DOCUMENT RESUME

ED 154 158 08 CE 015 717

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TITLE Help Wanted: Articulating Occupational Education at the Post-Secondary Level.
INSTITUTION Ohio State Univ., Columbus. Center for Vocational Education.
SPONS AGENCY National Inst. of Education (DHEW), Washington, D.C. Education and Work Group.
PUB DATE 77
CONTRACT 400-77-0014
NOTE 58p.; Papers presented at the Third National Forum on Education and Work, National Institute of Education (San Francisco, California, February 1977)

EDRS PRICE MF-$0.83 HC-$3.50 Plus Postage.
DESCRIPTORS *Articulation (Program); Career Education; College School Cooperation; *Interinstitutional Cooperation; *Post Secondary Education; Program Administration; Program Coordination; Program Descriptions; *Program Development; Regional Cooperation; Secondary Education; Statewide Planning; *Vocational Education

ABSTRACT

This collection of presentations is meant to dramatize ongoing efforts at the state and local level where articulation between occupational and vocational education is being achieved. The presentations included are the following: (1) "Articulating Vocational Education at the Postsecondary Level"; (2) "Local Articulation Effort: The Tri-County Technical College"; (3) "Interinstitutional Cooperation in Lehigh County"; (4) "The Need for Articulation: The Wisconsin System"; and (5) "The Need for Articulation: The California System." The second and third presentations discuss the implementation of new institutional cooperative arrangements in the community; the last two presentations view the need for articulation from a state level perspective. A question and answer section is included. (TA)

HELP WANTED: ARTICULATING OCCUPATIONAL EDUCATION AT THE POST-SECONDARY LEVEL

Papers presented at the Third National Forum on Education & Work

Edited by

David S. Bushnell

American Association of Community and Junior Colleges

Washington, D.C.

The Center for Vocational Education
The Ohio State University
Columbus, Ohio

1977

THE CENTER MISSION STATEMENT

The Center for Vocational Education's mission is to increase the ability of diverse agencies, institutions, and organizations to solve educational problems relating to individual career planning, preparation, and progression. The Center fulfills its mission by:

- Generating knowledge through research
- Developing educational programs and products
- Evaluating individual program needs and outcomes
- Installing educational programs and products
- Operating information systems and services
- Conducting leadership development and training programs

This publication was prepared pursuant to a contract (No. 400-77-0014) with the National Institute of Education, U.S. Department of Health, Education and Welfare.

PREFACE

The Third National Forum on Education and Work, sponsored by the National Institute of Education, was held in San Francisco in February 1977. The Forum theme "Education and Work: Directions for the '80s" helped focus discussion on the critical area of future planning. The involvement of speakers and participants from a variety of fields offered an interdisciplinary perspective on the issues integral to an indepth exploration of the relationship between education and work.

We are hopeful that this exchange will lend insight to and impact upon future developments at federal, state, and local levels. We also are confident that the academicians, business and labor persons, and school practitioners found the opportunity for acquaintance and discussion mutually beneficial.

The Center is indebted to the National Institute of Education for its support and advice in Forum planning. We also appreciate the time and efforts of those presenters who shared their insight and experience with us all.

The Ohio State University and The Center are proud to share these papers with you.

Robert E. Taylor
Executive Director
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INTRODUCTION

Lowell Burkett Edmund J. Gleazer, Jr.

To some educators, the connection between vocational education and the purposes of liberal education has seemed tenuous at best. However, the classic nature of the debate between Dewey's heirs, who stress the instrumental nature of education for participation in society, and those who believe in liberal learning as an end in itself, with no eye to education's utilitarian value, has shifted. The issue now is how both vocational and liberal education can cooperate to the benefit of both student and society over the long and short haul.

Lifelong learning and continuing adult education are two movements that have forced a reappraisal of the interdependency of business, industry and educational institutions. The problem is how to make institutions more responsive to student needs at various stages of the living, working, learning cycle. Questions are being raised as to whether entry level job training should concentrate on qualifying a trainee for a job or for career advancement as well. Educational institutions and commercial organizations need to commit themselves to articulation before such questions can be answered. This means that articulation mechanisms will be under great stress, since a union of the world of education for work and the academic world will require many new cooperative alignments. It will also require systematic infusion of career information at every stage of working and learning.

Of special interest here are the methods occupational and vocational education have devised to accommodate and join the program needs of their clienteles. Even though the

U.S. Congress and state legislatures favor articulation efforts, federal and state regulations have in the past tended to create separate governance structures for the occupational and vocational areas. In some instances, this has brought about unnecessary program duplication and jurisdictional disputes.

In spite of this, institutions have sought ways to articulate programs with other institutions in their geographic area. This has resulted in a more efficient and effective use of vocational-education community resources and a greater breadth of program offerings. Undoubtedly, increased public pressure for accountability coupled with limited appropriations for education in general will speed these efforts. When budgets are tight, articulation may well be the best means to significantly cut costs without reducing program quality.

Because the potential benefits of successful articulation are considerable, the AACJC and the AVA have joined forces in a study, funded by the U.S. Office of Education, that will: (1) identify policies and procedures that help or hinder cooperation; (2) develop recommendations for federal, state, and local jurisdictions to consider that will promote cooperative working relationships; (3) disseminate the findings as widely as possible; and (4) establish a mechanism to foster continued cooperation between AACJC and AVA. To this end, a National Advisory Council has been appointed to advise on methods and strategies to use when conducting the study as well as to critique the final report. The call for institutional coordination by Willard Wirtz and others argues for establishment of locally based efforts between employers, labor unions, schools, and other institutions concerned with training. It is anticipated that this nationwide survey by AACJC and AVA will yield data that will bring about necessary articulation efforts to promote closer working relationships among community colleges, technical institutes, and post-secondary area vocational schools.

This collection of presentations is meant to dramatize ongoing efforts at the state and local level where articulation between occupational and vocational education is being achieved. Don Garrison, President of Tri-County Technical College in South Carolina and George Elison, Dean of Lehigh County Community College in Pennsylvania are actively implementing new institutional cooperative arrangements in their respective communities. Eugene Lehrmann, State Director of Vocational Technical and Adult Education in Wisconsin and David Mertes, President of the College of San Mateo in California, view the need for articulation from a state level perspective. It is our hope that these statements will serve to dramatize the issues and potential benefits to be derived through articulation.

Articulating Vocational Education at the Postsecondary Level

David S. Bushnell

Since the Golden Age of Greece, educators have struggled to unite the liberating and utilitarian functions of education. Should education impart ideas and values or should it help us to acquire food, shelter, and clothing? Should it liberate the mind or sustain the body? Should it explain the world or help students to cope with the world? Should it encourage self-discipline or promote the acceptance of external authority? Should it focus on career aspirations or expand such aspirations to encompass multiple careers? Most of us have learned to live with the notion that education should do both; we should liberate the mind and fortify the spirit in addition to emphasizing the practical and the useful.

Past practices encouraged students first to complete their liberal education, then to take on vocational preparation. Unfortunately, some dropped out before completing their vocational training; others, lacking an understanding of the value of liberal education, dropped out before their vocational education began. Still others began to explore career choices too late. And many failed to develop the values, attitudes, and habits of the successful worker.

The result has been that in this country

1. Fifty percent of our high school graduates aspire to 20 percent of the available jobs at the professional and technical level.
2. Twenty percent of the total population can't function adequately in their roles as workers, citizens, and consumers (according to a recent University of Texas survey).

3. As more and more students enroll in postsecondary occupational education programs, employers impose increasingly higher educational attainment requirements for jobs (many of which in the past required little more than a high school diploma).
4. The gap between an employee's expectations and the demands of the job continues to grow wider, particularly as a better educated class of workers search for meaningful jobs.

While vocational educators and those concerned with counseling youth for work have been striving to match aspirations with reality, the immediate future with regard to enrollments at the postsecondary level in vocationally oriented training programs over the next eight years is at best clouded. As the number of high school aged students decline (and we know they will over the next few years), vocational schools, community colleges, even four year colleges are looking to the part-time, older student to fill the gap. Regions and states vary considerably in the availability of current programs of vocational training. How to meet current and future demands without over-building or neglecting to provide needed services is one of the concerns with which local planners must cope. More on that concern in a few moments.

