DOCUMENT RESUME

ED 200 286 JC 810 208

AUTHOR	Arns, Kathleen F., Ed.
TITLE	Occupational Education Today. New Directions for Community Colleges, Number 33.
INSTITUTION	ERIC Clearinghouse for Junior Colleges, Los Angeles, Calif.
SPONS AGENCY	National Inst. of Education (DHEW), Washington, D.C.
PUB DATE	81
NOTE	124p.
JOURNAL CIT	New Directions for Community Colleges; v9 n1 Spr 1981
EDRS PRICE	MF01/PC05 Plus Postage.
DESCRIPTORS	*Community Colleges; Cooperative Programs; Delivery Systems; Economic Climate; *Educational Objectives; *Futures (of Society); General Education; Humanities Instruction; Job Development; Job Training; Program Evaluation; *School Business Relationship; Two Year Colleges; *Vocational Education

ABSTRACT

This collection of essays examines issues that educators must address to maintain occupational education's prominent role in the future. Kathleen F. Arns considers the implications of uncertain enrollment patterns, changing delivery systems, an uneasy economic climate, government policies, and collaboration efforts. The history of occupational education and the effects of its growth on community colleges are discussed by John F. Grede. Andrew S. Korim explores strategies for dealing with the problems occupational education will face in the 1980's. Lawrence F. Davenport advocates an expanded role for community colleges in government-funded manpower programs. David S. Bushnell examines occupational education's role in job development and creation and offers program models. Mt. Hood Community College's project to collect labor market information while providing research training to unemployed persons is described by R. Dan Walleri and Betty Pritchett. Stanley J. Spanbauer describes Fox Valley Technical Institute's open-entry/open-exit Perpetual Enrollment and Graduation System. A model for comprehensive occupational program reassessment is detailed by James E. Seitz. Societal trends with implications for occupational education are examined by John E. Cleek. William A. Koehnline presents models for integrating the humanities and occupational education. The Community College of the Air Force is described by Douglas E. Testerman. Finally, Donna Dzierlenga reviews ERIC documents dealing with occupational education. (DD)

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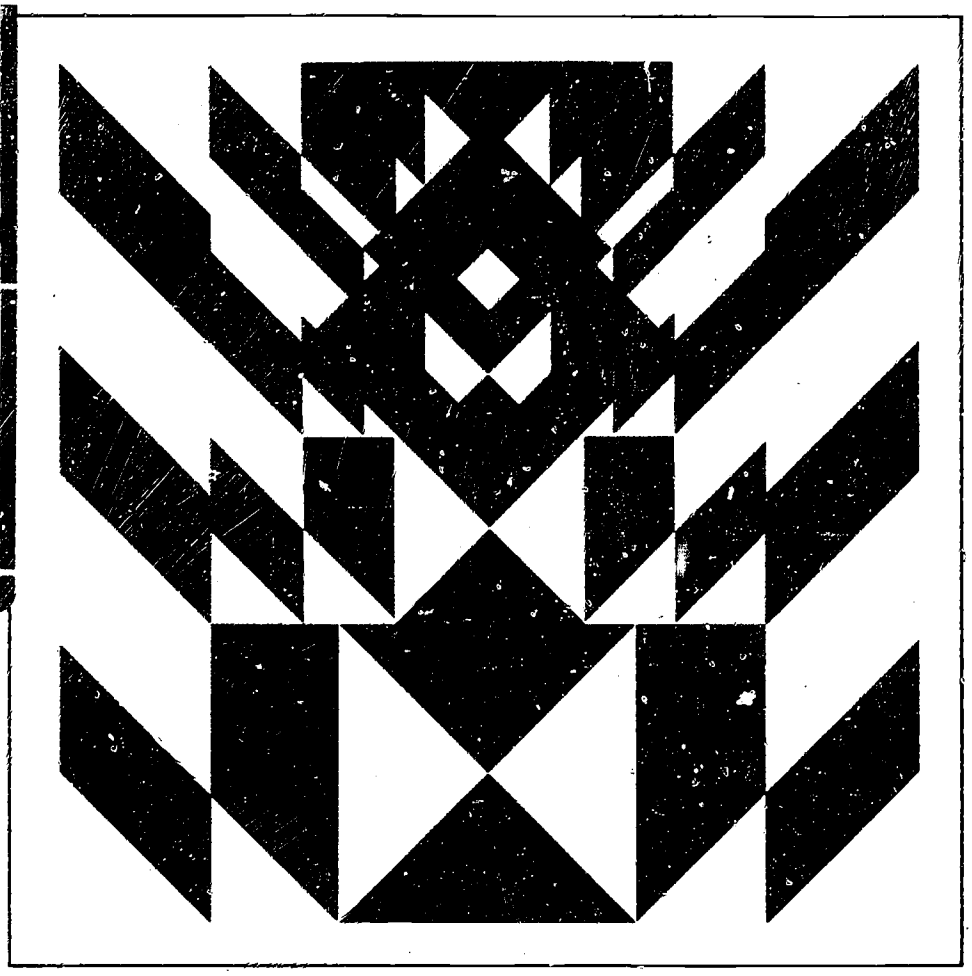
NEW DIRECTIONS FOR COMMUNITY COLLEGES

Occupational Education Today

ERIC

Number 33, 1981



ED200286
JC 810208

NEW DIRECTIONS FOR COMMUNITY COLLEGES

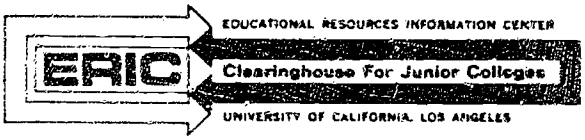
A Quarterly Sourcebook
Arthur M. Cohen, Editor-in-Chief
Florence B. Brawer, Associate Editor
Sponsored by the ERIC Clearinghouse for Junior Colleges

Number 33, 1981

Occupational Education Today

Kathleen F. Arns
Guest Editor

Jossey-Bass Inc., Publishers
San Francisco • Washington • London



OCCUPATIONAL EDUCATION TODAY
New Directions for Community Colleges
Volume IX, Number 1, 1981
Kathleen F. Arns, Guest Editor

New Directions for Community Colleges (publication number USPS 121-710) is published quarterly by Jossey-Bass Inc., Publishers, in association with the ERIC Clearinghouse for Junior Colleges. Subscriptions are available at the regular rate for institutions, libraries, and agencies of $30 for one year. Individuals may subscribe at the special professional rate of $18 for one year. *New Directions* is numbered sequentially—please order extra copies by sequential number. The volume and issue numbers above are included for the convenience of libraries.

