983), formerly of the Naisbitt Group that produced *Megatrends*, is quoted in the *Florida Vocational Journal* as saying that power is now flowing back to the localities; society has said that if a system is big, we simply do not want it. Individual groups or persons do not like big institutions that do things for them, but institutions that are helping groups or persons do things for themselves are all achieving success.

Program Improvement Infrastructures

This section will synthesize some ideas presented earlier, add new ones, and present prototype local and State improvement infrastructures. Many variations of the prototypes could be presented here. The main premise of this recommended prototype is that one requirement for acceptance of evaluation is to involve in the process those who are affected by a study and appraisal effort and those who will benefit from resulting change.

Outside evaluations of local school systems increasingly appear to be less feasible locally than helping LEAs evaluate themselves. The computer is pushing organizations toward these kinds of decentralized capabilities. No longer can we afford to think of program improvement only as a National or a State system, as has been addressed by most of the National dialogue. Contrary to the prior focus on National and State systems, we must, according to Mills (1982), State director of Florida, subscribe to a comprehensive approach to improving vocational programs at every level. All levels need to interact as easily as possible in program improvement.

The Pennsylvania Department of Education's (Thornburg 1983) "agenda for excellence" states that given the diversity of the State and the statutory responsibilities of local school districts, no one model program or series of actions should or could be imposed by State government on each school. Rather, the State should call on local officials in each district to evaluate the needs of their students and the resources available and develop a strategy to ensure that a range of educational opportunities is available in each school.

Furthermore, we should cease looking upon program improvement in terms of disjointed pieces. For example, part of the recent past trend had been to identify and develop improvement products without thoroughly examining how they are used. Mills (1982) further describes a noteworthy process that exhibits some worthy ideals when he stated that product development is not and should not be an end in itself. The product must be based on a real need, be an

appropriate solution to that need, have a clearly defined target population and a well-developed plan for dissemination, be assigned the necessary resources to ensure that the user receives the required inservice training, and ensure that the total process from need identification through product utilization be evaluated.

Organizing Locally for Program Improvement

Increasingly, it will become important to help teachers keep up-to-date with new developments and to help them work together locally to improve programs. The reasons are simple. The multiple-option information age places a burden on the individual's ability to identify, collect, process, analyze, and use information, including evaluative information. This information overload will be felt not only by the local director but by the teacher. Annison (1983) succinctly summarizes the situation to the effect that in educational terms, these multiple options mean there is no way in the world, with the rate of growing information, that teachers can keep up with what is going on.

To handle not only changing information about content in programs but also the multiple evaluative information described earlier in this publication, organizations akin to quality circles or task forces need to be formed locally. These groups should be formed within the traditional program areas, possibly by school and overall for the entire LEA. The functions of these peer groupings would be (1) program improvement, (2) public information, and (3) politics.

Vocational excellence councils (VECs). Organizations of teachers for achieving excellence can be called program improvement teams, quality circles, task forces, and so forth. In this publication, they are called *vocational excellence councils*. This section will describe an overall framework for a VEC. (For more ideas, read *Quality Circles: Applications in Vocational Education* by Lloyd and Rehg [1983]. Both Lloyd and Rehg are professors at the Air Force Institute of Technology, School of Systems and Logistics at Wright-Patterson Air Force Base, Ohio.)

From each program area VEC, for example, one or more representatives would form the systemwide VEC. This design utilizes parts of the center-to-perimeter model, the center-node-perimeter model, and the network model, each for reasons identified earlier.

Each VEC generally would be responsible for identifying ideals and comparing those ideals with present and potential situations affecting excellence. They would use traditional evaluation methods described earlier, use others available, and help develop new ones as needed. Program area VECs could be organized into subgroups. These subgroups would be selected to provide a reasonable representation for individual programs, for program clusters, or for schools in large program areas within especially large LEAs. Another organization of subgroups might cross LEA lines for small program areas in small LEAs. Program area VECs crossing LEA lines would, however, have more than one LEA center and more than one message coming from these centers, thereby causing potential confusion for the VECs' members. This arrangement also could yield conflicting evaluations of that VEC's effectiveness by each participating LEA.