If we were to base future projections on the experience of the past, the future would look promising indeed. The interest in and demand for vocational education at all levels of education over the last three decades has been strong. Enrollments in vocational education since 1947 have grown sixfold, from 2.5 million to 15.3 million. An even more dramatic figure has been the increasing number of high school graduates who elect to pursue vocational education beyond the secondary level with almost 50 percent of the graduating students electing to go on to some type of postsecondary educational program. The Bureau of Occupational and Adult Education

at the U.S. Office of Education reports that since 1963 post-secondary vocational enrollments have increased from 144,000 to almost two million in 1975. Similarly, community colleges have grown from an enrollment of about 814,000 in 1963 to close to four million students at the present time. Such statistics provide supporting evidence for the realization that high school graduates have come to accept the argument that more training and more education means better jobs and higher pay.

To meet this expanded demand, there has been a parallel growth in the number of institutions offering postsecondary vocational/occupational education programs. In 1965, for example, there were only 670 vocational schools providing some type of postsecondary training. By 1975, 1,100 institutions did so. Public community colleges have shown an even more dramatic growth rate numbering only 565 in 1965 to over a 1,000 in 1975. This rate of expansion ignores the fact that, in addition, there are well over 8,000 private, proprietary and non-profit training schools which offer a range of short and longer term job training. The question might well be raised as to why postsecondary vocational education has proliferated at the rate it has since World War II?

Most occupational training at the postsecondary level was carried out by private trade and technical schools, hospitals, and technical institutes prior to World War II. Only a handful of public institutions provided such instruction at the postsecondary level. The fact that public offerings have grown so rapidly since that can be attributed to the high cost of vocational education, the growing reliance of private industry upon the public sector for pre-employment training, and, to a limited extent, the poorer reputation enjoyed by a few proprietary schools who sought to capitalize upon the influx of ex-GI's (and the benefits they represented) following the end of the war. These forces conspired to shift onto the public educational sector responsibility for vocational training in

this country. The passage of several important pieces of federal legislation authorizing the investment of millions of dollars in facilities and in operating expenses reflected the desire of both industry and the public to provide more support.

The total expenditure, including federal, state, and local funds, over the last decade (1965-1975) was approximately $18.3 billion. Twenty-eight percent of that allocation was spent on postsecondary vocational education alone. But such an aggregate figure masks the differences between states. Comparing Maryland and Minnesota for example, each with approximately one-half million people in the 18 to 24 year old age bracket in 1975, Maryland invested only 15 percent of its overall expenditure in support of postsecondary vocational education while Minnesota earmarked 60 percent of its allocation. Why such dramatic differences occur are often a function of state governance structures and do not necessarily reflect the actual demand for services.

Since 1963 and the passage of the Vocational Education Act of that year, subsequent legislative amendments and new legislation have greatly expanded the commitment of federal dollars in support of vocational education. The Vocational Education Amendments of 1968, the Higher Education Act of 1972 and the Educational Amendments of 1976 introduced new responsibilities and priorities, yet each purported to recognize the importance of local coordination and planning. And each, in its own way, contributed to the hodge-podge of training opportunities now in place throughout the nation.

I stated earlier that while the demand for vocational education seemed to be moving more into the postsecondary level, and that this shift in demand reflected to a large extent industry requirements (or is it the other way around?), the projected enrollments over the next eight years and the expected demand for vocational education will vary widely from state to state and region to region. Across the board pronouncements are risky at

best. California, for example, long a leader among states in its support for adult education, is experiencing a rash of jurisdictional disputes as local institutions vie for enrollments. Dave Mertes, one of the authors, will elaborate on that issue in his paper. Wisconsin, with fewer educational institutions and a more coordinated approach, has so far avoided those conflicts. How they achieved that enviable status will be described shortly by Eugene Lehrmann, one of the principle architects of the Wisconsin program. Recent studies in Pennsylvania and New Jersey suggest that if duplication of educational offerings exists, it is more likely to be found at the four year and graduate levels. Over and under supply questions should be dealt with as a state or regional question and not in the aggregate.

With increasing competition for the educational tax dollar and the fear of shrinking enrollments, many postsecondary institutions have been forced to seek out ways of cooperating and articulating their programs with other institutions in their area. Where such cooperative arrangements have been successful, the multiple vocational education resources of the community are apt to be better utilized and a greater range of occupational training programs made available. Don Garrison and George Elison will describe how their communities have successfully dealt with the issue of articulation.

It is this matter of articulation which I would like to discuss. This term is a frequently misused and often abused one. Roughly translated it means "the act of interrelating or fitting into a systematic whole." Put in vocational education terms, articulation is concerned with fitting vocational education into the larger community. Depending upon which area of articulation one wishes to address, it can take several forms—between secondary and postsecondary institutions; between area vocational schools, technical institutes, and community colleges; between education and work and work and education; between two and four year colleges; between local, state and federal

programs; and even within institutions. How well do division chairmen and faculty, not to mention deans, communicate with each other at your institution? This is a critical question in light of the desperate need for interrelating liberal and vocational education. This means that the pressures for articulation are being felt not only at the local level but also at state and federal levels. Both Congress and many state legislators have indicated that they favor articulation. With the passage of the 1976 legislation, we are in a unique position to offer leadership in this area. Well articulated programs are not easily achieved. They are the product of a large number of people working long hours to bring about coordination with little reward or recognition. It is these dedicated few who are the proper focus of the study that I am about to describe.

Carefully conceived and effective coordination requires people who can not only share information and understand each others' programs but demands a degree of openness and a willingness to cope with the institutional inertia that are the trappings of every bureaucracy. In setting the stage for the papers that follow, let me try to identify some of the barriers which have been overcome by effective leadership and action planning. Each of these problems can be clustered under one of several headings:

a. Policy barriers
b. Resource barriers
c. Political barriers
d. Legal barriers
e. Value orientations

Policy barriers take many insidious and subtle forms. Many postsecondary institutions do not grant credit for already acquired knowledge and skills. Students enrolling in a particular program sometimes find it necessary to duplicate courses they have had in high school in order to meet a college's requirements for an Associate of Arts degree. Other students attending area vocational schools sometimes discover belatedly that their credits are not

transferable or will not be accepted by a two year postsecondary institution in the same community. Those wishing to go on to a four year college may discover that they need a number of academic credits which were not included in the occupational track.

Resource barriers range from the obvious—inadequate funding—to the not-so-obvious—limited availability of the right type of work-study opportunities. Adequate staff, labs and classrooms, parking and study space represent a few of the resources (or absence thereof) that can spell the difference between a student's success or failure. Sharing facilities and other resources can provide a ready-made solution to many of these concerns.

Entrenched leaders with well developed political ties are often reluctant to share that power base with competitors. Uninformed state legislators may feel they are doing their constituents a favor when they vote in behalf of a vocational education facility designed to serve a limited region or restrict enrollments at community colleges to those who are of traditional college age. CETA prime sponsors may view established public education programs as working at cross purposes to their federally mandated mission. Advisory council members often develop a sense of loyalty to the institutions they serve, thus opposing collaboration efforts as evidence of a weakened power base. When it boils down to competition for the same student, it's hard to stay neutral. These and a host of other political concerns can be sighted as potential stumbling blocks in the way of successful articulation.

Legal barriers take many forms. Separate governance structures at the state level are the product of state and federal regulations which often differentiate between vocational and occupational education. Teacher licensing requirements, budget review procedures, even curriculum offerings are frequently subjected to state approval by different chains of command -one overseeing vocational programs, the other community colleges. Contracts with local proprietary schools

for course offerings may be prohibited by state laws. Potential sources of funds are limited by law to eligible candidates. Again, such constraints fly in the face of local initiatives to achieve collaborative agreements.