The material in this publication was prepared pursuant to a contract with the National Institute of Education, U.S. Department of Health, Education, and Welfare. Contractors undertaking such projects under government sponsorship are encouraged to express freely their judgment in professional and technical matters. Prior to publication, the manuscript was submitted to the Center for the Study of Community Colleges for critical review and determination of professional competence. This publication has met such standards. Points of view or opinions, however, do not necessarily represent the official view or opinions of the Center for the Study of Community Colleges of the National Institute of Education.

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Subscriptions, single-issue orders, change of address notices, undelivered copies, and other correspondence should be sent to *New Directions* Subscriptions, Jossey-Bass Inc., Publishers, 433 California Street, San Francisco, California 94104.

Editorial correspondence should be sent to the Editor-in-Chief, Arthur M. Cohen, at the ERIC Clearinghouse for Junior Colleges, University of California, Los Angeles, California 90024.

Library of Congress Catalogue Card Number LC 80-84263

International Standard Serial Number ISSN 0194-3081

International Standard Book Number ISBN 87589-811-4

Cover design by Willi Baum
Manufactured in the United States of America

This publication was prepared with funding from the National Institute of Education, U.S. Department of Health, Education, and Welfare under contract no. 400-78-0038. The opinions expressed in the report do not necessarily reflect the positions or policies of NIE or HEW.

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Editor's Notes: Responding to a Changing World

Like other components of the community college, occupational education faces the challenges and the constraints of a changing world of the 1980s. The problems associated with the move from an industrial society to a high technological era are not yet comprehended. Nonetheless, some things are discernible: We are a highly mobile society; we are rapidly becoming an internationalized people; and the most significant trends in workstyle and lifestyle are barely understood. We are convinced that occupational education will play a dramatic role in the world of the future.

The emphasis and purpose of this volume is to stimulate creative thinking about occupational education: what it is, what it will become, and where it is going. The chapters that follow describe issues with which occupational educators are grappling. The authors, all professional educators, either occupational education practitioners or colleagues, present a startling mix of ideas and suggestions. When this volume was in the formative stage, authors were asked to write chapters on new directions for occupational education. The topics ranged from economic development to the role of the humanities in occupational education. It is not surprising that the chapters in this issue are so diverse. More than anything else, this diversity of subject matter underscores the number and complexity of serious concerns of occupational educators.

A synthesis of these topics reveals four central issues in occupational education: uncertain enrollment patterns, unclear future employment markets, an uneasy economic climate, and unusual partners and collaborators.

Uncertain Enrollment Patterns

It is indisputable that occupational education in postsecondary institutions has enjoyed enormous growth over the past twenty years.

This volume of *New Directions for Community Colleges* was an undertaking of the Council for Occupational Education.

This growth has precipitated a number of changes in what was historically a wood-shop/metal-shop type of vocational training. Today, postsecondary occupational education is primarily, although not exclusively, technical education consisting of a variety of specialized programs taught by top-flight professionals. These programs encompass broad occupational fields from health and engineering to public service, business, and agriculture.

Growth has brought with it changes not only in occupational offerings, but in the students as well. Today's occupational student is not a low-achieving high school graduate who cannot make it in the baccalaureate curriculums. Rather, the majority are dedicated, goal-oriented, no-nonsense individuals who are in occupational courses because they want to be there.

These two changes, the type of program and the type of student, have not been universally recognized by a large number of community college personnel. Consequently, there remains a tendency to counsel students to enroll in occupational programs and courses when the students should be counseled to take remedial or developmental courses prior to exposure to technical material. A problem arises with both the student and the counselor when the ill-prepared student fails a technical course, and neither student nor counselor understands why. With occupational programs moving more and more into sophisticated technological spheres, preparation of students takes on a new significance. Community colleges have come a long way in testing students for math, science, and communications preparedness, but have been remiss in testing occupational students for their preparedness to take technical courses.

In addition to the eighteen-year-old high school graduate, a sizable percentage of students are part time, older than the average college freshman, and inclined to take one or two courses rather than complete a total program. Women, racial and ethnic minorities, the employed, career-changers, and unemployed all fall into this category. We have given considerable lip service to serving the diverse needs of these "special" populations, conceding that these groups do have special needs. What we have yet to acknowledge is that we do not really have any "unspecial" populations: The unspecial eighteen-year-old is now a special minority. What we are really talking about when we use the term "diverse needs" are new teaching strategies, new learning-delivery systems, and new academic time frames.

Teaching strategies in all educational institutions have undergone perhaps the most dramatic change of all the components of the teaching-learning process. The age of the mentor at the blackboard is

being rapidly replaced by the electronic revolution produced by cassettes, computers, and television sets tied to satellites. The Carnegie Council views these phenomena as making classroom-type higher education increasingly obsolete. The Council cautions that when colleges fight rather then embrace the new technologies, the new learning systems are drawn into commercial channels. However, educators are not as familiar with these new teaching aids as industrial-training directors, who operate in a multibillion-dollar "industry within industries."

We must candidly admit the suspicion with which many educators view new teaching technologies. We must openly admit that we must learn how to use the new products before we can use them. We must further acknowledge the economic implications for educational institutions investing in expensive teaching apparatuses. While it becomes increasingly necessary to use every dollar wisely, we cannot overlook the potential for short-term profit, as well as long-term gain, by attracting a greater number of students through more effective teaching strategies.

Due to changes in teaching strategies, the role of the instructor will also change. More, not less, will be demanded of teachers. Technical faculty will be called on to examine their teaching environments and to identify and assess all aspects of how they teach. Faculty will need to assess scrupulously the effectiveness of current teaching strategies and determine how they can be better used, as well as how they can be adapted to other learning-delivery systems. The instructor must be free to devote more time to identifying new course and program content, evaluating the effectiveness of the teaching and learning process, guiding rather than delivering the learning, and experimenting with new teaching strategies. Maintaining faculty proficiency demands a new outlook by teachers, administrators, and school board members.