Program-based data. Additionally, we must remember that each local education agency or postsecondary institution, at this time, has been through such a process and has collected improvement data through federally required program reviews and the Office of Civil Rights (OCR) reviews. Many, if not nearly all, have developed program improvement plans from their program reviews, and some have developed compliance plans from the OCR reviews. Additionally, a number of other local sets of data have been collected, including completer and employer follow-up data. Ideally, components of improvement plans have been developed incorporating each set.

These sets of data include enrollment patterns that yield information on demand for vocational courses. The follow-up data from completers of vocational programs and from employers of these completers yield supply-side information about vocational programs. These supply-side data not only provide information about the outcomes of the products, but can also yield information about the processes and content these programs use. The total information collected nationwide through the program review evaluations mandated for each LEA and community colleges' vocational programs probably adds up to the most comprehensive local set of process evaluation data in the history of education, with resulting improvement plans. The local utilization of these data varies considerably as described earlier.

Review and release of information. The function of each program area VEC would be to review the existing improvement plans and the data to determine which steps toward excellence already have been taken, which have not, and why. (The State or local administration would need to furnish these data, ideally in the most useful and usable manner possible.) Such a form would have to be worked out with LEAs and postsecondary institutions. Each program area VEC then plans further steps toward excellence and strategies for implementation and identifies needed resources.

Parallel to these plans, each program area VEC develops public information materials and strategies to share the information. These materials need to be developed using data the VEC already analyzed. The first choice of information would be that which ratifies what they are doing well and what they need to maintain. For example, from the follow-up data, each VEC could develop a simple comparison chart with the statewide youth unemployment rate, its countywide youth unemployment rate, and its countywide vocational completer unemployment rate for its program area, or for vocational education locally overall. It could highlight above-average employer ratings from the employer follow-up (for example, over 70 percent statewide in North Carolina on each of the 5 federally mandated areas: technical knowledge, relative training, overall training, attitudes, and comparable performance). It could highlight strengths identified through program reviews, weaknesses (especially chronic ones), steps being taken for improvements, and additional resources needed to rectify at least the chronic weaknesses.

As part of its improvement plan, it would identify the steps to be taken on the next round of program evaluations mandated by its State legislation or the Perkins Act. It would seek to take all steps necessary to increase excellence through whatever local political process was available to it within and outside the school organization.

This possibility would be increased because those who conduct vocational programs firsthand would be involved in evaluating and planning to achieve excellence, compare notes with each other individually, form support groups to work toward excellence in the areas in which their vested interests lie, and receive recognition for doing so. Participation in a VEC and resulting improvements made by each participating teacher and by the group as a whole should ideally be built into a local comprehensive system as rungs of the career ladder model recommended by a number of the National studies, yet attempted by few.

In summary, each of these groupings would be involved in organizing program reviews, analyzing results, developing an improvement plan, and implementing that plan. Each would also be responsible for analyzing student and employer follow-up and other labor market information for implications of maintaining and attaining excellence. The analysis of this information would form the basis for the local area improvement plan and feed into the LEA vocational improvement plan. Program improvement dollars allotted locally from Part B of Title II of the Perkins Act could be tied directly to the

development, acceptance, and accomplishment of these continuing improvement plans. On a purely informal basis, each of these groups could provide the genesis of developing local chapters of their respective professional organizations.

To review the design of the center in each institution or LEA, each program area would furnish a representative(s) to serve on the local school system's overall vocational excellence council. The overall vocational excellence council's function would be to advise and assist the occupational dean, vocational director, or other relevant administrator in managing the system, including synthesizing each area's program improvement plan into one institution or districtwide plan. Parallel arrangements could be made at the school level with each principal.