Perhaps the most pervasive and yet difficult barriers to grapple with are the value orientations of the various institutional representatives involved. Vocational educators often lack appreciation of the contribution a liberal arts education can make to vocational preparation. Community college faculty, on the other hand, are concerned about educating the "whole person" and are apt to give equal weight to the development of problem solving skills as to entry level job skills. Many of the teachers at area vocational schools find that it is difficult to charge time to collaborative planning because they are expected to spend their time in the classroom teaching. Faculty members at a community college, on the other hand, often enjoy a greater degree of freedom in determining how they can or should be spending their time. Teachers recruited for area vocational schools often travel a different route in arriving at their present position than faculty employed by community colleges. These differences in experience and training are reflected in their role perception and modes of operation. It was just such differences that led Congress to mandate that vocational educators of all stripes and persuasions should bury their differences and put their efforts behind a common commitment as they undertake the difficult task of articulation.

This is the purpose of a study now underway jointly sponsored by the American Association of Community and Junior Colleges (AACJC) and the American Vocational Association (AVA). Last August, the two national associations agreed to jointly sponsor a study of administrative policies and practices at the local level which have resulted in exemplary programs of coordination and cooperation between

public and private institutions providing postsecondary non-baccalaureate occupational and vocational education. In the interest of serving as many youths and adults as possible in a given community at the lowest possible cost, the study will concentrate on and report the findings from a nationwide survey designed to pinpoint those policies and administrative practices that facilitate or impede cooperation among community colleges, postsecondary area vocational schools, proprietary schools, and other institutions or agencies concerned with vocational education. All community resources, be they industry based training programs, proprietary schools or public institutions will be inventoried.

A National Advisory Council has been appointed with joint nominations by the two associations and the joint study team established in December. Following an in-depth review of the literature, several criteria have emerged that will be used for the purpose of identifying successful cooperative efforts. Nominations of locations having exemplary programs will be solicited from state directors of community colleges, state directors of vocational education, executive secretaries of state advisory councils for vocational education, and by institutional representatives at the local level. Several announcements and invitations have already been issued to interested groups. Among those evidencing their interest in cooperating in the study are the Council for Occupational Education (AACJC), the Committee for Postsecondary Education (AVA), the American Technical Education Association (ATEA), the National Advisory Council on Vocational Education, the Education Commission of the States, and the National Association of Trade and Technical Schools. Since the study calls for the identification of successful collaborative efforts and in-depth site visitations of those exemplary programs nominated, visitation teams are being readied for visits throughout the country over the next few months. The resulting data from those site

visits will be used to document the extent of cooperation and coordination among institutions in a given community. Based upon this initial screening, about six exemplary sites will be selected and case studies developed on each. An overall assessment of the findings together with the case studies will then become the basis for a series of five regional conferences and a national conference scheduled for the fall and early winter. The five regional workshops will be geographically located in such a way as to serve all of the USOE regions. Each regional conference will produce a set of recommendations for consideration at a national conference scheduled for February 1978.

Now let me turn to the authors represented in this publication who have been invited to share their extensive knowledge and experience in establishing effective programs of articulation. Dr. Don Garrison, President, Tri-County Technical College, South Carolina and Mr. George Elison, Dean, Lehigh County Community College, Pennsylvania have both successfully implemented new institutional arrangements for cooperation with other educational institutions in their respective communities. Dr. Eugene Lehrmann, State Director, Vocational Technical and Adult Education, Wisconsin, and Dr. David Mertes, President, College of San Mateo, California will present the perspective of persons involved in planning and administration at the state level.

Local Articulation Effort: The Tri-County Technical College

Don C. Garrison

Before I describe Tri-County Technical College's articulation effort, let me provide a bit of background on how this institution was created.

The South Carolina Technical Education System was created in 1961 by the South Carolina General Assembly. The General Assembly enacted legislation establishing a State Advisory Committee which was conceived as a mechanism (but not legally defined as such) to advise the State Board of Education. At that time, the State Board of Education and its Office of Vocational Education offered little beyond home economics and agriculture at the secondary level. In truth, the South Carolina Advisory Committee for Technical Education never functioned as an advisory committee but operated as if it were a full-fledged separate state agency.

The South Carolina Technical College System (TEC) operated in this manner until new legislation was passed by the General Assembly in 1971. The 1971 bill established the State Board as a separate independent state agency. The same bill also granted those technical education centers (with local and state approval) who wanted to become comprehensive community colleges the authority to do so and the right to change their titles to technical colleges. Five of the sixteen institutions in the system are presently operating as full-fledged community colleges. Each has a local governing board to help insure that the institution is responsive to business, industry, and the people of the community. No additional technical colleges are planned and presently 98 percent of the people of South Carolina live in commuting distance of such a college.

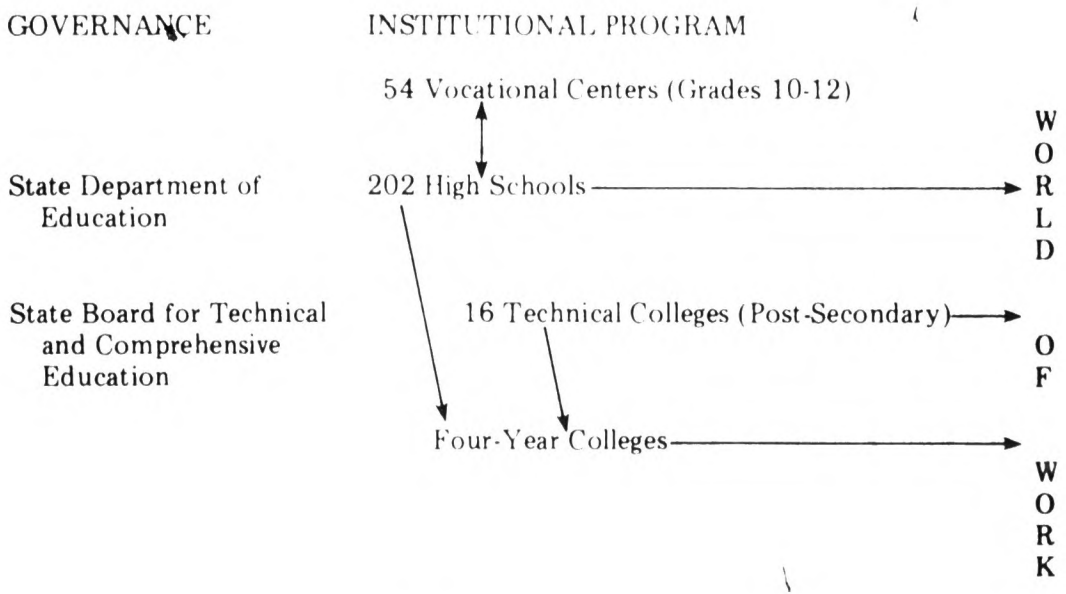
The decision whether to seek the status of a comprehensive community college is left to the local governing board. Each college that has chosen not to seek a comprehensive status is located in a community already served by a university branch or a state-supported four-year college.

It is important to remember that our Technical College System was in part created as a tool to be used by the State Development Board to attract new risk capital to the state to help build and expand our economic base. This is why we have been so closely allied to business and industry in the state. South Carolina has been a national leader in industrial growth over the past 15 years. Just recently, it was announced that a new chemical plant manufacturing plastic products with an initial investment of $30 million and 500 new jobs will locate in our community. During the past few years, Michelin Tire located three new plants in our state. One of them, located in our community, represents a $50 million investment and 650 jobs. I am happy to say that Tri-County Technical College was intimately involved in convincing these companies to locate in South Carolina.

When the Technical College System was created in 1961, the enrollment in secondary vocational education was relatively insignificant. This is not true today. Soon after we began operations, the State Board of Education developed one of the finest secondary programs of vocational education in the nation. Currently, there are 54 vocational centers in operation in the state and 12 more are planned. As a group, they serve 202 high schools throughout the state (see Figure 1).

The success of the statewide Technical College System, I am sure, contributed to the proliferation of vocational centers. The technical colleges and the vocational centers have always worked with each other because they realize that each has a viable position in the state's educational system. TEC's success also promoted an unprecedented rate of industrial development, intensifying the need for vocational training

Figure 1. The South Carolina Vocational-Technical Education System



and giving the blue-collar worker new-found prestige and increased salaries. At the same time, the federal government began to pump more money into secondary vocational training and the U.S. Department of Labor issued a job forecast showing that by 1975 approximately 75 percent of the jobs in the U.S. would require some type of secondary or postsecondary training below baccalaureate requirements.