New time frames for delivering educational services must be worked out. Progress has already been made by those institutions working with open-entry/open-exit programming. These schools have discovered large segments of the population unable or unwilling to attend school in the rigidly structured academic time allotment presently in use. It is conceivable educational institutions may find that the traditional academic year as well as the 8 A.M. to 10 P.M. school day will completely disappear. Current round-the-clock industries such as media, hospitals, police and fire departments, and hotels may become models for future educational institutions. The ability to find teachers to teach during nontraditional hours will significantly change as teachers' roles change. As a result, the relationship between student and instructor will need strengthening as learning moves from personal

interaction to a more mechanical method. The hours of learning available to a student, for example, have already been altered by "canned" lessons on videotape cassettes and by correspondence courses.

Teaching contracts in educational institutions will also change. What the new contracts will be like is anybody's guess. What is clear, however, is that current teaching contracts, like the academic year and state and federal reporting requirements, lock the school system into untenable rigidity. This rigidity not only defeats its own purpose but also stimulates obsolescence by impairing the system's effectiveness and adaptability.

Standards of excellence not only must be maintained but also must be raised. Course content in occupational programs has always focused on pertinent and relevant technical material. To ensure the quality of the content, a continual reexamination of knowledge is needed for excellent on-the-job performance. This presumes soliciting opinions and expertise from those outside our educational institutions. Ultimately, this may mean that occupational instructors must go back into work settings to update their knowledge of the state of the art in a given occupational specialty. Course relevancy underscores the possible obsolescence of knowledge coupled with the dynamism and excitement of technological advances. Program relevancy requires the phasing out of programs no longer profitable. In this instance profitability is defined as the ability of the graduate to get a job in a technological society. If there is no market for the skill, there is little need for the program.

Unclear Future Employment Markets

Unlike the traditional freshman and sophomore classes in math, science, and communications, occupational courses, and therefore occupational programs, are immediately affected by the marketplace.

Occupational programs are affected by national policy (federal legislation), international policy (trade agreements and tariffs), and technological advances. For example, the Comprehensive Employment and Training Act (CETA) introduced a new set of ground rules for some students desiring entry into occupational programs in community colleges. Remedial and developmental courses and minicourses provided the appropriate entry for disadvantaged clients into some fairly sophisticated technical programs. International policy has had a profound effect on some U.S. industries, and hence on occupational programs. For example, the number of foreign cars on the American market has affected our automotive programs. Not only has met-

rics become a necessity, but servicing and repairing of foreign engines has also become increasingly important. Japanese steel production has affected at least one U.S. steelmaker—the closing of that company's steel plants will affect some community college somewhere, since a number of people will need training in new skills. We are well aware that technological advances affect our occupational programs. Word processing systems have altered secretarial science programs, minicomputers have revised data processing curriculums, microprocessors have changed electronics, and experiments of energy systems have introduced new concerns into our heating and air conditioning programs.

Occupational educators have already felt, and in large measure adjusted to, fluctuations caused by events outside the educational institutions. But there are many more to come. Genetic engineering is expected to cause changes in agriculture, drug manufacturing, and oil. The current decline in construction has affected the timber industry, and the widely fluctuating American dollar has stymied our best economists. Accountants are now talking about enlarging the scope of accountancy to include multidimensional measures of sociological as well as economic impacts of corporations. All of these events will influence occupational programs in some community colleges. The effects may be transitory and insignificant, or long-term and substantial. The number of community colleges affected will depend on the nature of local industries. The central issue is that changes in the American marketplace bring consequential changes in occupational programs in community colleges. As the rate of change in the marketplace increases, occupational administrators will need to spend increasing amounts of time gathering information outside their institutions.

Timing is one of the most important variables of incorporating changes into occupational programs. Awareness of a technological breakthrough that results in a new product raises two questions: "Will it be adopted by local industry?" and "When is the adoption likely to occur?" Right now, we are caught up in a dynamic period of rapid innovation, rapid adoption, and rapid fluctuation in training needs. We can expect these three forces to continue at least for the entire decade. How, then, do we make changes in current programs as well as introduce new programs on a timely basis?

There seems little doubt that we must start to think globally and continue to act locally. The time is long gone when a new program results from the success of a similar program in a neighboring community college, when local industries need similar or compatible skills, and when a new product requires little in the way of new training.

Recent business and industrial journals reveal a significant increase in the amount of money being spent on research and development. Companies in aerospace, chemicals, drugs, electronics, information processing, instruments, machinery, metals, and mining are heavily involved in research and development of new products and processes, which may require new skills in manufacturing, operating, and servicing. It will be up to occupational educators to be ready to prepare students with these skills.

Uneasy Economic Climate

Given the present economic uncertainty, it is probably quite safe to say that educational institutions will have less money to offer educational programs. These programs will become more sophisticated and probably more expensive, and those using technologically advanced equipment are likely to cost a great deal more and to enjoy a much shorter lifespan than occupational programs ever have in the past.

With less money and more expensive programs to consider, occupational educators will need to identify new strategies for acquiring and using funds. Thomas J. Peters (1980, p. 196) contends that there are ten outstanding industrial concerns that use essentially the same management practices: simple organizational structures, simple strategies, simple goals, and simple communications. In addition, these concerns operate on the basis of eight attributes, which, in Peters' words, "don't cost a cent" (p. 196): (1) a bias toward action, (2) simple form and lean staff, (3) continued contact with customers, (4) productivity improvement through people, (5) operational autonomy to encourage entrepreneurship, (6) stress on one key business value, (7) emphasis on doing what they know best, and (8) simultaneous loose-tight controls. These same attributes can prove useful to occupational educators as we move into an era of tighter financial controls and less financial support.

Unusual Partners and Collaborators

Any discussion of high technology, training for occupations, or education for work traditionally carries the connotation of a rigidly structured, tightly drawn, and narrowly focused curriculum. To some extent occupational curriculums have exhibited these tendencies; the trend toward narrow specialization is undeniable. In all fairness, however, the movement toward specialization has occurred as a result of management's perception of the efficiency of the division of labor.

Today, occupational educators and humanists (to name just one odd couple) are deeply concerned about the ability of narrowly educated occupational program graduates to survive in a rapidly changing environment. They worry about how these graduates will fare without some background in the ethical, historical, and cultural dimensions of technological achievement. It is one thing to be technically proficient and quite another to recognize the impact of technology on the environment and debate the ethical issues raised by certain technological advances.