Computer-based Information Networks

Teachers, administrators, and policymakers have increasing access to data through most schools' routine tabulation of such statistics as average daily attendance, percentage of program completers' placement, and numbers of special needs students enrolled in programs. Easy access to indicators of performance for vocational education should facilitate the evaluation process. Computers linked to State departments of education can bring listings of new publications for vocational program areas (such as distributive education) to teachers with one flick of a switch. These linkages can increase the probability of teachers' being up-to-date with the latest developments in their field. It is the job of State-level leadership to make sure such data is useful, in a useable form, and readily accessible.

This new hardware—and software—promises to revolutionize data processing. New technologies are being coordinated into effective systems within each local education agency. These systems include data processing systems, office systems, telephone systems, and television systems. This collective instrument is called integrated information creation, processing, and distribution through data, images, and voice (II/CPD/DIV).

Television systems will become interactive with increasing access to tailored databases, including those available through cable and satellite. The ADVOCNET system coordinated by the National Center for Research in Vocational Education is one major step in this direction. Telephone systems functions will increase to include improved data and text handling, enhanced services, and data processing and voice databases. Personal computers will make access to such databases easier. Office systems will contain word processing, electronic mail, electronic filing, combined copier, communication device, and printers—and each will be more accessible and usable. In essence, as the cost goes down and power goes up, technology will increasingly provide equity among jurisdictions in access to program improvement data. As equity of access increases, program improvement capabilities locally will increase, and the network model described earlier will rise in dominance.

Local Administrators' Roles and Responsibilities

The local administrators' roles concerning VECs would be to provide leadership primarily through coordination and facilitation. The local vocational director would form a systemwide VEC with representatives from each program area, as would the occupational component for each postsecondary institution. Each program area representative would be chosen by that program area's VEC to be its facilitator. The systemwide VEC would, in turn, combine the various program improvement plans into a unitwide plan and fund each plan to the maximum extent possible. Maximum coordination and facilitation skills would be needed by the local administrator and VECs' facilitators. These funds

would include those available for personnel development, research, curriculum, exemplary programs, equipment, etc., as spelled out in Part B of Title II of the Perkins Act. There, unfortunately, may lie the rub. The system will not work without the commitment of resources sufficient to improve programs in addition to those needed to maintain them.

The local administrator would help organize the groups; find funds for them; sponsor inservice activities in problem-solving skills, evaluation, facilitation, brainstorming, cause and effect analysis, data collection methods, and so forth; and allow each VEC to select problems to address, to analyze these problems, to develop solutions, and to implement them; and listen to and support them. (See Lloyd and Rehg [1983], pp. 10-11.) These responsibilities call for a staff member's full-time efforts. In all these respects, the local administrator is the key to making the VEC system work.

To accomplish all these tasks, the local vocational administrator would need to emphasize more working *with* people in VECs than *through* them. The local administrator ideally would need to organize each VEC and subgroup, make sure relevant data are available in the form needed, make sure schedules are arranged to allow cooperative work, help provide a nonthreatening environment, seek funds to promote implementation of the vocational improvement plans, and gain the technology to support these efforts.

Additionally, local administrators would need to understand the local political process. They must try to understand bureaucratic rationality, the function of information in their local situation, the risks such information can bring, and how to work with the VEC to develop ways to counteract behavior not conducive to attaining further excellence because of cherished local assumption and well-established local procedures.

The State Improvement System

The State must encourage the local improvement system and support it with resources. It needs to provide technical assistance in training people to use the system and to work with and through the local VECs to organize, analyze information, develop strategies, and implement programs. It needs to organize its next 5-year program review cycle around all of its databases and to format these data to make them useful to and usable for each vocational excellence council. The State should sponsor statewide or regional program improvement projects to address problems identified from the bottom up. The State also would have to provide maximal funding for local vocational improvement plans upon their acceptance from Part B, Title II of the Perkins Act.