As these secondary and postsecondary systems have developed over the past 15 years, so have the number of similar instructional programs. Given such programs and access to new facilities, enrollments have, of course, increased. As an example, the enrollments throughout the state in four selected programs in vocational education during 1975-76 were as follows:

Enrollment:	
Secretarial Science	2,174
Industrial Electricity Electronics	805
Machine Tool Technology	796
Auto Mechanics	1,376
Graduates:	
Secretarial Science	289
Industrial Electricity Electronics	220
Machine Tool Technology	160
Auto Mechanics	239

In each of these program areas, one-year and two-year diplomas and two-year associate degrees were conferred.

While these numbers may seem impressive, we are not satisfied that we have done all we can for the potential student in South Carolina. An analysis of the 1975 graduates indicates that only 14.2 percent of those graduating from high schools in South Carolina enrolled at a technical college or center. Our assumption is that had we been more effective in implementing articulation between secondary vocational program offerings and those at the postsecondary level, the follow-up enrollment would have been much greater.

Articulation requires deliberate effort on the part of both the sending and the receiving institutions in order to achieve some degree of coordination. It often requires re-sequencing or revision of the curriculum on the part of both. It may require modification of procedures and policies as well. It necessitates cooperation and communication. Articulation is a process, not a product, and unfortunately, it does not lend itself well to description.

A recent study of articulation by the National Advisory Council on Vocational Education[1] defined articulation as the planned process within the education system which facilitates the transition of students between secondary and postsecondary levels of instruction. It enables students to move with continuity and without hindrance through various levels of the education process.

As one illustration of an effort to achieve articulation between secondary and postsecondary programs, I would like to focus the remainder of my presentation on the description of a Career Cluster Project undertaken at Tri-County Technical College in conjunction with the high schools in the surrounding counties. Our hope is to join or interrelate two or more levels of education through forming a continuous program of study in two specific occupational fields such that students can move easily from one program level or type of school to another.

Two instructional programs are now in operation at Tri-County Technical College: Machine Tool Technology and Heating and Air-Conditioning-Refrigeration. They are interlocked with their counterpart programs at the four secondary

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[1]The National Advisory Council on Vocational Education, *Articulation: A Study of The National Advisory Council on Vocational Education*, Washington, D.C., May 1976.

vocational centers in our service area. We do have a continuous instructional line and near perfect articulation has been achieved. Students move easily from one program level to another.

There is no difference between units earned at the vocational center and units earned at TEC. The task requirements are identical, and, once the tasks are mastered at either institution, they do not have to be repeated at the other. We have completed these Learning Activity Packages (LAP's) for all courses offered mutually.

The Career Cluster Project was funded primarily by the South Carolina Appalachian Council of Governments and the State Office of Vocational Education at approximately $480,000. It was to span a four-year time frame in four phases and was designed to develop self-paced instructional materials for the two vocational-technical programs identified. Objectives of the project included the improvement of student achievement in skill and knowledge requirements, program standardization, improvement in secondary postsecondary program articulation and a more flexible entry-exit capability.

These objectives were designed to overcome many of the shortcomings of the traditional system. By individualizing the instructional process and insuring that the program content reflects true on-the-job knowledge and skill requirements, variations in learning rates and recognition for previous experience could be accommodated. Adapting the scheduling of course offerings to student needs would help to insure that recent high school graduates who had taken full- or part-time jobs would be able to take full advantage of the curriculum offerings.

I would like to briefly describe how the program was accomplished in order to illustrate some of its unique features. A four step approach was used:

Step 1. Determine skills and knowledge required by industry. A list of tasks was prepared by job titles and was linked to the *Dictionary of Occupational Titles*. This list was

then reviewed with instructors and industry representatives to insure its completeness. Competency statements were developed according to instructor and industry representative specifications.

Step 2. Write, organize, and sequence measurable objectives based on competency statements. Behavioral objectives were derived from the competency statements by first organizing them into instructional units and then sequencing the units. Sub-objectives were developed for each unit. A Learning Activity Package was developed for each sub-objective and then reviewed and edited. Industry representatives were asked to review and suggest changes in the objectives which were then re-edited.

Step 3. Prepare instructional materials. Each LAP consisted of a behavioral objective, identification of the criteria to be used in judging completion of the LAP, self-administered instructional materials (including appropriate audiovisual aids), and completion tests. Rather than develop an entirely new set of instructional materials, the units, behavioral objectives and LAPs were weighed against already existing materials. Where gaps existed, instructors were asked to develop additional materials.

Step 4. Implement and evaluate materials. All audiovisual equipment and instructional materials requirements were planned well in advance of the actual instruction. A management plan was then derived and administrators were familiarized with the implementation plans. In-service training for the instructors in the instructional procedures and the evaluation plan was provided. An external evaluator was contracted with, and four instruments were developed to assess the extent to which (a) saleable skills had been achieved; (b) students met the performance requirements as specified; (c) articulation was accomplished; and (d) students and teachers accepted the new programs.

The basic element of the instructional program in this Career Cluster Project is the Learning Activity Package. All of the LAPs utilized a standard format and were largely adopted from the Sanford Research Project carried out by the Sanford Central High School in Sanford, North Carolina. The following brief description illustrates the LAP format and its purpose:

ELEMENT	PURPOSE
Unit, Section and LAP Number	Helps the student to identify the LAP he needs to complete his way through the sequence.
Rationale ("Why should you learn about . . .?)	Relates the individual LAP to the overall purpose and content of the course.
Goal	States a specific, measurable behavioral objective and the criteria to be used in determining satisfactory completion of the LAP.
Learning Activities	Directs the student to the reference. He must read along with slide-sound presentations which he must view and study.
Learning Practices	Directs the student to take a written test and perform a recitation or perform a task in the shop. Lists tools, equipment, safety considerations and provides step-by-step instructions for all shop procedures.

Written Test	A short, objective test (multiple choice, fill in the blanks, diagram, drawings, etc.) designed to reinforce content of the LAP. Not scientifically derived nor recommended for use as examination type assessment.

All participating students are trained in the use of LAPs and the accompanying audiovisual equipment. They are provided with a list of the LAPs for the course in which they will enroll and are able to keep track of their own progress in the same way that their instructor does on the student report form. As written tests are taken, the instructor records the results and other information on the student's performance as he or she moves through each LAP. Upon successful completion of the LAP, the instructor indicates that the student has done so on his report form and files the form for future reference.

In summary, four area vocational schools and Tri-County Technical College have successfully implemented and evaluated instructional programs in the two occupational fields described. During 1977, the same program is being extended to eight additional sites throughout South Carolina. As a result of our second year evaluation of the original sites, more intensive in-service training will be given to new teachers prior to implementation of the program. An attempt will be made to collect longer range follow-up data from the participating Appalachian sites. We hope to achieve greater comparability of results by asking the new participating schools and colleges to develop, in advance, written agreements for the implementation of the programs. We will be asking each of the instructors involved to keep a detailed notebook of errors, omissions, and superfluities found in the instructional materials for later use as we undertake to improve upon these two programs.

From this brief description, I hope that you can sense both the complexity as well as the advantages of this articulation effort. We were fortunate to have both the resources and the staff capability needed to carry out this effort.

This Career Cluster project is part of the foundation of a comprehensive community college. The comprehensive institution must respond to the needs of individual students while meeting the needs of the community. It must know the training requirements of local employers and it must realize that students enter with varied competencies. The open door presents a unique challenge for the college to develop programs allowing students to advance from individual and varied starting points. Without the responsiveness to the individual learning needs of students and the responsiveness to the training needs of local employers, can it be a comprehensive community college?

Interinstitutional Cooperation in Lehigh County

George Elison

It is my pleasure to join with you today to discuss the timely topic of interinstitutional cooperation. With tightening budgets, changes in enrollment patterns, and an increasing charge for educational accountability, this subject is certainly an important issue in Pennsylvania, and I imagine in every state. However, I feel somewhat like the farm boy giving directions to a man lost on a country road—I am here to give you directions, but I am not sure where you want to go. Let me begin by saying that differences in state laws and terminology frequently pose problems in understanding. Therefore, I will present some basic definitions that will pertain to my discussion.