Another significant area of concern involves the "internationalization" of America, that is, the increasing numbers of American technical personnel accepting jobs outside of the U.S., particularly in the Middle East. It is an important consideration in the interaction of the American worker with people of other cultures and languages that, for the most part, Americans are not multilingual. On the one hand, it is conceivable that foreign languages will very much be a part of future technical programs. On the other hand, it is also conceivable that basic courses in electronics and data processing will become integral to all courses of study, baccalaureate curriculums not excluded.

There are, of course, a number of other partners with whom occupational educators work, and also a number of collaborators. For example, governmental agencies at the local, state, and federal levels can be expected to help occupational programs act as catalysts to economic recovery and growth. Empirical research indicates that the ability to provide education and training positively influences business decisions to locate or relocate businesses.

Additionally, because we can expect a sizable decrease in revenues, community colleges will be more inclined to band together to accomplish certain mutually beneficial objectives. Loosely aligned groups of colleges, currently in existence under several different auspices, can provide the embryonic framework for the development of active working clusters whose mission is to address and solve problems as well as undertake agreed-upon activities.

In conclusion, like other community college programs, occupational education faces the challenges and constraints of a changing world. Let us hope that we meet the challenges and overcome the constraints.

Kathleen F. Arns
Guest Editor

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Kathleen F. Arns is assistant vice-president of vocational curricula at Oakton Community College, Des Plaines, Illinois, and immediate past president of the Council for Occupational Education, an affiliate of the American Association of Community and Junior Colleges.

The community college has narrowed its role as handmaiden to the senior colleges and universities and enlarged its role as handmaiden to the business, industrial, public agency, labor, and military communities.

Changing Form and Focus of Occupational Education

John F. Grede

The community college is not only the fastest-growing component of the American educational hierarchy, it is probably also the most rapidly changing element in that hierarchy. The basic shift in the community colleges over the past three decades has been in the educational mission. Implicit in this shift in the external focus of the community colleges has been a de-emphasis on liberal arts and transfer-oriented education and an emphasis on occupational and community service programs.

The national growth of occupational programs, beginning in the late 1950s, was substantial, but not necessarily homogeneous or sustained. "In the 1950s and before, a major internal debate among community college leaders was whether any occupational education should be offered in the college curriculum" (Monroe, 1972, p. 79). In Illinois the debate reached its peak in a 1960 plan (*Vocational and Technical Education in Illinois*) that deplored the slow growth of occupational programs and advocated a statewide system of ten junior colleges, largely occupational in nature, to be owned and operated by the state. The locally controlled junior colleges then in operation opposed the proposal and succeeded, in the Junior College Act of 1965, in

retaining local control but accepting the role of providing occupational education. The original Junior College Act mandated that a minimum of 15 percent of college courses would be occupational in nature, a requirement that was increased to 30 percent in 1971. Even as occupational programs were expanding toward their present majority role in community colleges, there were changes during the 1960s and 1970s in the form and focus of occupational education itself.

What we define today as occupational education began under the label of technical education, based largely on what technical institutions, many of them private, were offering in this country beginning in the early 1900s. The prime focus was on industry-type programs that were somewhat loosely identified as "less than professional." This concept of the technical institution was applied to early programs offered under the National Defense Education Act of 1958 (NDEA). There was a recognized need to encourage industrial and engineering-related programs, presumably to counter the rapid advances of the Soviet Union in space technology. This resulted in the unveiling of an intercontinental missile, followed by the successful launching of the 184-pound earth satellite, Sputnik. By the early 1960s—along with the business, secretarial, and some agricultural programs carried over from the old transfer orientation of the junior colleges—occupational efforts included the new industrial and engineering-type programs now financed in sizable degree by the federal government. These programs were defined as postsecondary, and state agencies used the term "technical" to distinguish what was being offered by two-year colleges and technical institutions from vocational education, which had a primarily high school orientation. Out of the technical education movement came the technician, who, in Charles Monroe's terms, was " . . . . a high level assistant to a professional worker" (1972, p. 83).

Postsecondary occupational education expanded from this initial, rather narrow base into the fields of health, public service, and even into the applied humanities, the creative and performing arts. Following the NDEA, federal legislation included the Vocational Education Act of 1963, the amendments of 1968, and the legislation of 1976, all of which permitted if not encouraged the broadening perspective of what postsecondary educational institutions should provide, in addition to business, secretarial, agricultural, and industrial programs. Logically, there was gradual adoption by these institutions of the all-inclusive label of occupational education. Today community colleges commonly define six areas, relatively discrete in content, that parallel major university divisions but emphasize the employment applications of the traditional areas of human knowledge more than the theoretical

and research aspects. Thus we find the areas of engineering and industry, business, health, public and human services, creative and performing arts, and applied biology and agriculture.

The career education movement, a new variant in labels sparked by Sidney Marland in the early 1970s, found ready acceptance in community college occupational education. The longitudinal character of the career education concept, beginning with career awareness and exploration in the elementary and secondary levels and adding job skill training at the postsecondary level, fits well with talk at the community college about career ladders. Community colleges did not receive much of the career education legislation funding, but they did adopt the terminology. Many programs were relabeled as career programs, and deans of career programs replaced deans of vocational-technical or occupational programs. This passing phase appears to be wearing off for postsecondary institutions, which are reverting to the older, more established occupational education terminology.

Over the past thirty years, then, community college occupational education has gone through label changes, sometimes merely reflecting a popular concept, but more often marking an expanded focus of human endeavor rather than the narrower focus emanating from technical institutes and Sputnik. There is, however, a certain self-consciousness about the term "occupational," since, like "technical," it was often used to distinguish postsecondary from secondary education. In 1974, the American Association of Community and Junior Colleges (AACJC) went so far as to institute its own legislation entitled "The Occupational Education Act of 1974" as an alternative to existing vocational education legislation. The Association further recommended that the term "occupational" be used in the future for postsecondary education (Harris and Grede, 1977, p. 68).

The expanded focus and resultant variety of job-oriented education brought about not only new labels for what community colleges did in occupational education but also alterations of the very institutional labels themselves. The expansion of the content and scope of occupational education initiated a movement out of the school and classroom and into a close and continuing relationship with the world outside. The shift to looking outside for guidance about the educational mission, and even for specifications about when and how that mission should be carried out, was marked by the rather rapid adoption in the 1960s of the term *community* rather than *junior* to identify two-year colleges. Nationally, the American Association of Junior Colleges conservatively added *community* to *junior,* while in Illinois the appropriate state agency dropped *junior* entirely and became the Illinois Community College Board.