The State would need to develop ways to synthesize these local vocational improvement plans and, to the degree possible, base State actions on these plans. It would need to set up model local systems to demonstrate their workings to others. The State would need to train its staff in the system. It would need to develop the technology needed for the collection of local data and to develop the public information function as well as local political strategies. It would need, in other words, to develop a statewide vocational improvement plan constructed comprehensively from the bottom up instead of disjointedly from the top down, as the present system could be characterized. Worthington (1983) summarizes modernization and the challenges it provides as occurring on a hit-or-miss basis. The question is whether vocational education as a coherent organization, rather than a collection of isolated institutions—can make the needed adjustments.

A STRATEGIC VISION FOR LOCAL, STATE, AND FEDERAL EVALUATIONS

Increasingly, there have been realizations at local, State, and Federal levels about the complexity of the environment in which evaluations are made or not made, resources are allocated, and varying degrees of excellence are attained or maintained based on these evaluations. This section provides background from within and outside vocational education on perceived necessities for interactively attaining and maintaining excellence through evaluations at all three levels: local, State, and National. Some of these perspectives are highly generalized and idealistic; others are more pragmatic. The more general ones will be reviewed first. Although most, if not all, of these are intents of ideal proportions, they are needed. They do begin to accomplish the ideal that Michael Annison (1983) challenged Florida vocational educators to achieve: that they have to start now to build a strategic base for what vocational education is going to look like over the next 15 to 20 years. A strategic vision is the fundamental concept that drives their day-to-day activities. Until they achieve that clear vision, they will not be ready for the future.

Visions of an Interactive Environment

The American Vocational Association's (AVA) Assembly of Delegates passed resolution 3 on 6 December 1983 as part of its continuing National look at excellence in vocational education. One ideal of this organization pertains to quantity and quality, and states simply that high-quality vocational education should be available to all secondary students, including those with special needs, women, and minorities. Note the "should be" and "all."

A year before this declaration, the same organization held hearings ("Vocational Education in the Comprehensive High School" 1982) on quality in comprehensive high schools, from which four "prerequisites for remedial actions and improvements" were identified. These prerequisites apply to any level of vocational education:

- The presence of a widely shared concern with the quality of the secondary vocational education enterprise and a desire to attain excellence
- A structure of policies pursued at all three levels of government—local, State, and Federal—supportive of program and school improvement
- The cultivation of willingness to apply what has been learned from research about such matters as—
  - —the factors that make effective schools and learning situations and
  - —learning in relation to class size, hands-on experience, and time on task
- A state of mind that does not see change as a threat

The overall conclusion of the AVA report is that the field may be evaluation rich and implementation poor. Despite that, AVA proceeds to note that there is little mystery about what needs to be done and what, in fact, can be done. The problems lie in mustering resources, energy, and will for the

doing. On this score, the point is made that a powerful stimulus for redirection of vocational education in the high school, not yet adequately used, lies in making periodic assessments of every aspect of the enterprise that bears upon performance, ranging from local and State planning through availability of resources and their use, to the competencies acquired by students, to classroom procedures and methods of instruction.

The National Association of State Directors of Vocational Education also went on record in December 1983 as identifying goals for interactive program improvement:

- Comprehensive planning in program improvement
- Coordination of program improvement processes within and among levels
- Implementation of program improvement outcomes
- Evaluation of program improvement activities
- Involvement and active participation of those affected
- Cooperation with other groups concerned with education and work

This organization further recommended impaneling a National vocational-technical education program improvement coordinating council for recommending "coordinative strategies" to resolve problems among the respective organizations and agencies involved in program improvement. Correspondingly, it recommended that each State director lead the States to—

- assess State program improvement needs,
- recommend statewide program improvement priorities,
- coordinate State program improvement activities, and
- articulate with other programs through the National council.