In Pennsylvania, the community college is a comprehensive institution offering a wide range of courses and programs. The intent of the original legislation can readily be seen by the mandate that 70 percent of the state funds had to be spent on nontransfer programs. The community college may offer area vocational technical services but cannot be classified as a vocational technical school.

The primary responsibility of vocational technical (VT) schools is to provide vocational and technical education for high school students. Courses may be offered for adults, but these evening adult education courses are seldom structured into a total program for job preparations. VT schools may offer full-time programs at the postsecondary level, but they are not authorized to award associate degrees. Due to these and other factors, VT schools usually limit their adult offerings

to courses primarily designed to upgrade employed persons or to introduce trade concepts on an avocational or prevocational basis. This plus a continuing controversy over the distribution of federal vocational education funds creates varying degrees of conflict throughout the state. In spite of this, the possibility of expanding into the postsecondary field is enticing to many vocational directors.

Some of these conflicts were eliminated in Lehigh County because the vocational school and the community college were developed at the same time with essentially the same elected school board members involved in this action. The legal designation of both institutions and the formation of the boards of control came in late 1966. Following the appointment of administrators, meetings were initiated to discuss ways of cooperating. A coordinating committee, composed of administrators, school directors, and college trustees, was formed and meets regularly to consider common problems. These meetings produced immediate results, the primary one being the acquisition of a 200-acre tract. Legally, the college holds title to 150 acres, with the vocational technical school having the remaining 50 acres. This entire area has been developed as an education complex. Both institutions share roads, parking lots, sewage facilities, and an emergency water system. The financial gains from these actions can be readily seen.

Having made provisions for the physical plants, the committee turned its discussions to the matter of program developments. This came at a time when money for education was plentiful; however, it was apparent that this condition would not prevail. It was agreed that all matters should be based on merits to the students and taxpayers. Institutional jurisdiction and identity was not given major consideration.

After several months of unofficial meetings, a policies and procedures statement was approved by the governing

bodies of the Lehigh County Community College, the Lehigh County Area Vocational Technical School, and the Carbon County Area Vocational Technical School. This latter unit is in the geographic area served by the community college, but is located some twenty miles from the college. As a result, the cooperative efforts have not been as productive as with the Lehigh County Area Vocational Technical School.

The basic assumptions are as follows:

1. The need for educational programs designed to prepare persons of all ages for specific occupations will increase. Therefore new programs as well as increased capacity in existing programs will be required.
2. Future funding by state and federal agencies will be limited.
3. Long-range planning for the use of funds and facilities can be best accomplished by local educational agencies.
4. The differences in the missions of the community college and vocational technical school are created by factors such as the age of the student, requirements for general education, etc. In many cases, these differences do not require major variations in facilities and equipment.
5. Basic preparation for a given occupation will be similar regardless of the age level at which it occurs. The trend toward task analysis and performance objectives will make it much easier to evaluate competencies. Therefore, students should receive credit for occupational competencies regardless of how or when they were obtained.

From these basic assumptions, we prepared procedures for the development of programs. These are as follows:

Determination of Need

Each institution works with lay advisory committees, local and regional manpower planning councils, Offices of the Bureau of Employment Security, and similar organizations. Indications of program needs come from these sources and administrators evaluate this need to determine if a course or program is justified.

Designation of Institution

When the administrators determine that there is a need for a course or program, recommendations are forwarded to the coordinating committee to determine which institution should develop and offer the program. These recommendations are based on the following criteria:

a. The level at which the program should be offered.
b. Adequacy of existing facilities.
c. Effect upon existing programs.

Program Development

a. The institution designated to offer the specialized phase of the program is responsible for the appointment of the advisory committee, development of the curriculum, determination of the need for equipment, and staffing.
b. The cooperating institution is involved in the planning process to insure that the program meets the requirements of legislation and regulations.
c. Programs are planned, to the maximum extent possible, to permit students to meet their specific interests and needs. These could range from the completion of one course to the awarding of the associate degree in applied science.

Student Recruitment and Selection

The recruitment of students is a joint effort. All advertising is released jointly, and the counseling offices of

both institutions are prepared to discuss the requirements of the program. All postsecondary students are registered at the community college, however, they may be registered with any of the cooperating schools.

Budget

a. The institution conducting the specialized phase of the program will prepare operating and capital budgets for a period of three years. All institutions will guarantee financial support during this period for staffing, program promotion, etc.
b. Payments for contracted services received from governmental or private agencies are credited to the specific program and institutional payments are reduced accordingly.

Evaluation

Program evaluation is a continuing process. Procedures are developed cooperatively provided the faculty contracts are not violated. As previously noted, cooperative meetings have been in progress for ten years and the formal agreement has been in operation for about five. Our basic goal has been to expand services to students at minimal costs to the taxpayers.

How successful have we been? The results can be discussed using the following categories:

a. Program articulation.
b. Enrollment of vocational technical students in college courses.
c. Sharing of facilities.
d. Sharing of personnel.
e. Expansion of services.
f. Cooperatively sponsored programs.

Program Articulation

Program articulation was an important step since success here would set the stage for further action. For example, duplication of some programs was justified for a variety of reasons. Therefore, we set about determining how to recognize achievement for students who moved from the vocational technical school to the community college in the same or a similar field. This was accomplished by arranging a series of meetings of all faculty involved in teaching in such programs. Their assignment was to thoroughly review the material being taught at both levels. Although behavioral objectives had not become a household word at that time, this was essentially the manner in which the common elements were determined. From this analysis, recommendations for advanced standing were developed.

There were two unique factors involved in this process. First, neither the vocational technical nor the community college group wasted any time debating why the other existed, and no attempt was made to tell anyone what to teach. The problem became strictly a matter of identifying common learning goals. The second factor was the rejection of the use of challenge examinations. Advanced standing was to be awarded by the college on the basis of the recommendations of the faculty of the vocational technical school.

This procedure has been reviewed periodically. In fact, one of my co-workers used this as the basis for his doctoral study. All studies have shown it to be successful. As a result, the process is now almost automatic, with the acceptance of a vocational technical graduate by the community college. Awarding of advanced standing has also been extended to schools and proprietary institutions outside of our service area.

Enrollment of AVTS Students at the Community College

Individual differences of students is a well-established fact. To compensate for these differences, along with placing the better vocational technical students in a more challenging position, the matter of selected college courses was explored. Since the basic work of determining program levels had been completed, the faculty of the vocational technical school was given the responsibility of recommending seniors for admission to college courses. A few students will enroll in one course during the fall semester of their senior year. Others will enroll in the spring semester. Approximately 10 percent of the graduating class from the vocational technical school are involved in this program. Courses from the specialized programs offered by the college as well as advanced mathematics courses are most commonly elected. There is no cost to the student for this privilege.

Sharing of Facilities

The proximity of the institutions, nature of the programs, and teaching schedules made the sharing of facilities a distinct possibility. From the outset, the decision had been made to share such things as access roads and sewage systems. The move from this to the sharing of facilities was relatively simple. We have shared a variety of specialized areas successfully. Basically, the vocational technical school has the large, heavily equipped instructional areas, such as machine shops, while the community college areas, such as the library, demonstration areas, classrooms, and gymnasium. Our agreement permits the use of any of these facilities as available without rental charges. When facilities are used on a shared basis, the assignment of faculty is determined by program requirements, and faculty from either institution may be used. To date, the problems have been minimal.

Sharing of Personnel

The establishment of the community college and the vocational technical school brought about an increase in the types of adult education available to the community. General interest non-credit courses were being offered by both of the schools with duplication occurring frequently. To eliminate this situation, the college and the vocational technical school established a common office for all non-credit courses. The offices of this group are maintained in the community college with the costs of the operation being shared. All students are registered by the college and the necessary records are maintained in this office. Specialized courses and seminars are developed by this group. The assignment to the college or vocational school is based upon several factors, the primary one being the type of facility required. Administrators and faculty from both schools are available to aid in program development and instruction. All advertising is done jointly, which greatly increases coverage and effectiveness.