It is clear that occupational education was the vehicle and federal funding the fuel for the new look outside. In effect, the surge of interest in the early 1960s in what was then called technical education marked the substantive shift away from the "handmaiden to the university" concept of the junior college in which faculty control of curriculum and teaching, self-generated within the institutions and inspired by emulation of the university, was the dominant theme. The growth of occupational programs sparked the change in institutional labels in recognition of the growing external focus, not on the community of scholars, but on the larger and all-inclusive one in which job entry and job mobility overshadowed graduating into the next level of the educational hierarchy.

What was important about this new and broader focus was to serve the training and educational needs of business and industry. For many faculty and some administrators who grew up in the old junior college tradition, there were initial qualms about subsidizing business and industry, as the early advocates of this broader focus were accused of doing. Sacred academic traditions appeared to be violated when courses and programs were developed to the specifications of private employers. Such action seemed to reject the traditional role of higher education as the free-wheeling critic of the private sector of the American economy. The concept of open enrollment, the very cornerstone of the junior and community college movement, was viewed by some as empty rhetoric when classes were offered at company locations, taught by company personnel, tailored to company requirements, yet offered under the umbrella of a tax-supported institution. Some alleged this was even illegal.

The transition to embracing business and industry as an integral and deserving component of the community was made easier by providing job training programs for the public sector. Somehow, working directly to provide needed training and education for city, county, state, and federal employees did not arouse the same kind of emotional resistance. In the middle 1960s, the City University of New York (CUNY) system's John Jay School of Public Administration and Chicago's Public Service Institute at the Loop College readily developed a successful marriage with government agencies and employees. Other institutions developed law enforcement, fire science, and a host of conventional business and secretarial programs to help kindred public agencies with their training needs; and there was little outspoken criticism.

From the early, rather tentative approaches to business and industry, often embracing little more than advisory committee input,

the shift has been substantial and today appears to embrace completely and enthusiastically a full range of relationships with the private sector. Included are cooperative education programs in which students combine planned work experience with conventional classroom, shop, and laboratory classes. The work-experience process, commonly applied to apprenticeship programs sponsored by an employer or labor union, is now applied to technician and midmanagerial positions. An even broader relationship is marked by the growth of what may be termed contracted in-service programs, in which community colleges provide a needs analysis of company employee training requirements, implement training with instructors from the college or the company, and then add status to the process by granting academic credit. The company may provide additional incentives by granting release time and opening promotional opportunities for those taking advantage of training. A number of large private enterprises, rather than working directly with community colleges in planning and implementing their in-service programs, have had those programs evaluated for recommended college credit by the American Council on Education's Office of Educational Credit. The national guide produced by this office lists private sector employers throughout the country, with appropriate credit recommendations for their in-service courses.

The ultimate in business-education relationships appears in South Carolina, where the state's vocational agency, in cooperation with sixteen technical institutes, encourages industry to locate in the state by training new employees in the specific requirements of the industry. Some relationships with business and industry are as simple as offering basic literacy classes on company sites to assist non- or limited-English-speakers to read and understand work rules, safety regulations, and bulletin board materials. Cooperatively developed job placement services vital to both the employer and community college have produced such imaginative and sophisticated arrangements as the Southwestern Michigan Job Bank, which links a number of community colleges into a consolidated job vacancy source. Even in the well-funded Comprehensive Employment and Training Act (CETA) program, the disappointing rate of public service employees entering private employment has been identified as a community college target. Programs are expanding to help train the unemployed for sustained private employment and to assist them in finding and holding private sector jobs. In this effort community colleges are beginning to work cooperatively with private industry councils (PIC), now funded under CETA, in providing the job skills and basic education essential for obtaining and holding jobs.

Involvement of postsecondary educational institutions with business and industry thus has moved full circle. The American Association of Community and Junior Colleges, along with the American Vocational Association (AVA) and the American Society for Training and Development (ASTD)—the latter embracing nationwide some 36,000 private training officials in 114 chapters—met together in the middle of March 1980 at the Wingspread Foundation in Racine, Wisconsin. Out of this gathering came the recognition of the need for public educational institutions and private business, industry, and labor unions to join forces in cooperative pursuit of such national goals as increased productivity and more economic and efficient training to fill critical national needs in skilled-job areas. Whether these three associations can commit their constituencies to those goals and required cooperation remains to be seen, but the commitment of public education to serve individuals by serving business, industry, and labor was outspoken and uncontested.

The extended hand to labor has been slower to emerge, and commonly the relationship, where established, has been with large unions with their own education units. Programs in labor studies designed to prepare personnel for the emerging permanent and professional positions within organized labor have been effected, but not on a large scale, and apparently more in four-year than in two-year institutions. Apprentice programs still represent a major point of contact between postsecondary occupational education and labor unions. Of growing interest are the basic literacy and consumer competence offerings under the community service and continuing education label. These provide either prerequisites to employment or more effective use of the dollars derived from employment.

One additional involvement of the community colleges has been with the military, for which community colleges and other postsecondary institutions have developed programs ranging from basic literacy to full-degree offerings in occupational education. These programs are in close cooperation with officers of educational services on or near Army posts, Air Force bases, and other military installations in the United States and abroad. Recent contracts with the Navy have extended programs to ships at sea. Formalization and leadership for many of these programs at the national level have been provided through the Servicemembers' Opportunity Colleges (SOC), established in 1972, which today comprise a network of about 400 postsecondary institutions working closely with the military.

The comprehensive thrust of the 1960s, substantially a product of the postsecondary occupational education expansion, was accom-

panied by a diversity of clientele. The old junior college focused on the relatively homogeneous young high school graduates of an academic bent who could not afford to go away to college. The job-oriented thrust of the community college changed the clientele, or perhaps the new clientele changed the college. It is undoubtedly true that occupational programs and older employed family-type students reinforced one another. Virtually all diverse groups now comprising community college constituencies had similar impacts. Special needs for language help and increased support services had to be met, of course; but the common bond, the recognized attraction, was a chance for a better life, and the good life often began with a good job. For all adults—including racial and ethnic minorities, disadvantaged, unemployed, handicapped, displaced homemakers, functional illiterates, incarcerated, mobile and migratory persons, foreign students and senior citizens—the occupational aspect of the comprehensive mission of the community college offered an attractive possibility of training. Without it there probably would not have been the diverse populations knocking on our doors.