The council's functions would be to take a leadership role in developing a systematic process to identify (from the States) National priorities for program improvement; determine what States are doing in these priority areas; and, via electronic means, demonstrate how States are addressing current and future priority areas.

These National positions are not new. They have evolved during the last few years. A series of actions preceded them. The following are examples. Again, these are not to be inclusive or representative of all such actions.

Some Preliminary Actions

In 1980, the report from a 1979 federally sponsored seminar on research coordinating units in vocational education addressed the theme of breaking with the less-than-comprehensive focus:

- Program improvement ought to be viewed as a comprehensive research, development, and diffusion process rather than as a collection of functions.
- The continual development and training of the personnel involved in vocational education should be an integral part of program improvement. (Miller 1980)

Two years later, during the 1981 American Vocational Association (AVA) national convention in New Orleans and at the behest of the American Vocational Education Personnel Development Association (AVEPDA), the heads of each of the following organizations met to discuss their respective needs

for comprehensive program improvement: National Research Coordinating Unit Association, National Association of State Directors of Vocational Education, American Vocational Education Research Association (AVERA), Vocational Instructional Materials Association, New and Related Services Division of AVA, National Council of Vocational Teacher Educators, and National Network for Curriculum Coordination in Vocational-Technical Education (NNCCVTE).

Following this meeting, at the same convention, AVEPDA and AVERA sponsored a joint session entitled "Fitting the Pieces of Program Improvement Together." Following are selected key points, excerpted from a tape of this joint session, about building a collaborative National environment conducive at all levels and across related functions for achieving and maintaining excellence from a variety of perspectives.

Dr. Rebecca Douglass (National Network for Curriculum Coordination in Vocational-Technical Education) said:

> At the Federal level, State curriculum needs assessments should be synthesized to develop National priorities and screen priorities so that they not be duplicated at the State and National levels. A panel of leadership from each of the professional groups should be sequestered to do this each year. Curriculum activities at the Federal level would be targeted to major design, formatting, delivery, management, and evaluation concerns. The development would be left to the States with coordination through NNCCVTE and the National Center for Research in Vocational Education.

According to Dr. Robert E. Taylor (National Center for Research in Vocational Education):

> We have not had, nationally, general agreement on priorities. There has been a pattern of change every few years; there has not been the durability of attention to each problem to go the full range of the processes that could be applied to the problems; we need to do a better job nationally of tying resources to goals. We need to improve the quality and quantity of interactions. We need to pursue additional dialogues based on our loose couplings and reciprocal benefits.

Dr. Jerome Moss (Department of Vocational Education, University of Minnesota) stated:

> We need to differentiate between reform-oriented program improvement and renewal program improvement. Reform-oriented inquiry is best done by those not just in the vocational system, but managed by those concerned with all employment-related training. The renewal inquiry is best managed by operators within the vocational education system. Those closer to the bureaucracy are better for fine-tuning the system. The Federal Government should maintain a mixed portfolio with most of its focus on renewal, some on reform.

Dr. Henry David's (*The Vocational Education Study*) comment was:

> The universal threat is the struggle between the parts and the whole. We shouldn't worry so much about networks and interfaces as cultivating the capacity for improvements. This requires settling for more than what we have had, not less. The Federal funding mechanisms are not compatible with (Federal) goals. The business of improvement begins with individuals . . . and we have no reward system for what we call "self-learning." The nice thing about models is that there is always more than one. And the reduction to a singular model would not be desirable, because it would have to be based on the lowest common denominator.

After a number of dialogues, Joe D. Mills (1982), State director of vocational education in Florida and then president concurrently both of the AVA and the National Association of State Directors of Vocational Education, formally articulated the evolution of ideas about interactive program improvement across the National environment. Mills stated that program improvement implies change, and educators should not and cannot expect to improve vocational programs without considering possible changes in any and all facets of the total educational delivery system. It is of little value to produce improved instructional materials if their ultimate use in the classroom is dependent on a dissemination system that cannot deliver the product. It is not reasonable to expect utilization of the product if its use is dependent upon an inservice training program delivery by untrained trainers.