Expansion of Services

Much of what has been discussed previously involves expansion of services. However, there are other areas where this occurs. For example, schools have different types of computers. To deal with this situation, an exchange of students permits the groups to be exposed to different systems. Similar exchanges have taken place in the food services program. In addition, all speciality laboratories are available for use by any group. Generally, these arrangements are now made by the faculty members involved.

Cooperatively Sponsored Programs

Our latest and most important venture has been to develop complete programs that are sponsored cooperatively.

Two of these, Automotive Technology and Indoor Environmental Control, are now in their second year of operation. In addition, a Food Services Program is well along in the planning stage. These programs were brought about by community need and the realization that the only way to meet this need was to use the facilities and faculty of both schools. The college had the required general education courses already available while the vocational school had facilities available during the late afternoon and evening. By combining forces, we could offer needed programs that could not be offered independently. The procedures listed previously have been followed in the development of all of these programs. They are a blend of general education, which support mathematics and science courses as well as specialized courses. The specialized courses are taught at the vocational school by faculty selected by that school while college faculty teach the rest of the courses. The program is approved by an advisory committee and then submitted to the college curriculum committee. When approved by this group, it is approved by both boards of control. The program is published in the college catalog and is approved by all necessary agencies, including the Veterans' Administration and the Bureau of Vocational Rehabilitation. State and federal reimbursements are based on college regulations.

The success of these programs cannot be determined at this time. However, the scheduling sequence has brought about a blend of full-time and part-time students similar to the total college population. Enrollments have been increasing and student evaluations have been favorable. If these programs prove to be successful, other programs will probably be developed.

This represents most of our efforts to date. While we have experienced both success and failure, the overall trend has shown that much can be accomplished that is of benefit to the community. What we have done has not created a tidal wave, but at least has caused some ripples on the normally

placid educational waters, and this has been noticed by others. We have had many visitors from vocational schools and colleges in Pennsylvania and neighboring states. It appears that other institutions will move in a similar direction.

What factors tend to prevent others from establishing such practices of cooperative agreements? There are two major problems. First is the matter of jurisdiction. Most people ask, "Who controls the programs?" We believe that we have worked out a satisfactory answer through a type of cooperative control. Most of our visitors are not convinced that this can be done. This attitude comes primarily from college administrators who believe that the college should have absolute control.

The second problem hindering cooperative agreements is that too much time is spent talking about differences, many of which are imaginary. I believe that if we approach cooperative efforts from the point of the similarities of occupational programs rather than the differences, we will find answers without too much trouble.

The history of education shows that most joint efforts come from external forces. For the most part, these have taken the form of special reimbursements for jointures and/or mergers, and in Pennsylvania, the initiation of the community colleges and vocational technical schools. The shrinking educational dollar may be the force that will make further cooperation a reality. I believe that it is time for educators to take the leadership to bring this about. We should not wait for legislators to initiate action by financial inducements or legislative action without the necessary reimbursements.

The Need for Articulation:
The Wisconsin System

Eugene Lehrmann

The Wisconsin system is structured differently than most states in that we have a unique arrangement for delivering education. The legislature of our state has seen fit to define the mission of three jurisdictional bodies very clearly in its statutes. The first body is the superintendent of schools, which is a constitutional office in our state. He is elected by the citizens of the state and is responsible for elementary and secondary education.

The second body is the University of Wisconsin Board of Regents, which is responsible for all of higher education in the state.

The third area of education as defined by the legislature is vocational, technical, and adult education. It has a separate board to look after all vocational activities at the secondary and postsecondary level; that is, to be responsible for them, to take care of all adult education at less than the professional level, outside of the university's continuing education program, and to deliver what we call technical education in the state of Wisconsin. You heard references to associate degrees and the like. These are all responsibilities of this body. The only associate degree program offered in our state, outside of that offered by the Division of Vocational, Technical, and Adult Education, is offered by the university network as a liberal art's associate degree, which can be conferred at one of their centers or at one of their four-year universities.

This makes it a very different structure from most states. At the national level, I serve in a very different capacity than

many of my counterparts. I'm the state director of vocational education; I'm the state director of community colleges; and I'm the state director of adult education. This means I meet with three separate groups when I meet at the national level.

Let me tell you a little bit about our structure to see how articulation starts at the highest policy level. First, articulation is mandated by the legislature. Vocational, technical, and adult education has been in operation in our state since 1911, and at that time a nine-citizen board was created, as were the roles of commissioner of industry, labor, and human relations (which in your state may be the labor department), the state superintendent of public instruction, and four years ago, when our whole university system was merged under one University Board of Regents, the president of the University of Wisconsin's Board of Regents. Now I might point out that for articulation purposes at this high policy level three members of the state vocational board—namely the superintendent of schools, the president of the University of Wisconsin Board of Regents, and the president of the State Vocational Board—sit on both boards and the superintendent of schools is autonomous as far as the secondary and elementary school program is concerned. She sits on all three. We do not have a board of education. We had a coordinating council until about four years ago. It existed for nine years and was expanded when the University of Wisconsin Board of Regents took over all of the university systems, so we've gone from a coordinating system to the kind of arrangement we have today. I might add that we're one of four states that does not have a 1202 commission. Our governor saw fit not to appoint one because he had been disillusioned by what happened to the old coordinating council.

I would like to point out that we have exercised caution by leaving the decision-making process as far as budgeting and allocating of resources are concerned to the legislature. Each of these bodies has the opportunity to go to the legislature

and present its case in terms of its need for financing and funding. Public schools in Wisconsin at the elementary and secondary levels are funded at about 40 percent state aid, whatever there is in federal aid (which is pretty small), and then the balance from local property taxes. The university system is entirely financed by state aid, tuition, and money coming from federal activities and other grants and gifts.

Thus, we do have articulation at the highest possible policy-making level. When I send out a policy announcement on a given day, the president of the University of Wisconsin and the superintendent of schools know about it the next day. Conversely, when they decide something, I know about it. We know what will be proposed in the budgets of each of the institutions ahead of time, so there are no surprises that come out at budget time as far as the three educational activities are concerned.

In addition to that, we have a structure in our state whereby all program activities are reviewed by the various educational levels. Let me explain how this works. We have three joint administrative committees serving the University of Wisconsin system and the State Vocational Board. One is in programs, another is in facilities, and the third is in continuing education. Every program that comes up, every new facility that is built by either one of our two systems, is reviewed by that joint administrative committee. The same is true when it comes to articulation with the secondary schools, since the State Board is responsible for all of vocational education. We know what plans the secondary schools have for putting in new programs. Since they have to be approved by the State Board of Vocational Education, the two administrative staffs have to get together. This helps us to insure that the programs are meshed, are interlocked, enabling a smooth progression from the secondary program to the post-secondary program. Special attention is given to such efforts.

We have joint agreements with the university system and with the Department of Public Instruction. Anyone can sit down and review these agreements and determine in advance the process they must go through to receive approval for a new program. It's this matter of program review that brings about what I believe is the kind of articulation that the State of Wisconsin is looking for.

As Director of Vocational Education, I'm faced with the responsibility for making certain that a state plan for vocational education is developed over a five-year period for the purpose of projecting enrollments in all program areas, as well as determining if the occupational information available warrants either continuation of old programs or starting up new programs, or building new facilities, or whatever is called for.

In Wisconsin, that planning process is going on as required by the Vocational Act of 1976. A planning group is supposed to determine what kinds of programs will be developed at all educational levels. The State Board is responsible for submitting that plan to the commissioner. We're going through that process right now, and I want to point out a couple of our challenges:

1. On the subject of changes in enrollment patterns in Wisconsin, from the community college and the postsecondary/vocational technical system, over the last few years we've seen the age of our students increasing—from an average of 23 about five years ago to the average age of 26. We're attracting more and more people who are employed, coming back in for continuing education. Thus, more of our students are part time. Our share of the secondary school graduates is getting less each year. Students are going into the world to work or taking time off, doing something else, but they aren't coming back to us until two or three years later. That's what

our studies have shown. So we're getting fewer students directly out of high school.