Finally, growing occupational programs not only have changed in form and focus but have strongly influenced the culture and climate of postsecondary institutions, particularly community colleges. Four basic aspects of community college structure and function reflect the profound influence of occupational education: curriculum, instruction, support services, and institutional organization. Collectively, the evolution of these four aspects is creating today an institution substantially different from that of three decades ago.

Curriculum changes are rather obvious. Orientation toward the world of work requires that substantial or primary control of what is learned, and possibly even how it is learned, be removed from the institution and its personnel, largely faculty. The educational program does not then differ radically from in-service training provided by business and industry for its employees. This is a different concept for faculty and administration to accept, yet in one sense it merely substitutes service to business, industry, labor, and the military for service to the senior collegiate institutions. In the process, the traditional academic pyramid is inverted. General education becomes supportive to the career focus of the student rather than remaining the primary focus, as it was when students were broadly prepared with the prerequisites for senior college specialization.

Instruction in the occupational mode, particularly when applied to the diverse populations oriented toward job preparation and mobility, requires objective outcomes that essentially represent the skills and

attitudes needed for success on the job. The student actually doing the task, rather than the student possessing unapplied knowledge about the task, is a cornerstone of what is called competency-based occupational education. The diversity of interests and learning styles that accompanies the greater age range and heterogeneous backgrounds of today's more mature community college students calls for individualized instruction with less emphasis on time frames. The effective process is an interactive one not limited to teacher-student relations, but one that includes student-to-student interactions at the learning site. These four components—acquiring skills, performing tasks, receiving individualized training, and interacting with others—increasingly characterize occupational education instruction. In a real sense instruction in occupational areas has initiated and implemented much of the instructional change now occurring in community colleges.

Support services for students are varied in kind more than in degree from the old junior college era. Not only do they provide financial aid, a product of escalating costs and less affluent clientele, but they also provide career-oriented information, give occupational guidance and counseling, seek out students whose cultural and personal backgrounds encourage reticence, match students with programs and monitor progress, place students in jobs, and follow up with both students and employers—all these are essential ingredients quite distinct from the academic and personal counseling of the past.

Finally, the very organization of the institution has been seriously affected. The dean of occupational programs, or an administrator with a comparable title, has risen to a position of influence, although generally not to a position of reporting directly to the chief executive officer. Program coordinators have created a new dimension of supervision between department chairpersons and classroom teachers. New approaches to faculty organization have been evolving in response to the occupational emphasis. Divisional structures have emerged with occupational titles, but organized around content areas that really represent the applied aspects of traditional academic areas. A representative group of six would include: (1) engineering and industrial, (2) business and secretarial, (3) health, (4) public and human services, (5) creative and performing arts, and (6) applied biology and agriculture.

Although reminiscent of schools and colleges in the university organization, these divisions represent a distinct shift from the many discipline-oriented departments characteristic of earlier junior college organizations, which often resisted occupational programs. Where the old departments have remained, new occupationally oriented departments have emerged. Nursing is a prime example of the newer pro-

gram-oriented department, which is not just a grouping of faculty interested in a particular discipline, but a tightly knit structure of faculty, students, and theoretical and applied content, all geared to job competency.

In review, occupational education has changed in form and focus while it has substantially altered the climate and culture of the community college itself. Occupational education emerged from a junior college, transfer-oriented, liberal arts base, which delayed and resisted the full flowering of occupational education more than it helped. The major growth period, beginning in 1958, saw shifts in what job-oriented education was called. The labels vocational, technical, career, and occupational education have all had their uses, but postsecondary education has pretty much settled on occupational.

Along with changing labels, the focus of occupational education has shifted from the early emphasis on business, secretarial, and industrial-related programs to embrace the applied and employable aspects of the entire spectrum of human knowledge—a far cry from the low-status, "dirty hands" image of early vocational education.

The instructional program expansion, sparked by the occupational thrust, gave initial substance to the term "comprehensive," a cherished designator virtually inseparable today from the term "community college." But, besides becoming comprehensive, the community college turned outward, perhaps most importantly toward the private sector of business and industry. First the approaches were hesitant, but they produced a broad and expanding base of interrelationships and what appears to be full and enthusiastic support from major national representatives of business and industry, on the one hand, and vocational and occupational educators, on the other. The outward thrust of community college occupational programs expanded rapidly in the middle 1960s, not only to business and industry but also to public agency training needs at city, county, state, and federal levels. Somewhat later, programs in direct support of labor union needs were added, and, most recently, programs with the military.

The occupational growth in community colleges not only found its strength and direction in relating to the outside world but also was a prime attraction helping to draw to the community college the diverse populations—working adults seeking upgrading and updating for job retention and job mobility, Indo-Chinese and Korean immigrants wanting language skills integrated with job training in a bilingual context, unemployed young Blacks and Hispanics preparing for jobs through CETA institutional training and conventional college occupational programs, displaced homemakers needing job skills to replace their

homebound skills on which they can depend no longer, handicapped persons searching for self-supporting skills, the incarcerated looking for a new start and a job, and the functionally illiterate lacking the basic verbal and number skills to prepare for job training and resulting employment.

Occupational education has substantially taken over the community college and represents the essence of comprehensiveness in terms of serving the broadly defined community through organizations and through diverse individuals. In many localities, however, it has yet to acquire the requisite conversion of the institutional culture. Funding patterns often continue to emphasize retention of what has been, faculty organization in traditional departments reinforces the primacy of the academic disciplines, collective bargaining contracts retain salary schedules based largely on degrees, and outmoded student support services are slow to provide career-oriented services such as job placement. Often course enrollments are on a "pick-and-choose" basis with only token admission to a particular program. Resistance to competency-oriented instruction continues, paucity of follow-up information on completers and noncompleters limits effectiveness, and indifference to data on community and national needs makes planning and implementation unrealistic.

This is a partial list of resistances to occupational programs, enough to discourage progress toward comprehensiveness. It is indeed a compliment to the persistence and ingenuity of occupational education administrators and faculty that progress has been as great as it has been.

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Are community colleges on the verge of a decade of vitality? Many forces are in motion that suggest a prominent role for community colleges, especially occupational education, in whatever ails America today.