Mills' (1982) conclusion on the holistic approach needed through the entire National environment reflected the views of many others, emphasizing the need to subscribe to a comprehensive approach to improving vocational programs at every level. Program improvement should be looked at in terms of a total activity or process—not just in terms of its component parts such as those spelled out in past legislation.

Focus on Implementation

It is crucial to spend at least as much money, time, and energy in examining, researching, evaluating, or developing methods, and so on, to determine how to attain improvements as is spent on evaluations to determine which improvements are needed. It is not uncommon to hear persons experienced in local vocational education administration or teaching conclude that their programs would be vastly improved if they knew how to make or could make the improvements they already know are needed. As the farmer said, "I already know how to farm better than I actually do."

As much time should be spent in research or curriculum development to determine how findings can be used and then to put them into effect. And at least as much time should be spent on implementing the critical activities and steps necessary to put the findings into effect as was put into developing them. In other words, quality must be emphasized in program improvement activities over quantity. This ideal emphasis is not an easy one in an environment supported by minimum tax bases. The assumptions and goals that underlie the center-to-perimeter model as it applies to the Perkins Act should be debated nationally and tested, if possible, to determine if and when they are feasible.

The ideal of research—generalization of findings—is not the main ideal for a comprehensive program improvement system. Program improvement is dependent on each situation. The philosophical visions that should drive program improvement are pragmatism and existentialism. What must be designed are systems to maximize the capabilities, including incentives, for situational or site-specific program evaluation and improvements at local and State levels.

Pennsylvania's conclusions about situationally specific improvements reflect similar concerns. A report entitled *Turning the Tide: An Agenda for Excellence in Pennsylvania Public School* (Thornburg 1983) concluded that the schools can adapt a variety of additional strategies to increase the quality of education provided to their students. Also, as noted in *High School: A Report on Secondary Education in America* (Boyer 1983), published by the Carnegie Foundation for the Advancement of Teaching, strategies to improve public education will differ from one school to another.

Upon close examination, one finds that a number of Federal perspectives have evolved in support of the aforementioned interactive system. The discrepancy between perspectives and action may largely be due to political realities. In the name of flexibility, for

example, managers of vocational State and local bureaucracies have been allowed to decide whether funding from P.L. 94-482 for excellence meant funding more program improvement activities or funding more personnel. Bureaucratic rationality answered the question for them with the obvious choice of more personnel. Bureaucracies are evaluated more on quantity than quality. Furthermore, in trying to be of maximum benefit to at-risk groups and to the labor market, the Federal Government, although well-intentioned, sent very complicated and somewhat conflicting messages regarding the operationalization of P.L. 94-482 through a center-to-perimeter model demanding simple messages.

To ensure that more action is addressed to improving programs, either some flexibility must be sacrificed to gain correspondence between Federal purposes and funds, or the subsequent Federal evaluations will have to address the ideals rather than actually intended accomplishments. Furthermore, ensuring that evaluations of effectiveness take place should take into account the impact of counteracting goals on attainments and resulting evaluations. In essence, actions must be evaluated in relation to *realistic* contexts, processes, products, and outcomes.

Local, State, and Federal evaluations ideally must base assumptions and expectations more on comparisons with the possible than on political rhetoric. Only by considering the art of the possible will the accuracy of evaluation results be increased and the system helped to produce the results that are substantially closer to excellence.

Only when the art of the possible is included consistently in the evaluation of vocational education will the probability of excellence increase. As the National Academy of Sciences study headed by Blaydon (Sherman 1983) stated, "we would like to see vocational education become an equal partner with college preparatory education in the education system as a whole. *The most effective vocational programs are deserving of that respect now*, and we would like to see all programs raised to that level of quality and esteem" (p. 93).

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