2. Enrollments are going down or will be going down in the very near future in our secondary schools. Madison, Wisconsin can close (they haven't done it yet, but they're going to do it this year) one elementary school a year—that's 600 students in our city. You add that up over six years and that's 1,800 students or the equivalent enrollment of one of our major senior high schools. We have four of them in Madison. I guess I need not say more when I tell you that when you're planning for five years, you have to take a look at enrollment projections.

What works in Wisconsin may not work in your state, but I think all of us as educators, all of us as citizens, have a responsibility to step back and take a look at these challenges. Technology is changing. We recognize that. Social responsibilities are changing. Young people are finding it more difficult to enter the world of work. In our state, business and industry expect more of us in technical training, not less. They want people who can move into a ready-to-perform job. We refer to "job ready," not "job entry" any more. Business and industry are not willing to make the investment and competition will not allow it—bringing people up to where they're "job ready."

All of these are challenges for us in terms of a well articulated program; looking at what we ought to be doing at the secondary level and what we should be doing at the post-secondary level. We are in the process of doing many of the things that need to be done. We try to make certain that a student's knowledge and skill are readily transferable so students can move from one level of training to another without losing credit for previous training or for previous effort. We're very much concerned in our state that we're addressing these issues properly in our five-year plan.

These are the things that are happening in Wisconsin. I guess if I had to identify one stumbling block, it would be that we have many facilities already in place. We have brick and mortar scattered all over our state that every one of us wants to be using. I know the university as a community is looking at the same population we're looking at for increased enrollments. They're looking at the older student and they say "That's where our enrollment increases are going to come from." We're looking at the same thing in our postsecondary institutions. I know in some states the elementary and secondary schools run the adult program and are looking for salvation for their area schools by expanding their adult program. That's the way they're going to save it.

In Wisconsin the biggest factor that keeps us from bringing people into centers is transportation. Two-thirds of our people live in the southeastern part of the state. One-third live over an area of 40,000 square miles where students are bused into their central high schools. They ride as many as 50 miles a day before they get to school. The cost of transportation is going up and I think we're going to be under pressure to deal with these things in the future. These may be the kinds of costs that are going to influence to a great degree our articulation at the state and local level.

The Need for Articulation:
The California System

David Mertes

I've been asked to address two issues. One is a summary of the statewide scene in California which I will do from the point of view of Chairman of the California Community and Junior College Association Committee on Continuing Education. The second will be to comment about some activities going on in my home district, San Mateo County, which is just south of San Francisco.

In order to set the stage for this discussion, I'd like to comment on certain problems in California. The major issue is the financing of education. First of all, part of our educational system which includes the K-12 and the community colleges is based on local property taxes. The taxpayers are dissatisfied with the high property taxes to support education and are demanding change. Second, the state Supreme Court has reaffirmed that our system of property tax as the basis of funding for education is unconstitutional. It's inequitable and must be changed and we have three years to make that change.

Another concern is that as of July 1 we have state-mandated collective bargaining for the K-12 system and community colleges and are now in the turmoil of adjusting our governance system to collective bargaining. We're trying to learn from the experiences of other states. Some of you have told us great horror stories about your experiences, but we've been given very little positive input.

A situation that might be unique to California involves our continuing education programs and our technical-vocational programs which are highly dependent upon

part-time faculty. These have been traditionally nontenured employees. In other words, they have been employed on a semester or a year basis and treated as casual, temporary employees without reemployment rights. That whole issue has been challenged in California. In fact, I am aware of about thirty different court cases that are testing the interpretation of our state education code on this issue. It appears that we may be on the brink of establishing formalized tenure for all part-time faculty in California. If this happens, it will be a major change in how we operate.

Like many states, California is experiencing lower enrollments particularly in the K-12 system. In the community colleges, enrollments per se are not lower, but they are not meeting long-range growth expectations. In addition, the characteristics of students coming to the community colleges are changing. For example, at San Mateo Community College the average student age is 27.

Another factor in California that is a major issue is the philosophical matter of state control versus local autonomy for community colleges. The discussion on that subject generates very heated and emotional arguments between community college educators. In summary, educators are attempting to deliver services to meet a variety of expanding student needs; while people are saying those services simply can't be provided because the resources aren't there.

In California, we have various categories of educational delivery systems. The University of California system has its own Board of Regents and is funded from the state general fund. The state colleges (now referred to as the state college and university system) offer B.A. and M.A. degrees. Although the graduate programs tend to be nonresearch oriented it's a large system with its own Board of Regents and they, too, operate out of the state general fund.

The community colleges (currently there are 105 arrayed in 70 districts) are funded from two sources which include the state general fund and the local property tax. Each community college district in the state has an elected Board of Trustees that is responsible for policy determination. We also have a state Board of Governors for the community colleges that is appointed by the governor and charged with two activities. The first is to foster local autonomy of the community colleges and the second is to bring about coordination, articulation and uniformity of operation. One can easily see the problems that can develop around given issues when these two often conflicting charges are applied.

At the present time, the position of Chancellor of the California Community Colleges is vacant. There are fifteen members on the Board of Governors and five of them, or one-third of the board, are due for replacement. It is an extremely poor environment for the Board of Governors to be involved in selecting a new chancellor to give leadership to the state's community colleges.

The high school systems in the state are usually organized around local districts. They are governed by a locally elected board of trustees who are responsible for policy making and report to the State Department of Education. Almost every high school district in the state has an adult education component.

Another category of the educational delivery system is the Regional Occupational Programs or Centers (ROPC) that are often independent of the high schools. They are typically attached to a county school superintendent's office and are concerned primarily with technical-vocational training leading to immediate employment. They have unique funding sources directly from the state.

We also have proprietary schools and federally funded programs like CETA which are involved in educational delivery

as well. In addition, the Postsecondary Education Commission in California (CPEC) operates at the state level to coordinate the postsecondary sectors into an articulated delivery system.

Thus, we have a variety of approaches in this state and we also have a variety of governance models which result in considerable confusion over who is responsible for particular educational activities. In California, we're proud of the fact that we have master plans, but we have often done poorly in implementing the plans.

Much of the current concern in California is with the education of adults and with continuing education. How these services are delivered can vary widely in the state. For example, in one county the community college might have the responsibility for delivering all programs for adults whereas in another county, these adult education programs might be the responsibility of the high schools; or in a third county shared between the two.

At a time when resources were ample and enrollments were on the increase there were few problems. Arrangements and coordination among the community colleges, high schools, ROPCs, the proprietary sector, and four-year institutions worked reasonably well.

Our system of funding education from the state's general fund relates directly to average daily attendance (ADA). Some states refer to it as FTE, i.e., your money follows your actual student count. With strict tenure laws and the lack of flexibility in moving staff, any decrease of enrollments created almost instant financial problems. With fixed labor costs, money suddenly disappeared when enrollments began to decline about three or four years ago. The decline occurred in high schools first, and in some instances was very severe. As a result, many high schools actively started to recruit for their adult programs in order to build up their overall enrollments.

This caused a reaction on the part of community colleges in many areas of the state. They became involved in jurisdictional disputes over who does what for whom. The old voluntary agreement often frayed or broke down.

This conflict has been highlighted by the centralization-decentralization argument. Those who were saying, "Let's get everything centralized," are now claiming that they were right all along. What happened was that the legislature had passed a bill, AB 1821, The Montoya Bill, which required the establishment of regional adult vocational education (RAVE) councils which are essentially synonymous with the community college districts throughout the state. The community colleges, the high school adult programs, and the ROPCs have voting membership; the CETA prime sponsors and the proprietary schools have a vote. It is intended that any new adult education programs or any addition of non-credit courses has to receive formal approval by this body before it can be implemented.

The model is one of a decentralized coordinating unit with voting by the members. The legislation has built-in procedures for appeal to the State Department of Education or the State Community College Chancellor's office if case resolution is not achieved at a local level. We are in the early stages of implementing this particular legislation. The coordinating councils have been formed. The Committee on Continuing Education of the California Community and Junior College Association (CCJCA) established a clearinghouse to keep community college personnel informed of the progress of these RAVE councils during their early years of development. In the spring of 1977, we will distribute a position paper describing the strengths and weaknesses encountered during the first year of operation of the RAVE councils.