Challenges Facing Community Colleges in the 1980s

Andrew S. Korim

As we look at the emergence of the decade of the 1980s, the prior three decades represent an era of expansion of the comprehensive community dimensions of the mission of community colleges. In this period community colleges demonstrated their unique delivery capabilities. From the philosophical base of community colleges developed in the 1950s, a surge of interest in community colleges characterized the 1960s. State legislators passed legislation to permit locally controlled community colleges to be created in great numbers. This legislation created the power of taxation for community college districts in state after state. Local economic interests saw the community college as a stable source of human resources needed for economic vitality.

The 1960s included the passage of national legislation for manpower development and training, vocational education, expansion of economic opportunity, a national housing program, older-American services, comprehensive health programs, and crime control programs—all of which created both opportunities and obligations for community colleges. It was in the 1960s that community colleges joined into part-

nerships with communities to address community problems. The relationship of community colleges to community benefit was realized. The dollar resources needed for community colleges to emerge and grow were easy to come by from direct taxation and other sources as all of these factors converged

To a great extent, the early 1970s had much of this momentum, but before that decade was over, it became clear to those more closely in tune with community colleges that difficult times were ahead. There was no national community college act, local bond promotions were increasingly unsuccessful, state control over community colleges was on the increase, other institutions of education such as the secondary schools, vocational schools, and the four-year colleges saw the effectiveness of community colleges as a threat to their own well-being, taxpayers became disenchanted with all public financial enterprises, and the flow of students from high schools began to decline. These negative developments caused community college leaders to lose much of their confidence, and as the 1970s came to a close, it became clear that more was lost than was gained.

An Unlimited Market Ahead

Are community colleges on the verge of a decade of vitality? On the one hand, the fiscal situation for community colleges looks grim, especially in view of the condition of the American economy and the obvious suspicion that the American taxpayer has for much that is financed through taxation. On the other hand, many forces of change are in motion that suggest a prominent role for community colleges in correcting whatever ails America today.

Numerous industrial, agricultural, and commercial trends and innovations represent unmet demands for training and education. Among these are the decline in productivity and competitiveness of key American industries, the obvious technological gaps reflected in such events as the recent radioactive hydrogen bubble at the Three Mile Island nuclear facility, and the prospects of extraordinary economic activity in the exploration of space and the earth's oceans.

Profound changes in social values, life styles, and the human condition represent implications for education. Attitudes regarding the work ethic, the growth of a drug culture among teenagers, increased social unrest, and increased criminal activity are primary examples of these changes.

The impact of these opportunities, gaps, and problems will manifest itself in new processes, products, and services and will represent a

need for trained and retrained personnel, as well as changes in the way such training takes place. If the past is any indication, the bulk of the education and training will address the need for middle-level personnel, technicians, paraprofessionals, and managers, which falls squarely within the scope of community colleges.

The poorly educated adult, the unemployed college graduate, and the technologically displaced professional will continue to be key target populations for community colleges in the future. Persons forced out of productive roles by performance standards, obsolescence of technical skills, and legislated requirements associated with social reforms, environmental protection, and occupational safety are high-need persons.

A decade ago, Knoell (1970) identified persons in need of educational services beyond high school and suggested improvements in methodology to create and to expand educational opportunities. Community colleges have made progress in providing options to those out of the traditional college market, but much of Knoell's study still applies today. Unfortunately, community colleges have not introduced enough substantive changes to properly supply the needed educational services.

These conditions and trends create an unlimited market for community college services. The education and training needs in the decade ahead will be varied. Obviously, educational services must necessarily take new forms and will require new staffing patterns.

To meet the changing demand, the entry-exit-reentry process must be assessed and improved, with emphasis on upgrading the quality of educational services. Instruction must become more individualized and packaged to fit the needs of students and employers and not the convenience of the faculty or the institution. Only a few colleges can accommodate students with variable entry and exit today, leaving this dimension of college operations wide open for innovations.

Contrary to the fears of doom expressed at many conferences, if community colleges respond to the unmet and changing educational needs associated with American socioeconomic opportunities, problems, and goals, a limitless market for their services will exist. Although the prophets of doom are guided by the shortage of fiscal resources, their pessimism is alien to the character of community college leadership. The American public will turn to other alternatives if the community colleges are unable to shake the influence of the gloomy prophecies.

Making Open Admissions Meaningful

Much of the literature identifies open admission as the unique characteristic of community colleges that distinguishes them from tra-

ditional institutions of higher education. Yet open admissions in community colleges has been more an ideal than a reality. Harris and Grede (1977, p. 37) bring the challenge into focus: "The issue here is not whether academically underqualified students should be admitted to college—that step has already been taken. Equalitarianism and meritocracy are in a continual tug of war on many fronts, but in the arena of college admissions equalitarian ideas have won the day. Community colleges are committed to open access, to the second chance, and to the 'late bloomer.' It should be emphasized strongly, moreover, that this must not be a hollow commitment. Having made the commitment, community colleges must do their utmost to render it meaningful."

The full development of a methodology commensurate with the demands of open admissions has never been achieved. Intake processes have been deficient. A full diagnosis of deficiencies has been resisted. Shortcuts in corrective prescriptions have been common practice. The added costs associated with services for the deficiency differences have remained concealed.

In the decade of the 1980s community colleges must deal with open admissions aggressively and creatively. A huge backlog of nearly illiterate adults constitutes a major challenge for us. For a myriad of reasons, our elementary and secondary schools, in spite of billions of dollars of expenditures, generate a high percentage of functionally illiterate persons, which has negative implications for citizenship, community vitality, national productivity, and the quality of life of such individuals. Almost one-fourth of the high school students do not complete high school. Many persons who graduate from high school are not prepared to enter adulthood with problem-solving skills or the capacity to cope with the routines of our socioeconomic processes. Much of what is taught in high school goes on and on without success, producing functionally backward adults.

Pressures for universal literacy standards will lead to a total renovation of elementary and secondary school systems. However, before the situation improves, it will require considerable research of learning technology. Clearly, during the decade of the 1980s, adults will turn to community colleges for remediation of basic literacy education, occupational preparation, and general educational services denied them otherwise. Are there other options? There may be, but the community colleges are without doubt the one vehicle adults may turn to in meeting their needs. Until some breakthroughs occur, literacy skills by adults will be acquired as an integral part of their pursuit of occupational preparation. Much of the cost of such combined literacy and occupational skill development will be covered by employers who will justify this activity as a measure to increase productivity.