I would like to make two additional comments. I think that one can quickly see the advantages of this model which emphasizes a decentralized approach with mandatory local

coordination. Additionally, I would like to mention two problems that we've experienced so far. One problem develops from the nature of the RAVE legislation which essentially freezes the status quo. If a local region was operating effectively and without conflicts, it would probably continue to operate that way. In those areas where conflicts exist, the legislation freezes the status quo and the basis for continued conflict exists.

Basically, the legislation does not give a philosophical direction as to how adult education should take place in the state. There are no guidelines. In my view, we should be working toward establishing guidelines in California. Unfortunately, as a result of AB 1821, the wide variations in the delivery of adult programs will continue.

Meanwhile, while the high school, community college, and ROPC components, the private sector, and the prime sponsors continue to work out agreements and implement them, the four-year institutions (who are also facing enrollment problems) are discovering the fiscal value of continuing education and technical-vocational education students. The four-year institutions are moving into areas traditionally served by community colleges, thereby further complicating the issue.

Thus, there is a major unresolved problem in our state in determining who is responsible for the education of particular categories of students. The general nature of the state's Master Plan lends itself to ambiguity of interpretation at the local level.

Turning now to the local level, I would like to describe the environment in which the College of San Mateo operates. The college has about 17,000 students, evenly divided between day and evening. We're also one of the wealthiest counties in the state in terms of assessed valuation. Again this means that the local property tax funds about 84 percent of the total

operating budget. We are, I think, a sophisticated, comprehensive community college.

The industrial base is a highly technical one and our vocational training programs are oriented to that market. We operate with about 35 citizens' advisory committees made up of business and industry representatives who coordinate core programs with those advisory committees on an industry-by-industry basis. We also have a RAVE council that went into effect July 1, 1976. One of my colleagues, Mr. Jim Hardt, Director of Community Services at our college, was the president of the former all-voluntary coordinating council. When AB 1821 went into effect, Jim became our representative to the RAVE council. He is probably the most knowledgeable person that I know on a RAVE council.

Prior to the introduction of the RAVE councils in the state, Jim, from his leadership position in the old coordinating council, saw the potential for conflict. He remembered that pressures for a RAVE council grew out of a statewide feeling that something had to be done about educational costs. One of the first things that often happens in such a situation is to find a scapegoat and ours was duplication. Jim very accurately foresaw what was coming and brought together on a voluntary basis many people involved in educational delivery systems for adults. They did a very sophisticated but simple thing. They listed every course for adults taught in the county. They listed every course and its instructor on a grid. By superimposing these courses on grids correlated to geography of the county, population, and demographic information on socioeconomic background, we discovered that instead of duplication there were huge gaps in the delivery of programs in San Mateo County. Subsequently, our RAVE council (in contrast to some in the state) has been primarily concerned not with how to get rid of program elements, but rather how to fill in the gaps. We found concentrations of courses in certain areas

and voids in other areas. We found disproportionate delivery to specific socioeconomic segments of the community. It's a very sobering experience to discover that there are many needs in the community that are not being met while previously we had been trying to defend ourselves from accusations of unnecessary duplication.

We are now at work on an institutional model and are currently seeking funding to help it along. The model consists of three parts: the RAVE council which coordinates the educational delivery systems, a business-industrial unit that will have broad representation from those sectors, and a consumer segment which represents the special interests and problems of the individual who must interact with the first two segments.

We have selected the electronics field as our focus since it is a very large industry in our area. It is a rapidly changing technological field and it is cyclic in terms of employment requirements. It draws its employees from the local population. Electronics is dispersed among many different companies and several of the educational delivery systems are involved with it. In San Mateo County we're attempting to coordinate the educational delivery system with the requirements of industry along with coordinating efforts with the special needs of the consumer. We have the basic structure and our job now is to coordinate it.

I don't think master planning in our educational institutions is very beneficial unless there is a major input from the business-industrial and the consumer segments. If we are training people for employment either on the entry level or supplemental training, we are preparing them for something that is outside of our immediate control. We do not control the job market; it is independent of us. We educators have spent too much time talking to each other instead of with employer representatives discussing their needs, responsibilities and

contributions. We have to know what the needs of the business-industrial secotr are and make them a responsible partner in the planning process.

Our past experience is that we're often functioning in isolation and using poor data from the business-industrial sector. Unfortunately, the manpower projection component is weak and we could be training students for business and industry only to discover that the jobs aren't there. Our new approach and model is based on a detailed knowledge of the industrial component of the electronics industry from data supplied directly by that industry.

I'd like to close with a final comment as an administrator in a community college. I have referred to some statewide issues in California which include educational needs and availability of resources, and I believe that in a free democratic society education is an absolute necessity. If appropriate fiscal resources do not exist at the present time, I think that it is the responsibility of all of us to find those resources. To me, the most fundamental aspect of a free society is an educational system able to serve people throughout their lifetime. It is our responsibility as educators to assure that our mission of delivering lifetime educational services to people receives its proper priority.

QUESTIONS AND COMMENTS

Q.: What plans are underway for certification either in California or in the other states to insure that there is a high quality of occupational training available?

Gene Lehrmann:

In Wisconsin, we have certification requirements that all instructors of vocational education programs have to meet and that includes the general educator. Those requirements go as high as seven years' work experience before the individual can qualify to teach in a particular occupational area. It varies by program because some of the courses require completing apprentice programs plus serving three or four years as a journeyman.

There are no basic educational requirements to teach in the occupational areas in other states. An individual teaching welding may not even be a high school graduate, for that matter. Once the individual is in, he/she gets minimal provisional certification and then must take a series of courses that we have designed for people working in the occupational areas.

Now, if they're teaching in the general education field, we have the same requirements that most other institutions have. In other words, the minimum of a bachelor's degree, but we require everybody who teaches in the general education field to have had at least one year of work experience in business and industry and this certification is issued by the State Board of Vocational Education.

At the secondary level, it's somewhat different because there they have certification requirements that meet the high

school program. I believe there they require everyone to have a minimum of a bachelor's degree to teach in the occupational area, but we have a very complete way of certifying teachers in the vocational-technical area in Wisconsin.

George Elison:

Just a brief expansion. Pennsylvania has a very highly structured certification program for high school teachers. There is none for community colleges. Now I don't think that the community colleges in Pennsylvania would willingly adopt that, and, speaking for somebody who was at the high school level at one time, the relationship between certification and qualification is such that I think we would resist. The community college is strictly a local option—whatever your local board of control decides are the minimum requirements. We feel that we have done very well without certification at the community college level.

Q: One of the problems with or one of the opportunities in the community college field is the opportunity to recruit part-time faculty who are not experienced as instructors and then evaluate and watch their performance as they gain experience. Many are brought into full-time positions. I wanted to ask Dave Mertes if he'd like to comment on the trend in California toward the requirement that these part-time faculty members be tenured, what impact will that have?

Dave Mertes:

Well, statewide, there are two issues: (1) to be tenured and (2) to have full-time pay and part-time pay, which is a strict salary issue. The tenure issue has tremendous impact because it would mean that any of our part-time people

would be tenured for that number of units and we would have a lifetime commitment to them for that number of units. We had a court case (a class action suit) in early January that moved through the Superior Court. The ruling was that the part-time people in that district had tenure and that somebody with three units of tenure could have seniority over a full-time instructor for his or her three units. So the person might be teaching at night in an extended-day program, be tenured for three units, but actually hold a seniority right for three units over somebody who's full-time in a day program for three units of that program. I think it's so complex and the court rulings are so divergent that it probably will not be resolved in the courts quickly. The problem is our state code. The education code is ambiguous and the language can be interpreted in different ways, and obviously it is being interpreted differently around the state. In the Santa Monica case, which came out in December, the judge chastised the California legislature for not taking action and clarifying this and even used phrases like "This is no way to run a railroad." So at the present time, the part-time issue carries both tenure implications and financial implications somewhere in the neighborhood of one hundred million dollars per year if, for example, one of the salary issue cases would hold in the state. All of them are being appealed—at least three have already been turned down by the Supreme Court because they just weren't right, but one of them will get there and that's about a four-year process for the ruling of the Supreme Court.