Integration of Noncollegiate and Collegiate Learning

Human resources development has not been confined to formal educational settings. Increasingly, it has been clear to educators that learning occurs in many settings outside the control of schools, colleges, and universities. The integration of noncollegiate and collegiate learning remains fertile territory for community colleges.

The American Council on Education (1979) has served to facilitate granting credit for courses in noncollegiate settings. The 1979 edition of *The National Guide to Credit Recommendations for Noncollegiate Courses* contains credit recommendations for programs sponsored by eighty noncollegiate organizations. Ten years ago it would have been unimaginable to anticipate that such an inventory of credit recommendation could be promoted by the American Council on Education.

The actual awarding of collegiate credit based on military experience, apprenticeship training, corporate training, and experience in the world of work has been resisted. According to Warren (1978, p. 70), the awarding of credit for experience outside traditional educational settings is comparatively rare but also growing.

The problem seems to be that such credit reduces the number of degree credits to be earned at the institution and reduces actual enrollments in specified required courses. Also, some critics raise questions of the impact on the quality of such learning. Yet the granting of credit for external learning does not preclude qualitative controls over the practice of awarding such credit.

According to Abbott (1977, p. 27), the awarding of college credit for apprenticeship training is a "burgeoning idea," although there is some resistance. Based on a nationwide survey of two-year colleges, 81.8 percent of the colleges that responded indicated that they wanted to work with unions.

Should community colleges succeed in integrating noncollegiate and collegiate learning on a massive scale, no other achievement of community colleges could be of greater value to society.

Interlocking Partnerships Are Imminent

Distressingly for us in education, a growing segment of our society believes the educational system is in serious difficulty and considers education ... one of our national problems no less in need of attention than the energy crisis or environmental problems. Consequently, the very structure of education may be expected to change drastically in the next decade. New organizational forms for mobilizing educational resources and delivering community benefits will most likely emerge.

To a great extent, these developments will come about through the formation of new alliances. Some will be simple in form. Others will be corporate complexes or multilateral compacts.

Community colleges have had considerable experience in combining the capabilities of governmental agencies, neighboring educational institutions, volunteer organizations, and proprietary interests with those of the community college, giving them a sizable advantage in the educational community. Arrangements with neighboring educational institutions are becoming common practices to serve unserved needs, reduce possibilities of duplication, enhance articulation with vocational education schools and other noncollegiate training purveyors, and avoid the need for construction of new facilities.

Today, interest is growing in the concept of a community college that has no faculty or campus but has contracts with several existing institutions (public, proprietary, liberal arts, nonprofit, vocational) to provide students with a comprehensive array of services. Teachers are employed only if services are not available from existing institutions or community enterprises. In my opinion, these arrangements will become increasingly popular among community college trustees. Major problems associated with the management of such educational conglomerates, control of curriculum, the rate at which services should be purchased, legal complexities, and the evaluation of outcomes, however, will require new administrative units and new staffing patterns.

Local planning in the future by all community colleges will by necessity place more and more emphasis on the use of the resources of business, industry, and community agencies as cost-saving and quality-improvement measures. Rather than duplicate resources in the community, colleges will expand the practice of leasing production facilities for instructional use during off hours and purchasing the time of technically competent supervisory personnel for services rendered in teaching students refined skills at the work site. These contractual arrangements will become an integral part of the plans of community college districts. Community agencies will increasingly serve as learning situations through which students provide services while receiving training.

Participating colleges will need to design a mechanism to synchronize the use of existing college resources with the resources of the work site, to provide data needed to determine adequate rates of compensation for these services, and to work out the intricacies of administrative control. Principals of these arrangements will be manufacturing firms, financial institutions, labor unions, private social service agen-

cies, and governmental agencies, among others. The experiences we have gained under apprenticeship training and traditional cooperative education arrangements will be helpful in these expanded ventures.

A New Profile for Community Colleges

The trend of interlocking arrangements and other forms of collaboration between education and noneducation institutions promises to modify the profile of community colleges in the decade ahead. Integration with the noncollegiate sector will vary considerably from community to community. As specific forms of integration are implemented, the line between the community college and the external community will largely disappear in time.

In the next few years, we undoubtedly will find commonplace variations of the following forms of integration that will generate new parameters of community college operations:

1. Short-cycle contract training to improve the productivity of personnel from private employers, government agencies, and community organizations.

2. Educational, industrial, and governmental personnel exchanges to capitalize on the expertise of each and to facilitate the transfer of technical knowledge.

3. Horizontal integration between educational and noneducational segments, like that reflected in work-education councils established by a limited number of community colleges.

4. Contracts to provide regular credit equivalency arrangements with the training programs of professional organizations, such as the American Institute of Banking, the Insurance Institute of America, and other organizations that operate professional development programs.

5. Compacts with labor unions, employers, and trade associations for apprenticeship training and other apprenticeship arrangements, such as the associate degree program of the American Automobile Dealers Association.

6. Pooling of the training resources of the military establishment and civilian education and training operations to increase the total national education and training output and to foster the transition of trained personnel through the combined civilian-military labor market, such as that represented in the activities of the Aerospace Education Foundation.

7. Purchase of instructional services and leasing of equipped facilities from manufacturing and commercial enterprises, especially in areas of high technology and rapid obsolescence of equipment.

Our great challenge will be to make work and community service inseparable from education and to change our perception of the parameters of education. In the process, a new liberal arts will emerge, less esoteric than the classical liberal arts, but more closely related to practical problem solving for personal benefit, occupational survival skills, and community vitality. With these developments, the community college will not remain static for long.

Supportive Services Consistent with the Future

In a recent report, the Carnegie Council on Policy Studies in Higher Education (1979, p. 6) reported that services ranging from job placements to compensatory education to advising were perceived by students as inadequate. In particular, the study found that 33 percent of students who have used career advising rate it inadequate. Academic advising did not come off much better, with 27 percent of the students rating it as inadequate.

The challenge is clear. Supportive services must be revamped. Areas that continue to be neglected are:

- Outreach and intake operations consistent with the stated commitments.
- Diagnostic services consistent with open admissions.
- Corrective and developmental services to reflect needs of persons with basic skill deficiencies.
- Vocational guidance, career planning, job placement, and career support services.
- Institutional research focused on data for management decisions.

Assessment of prior experience and nontraditonal training must be an integral function of the support service system of a community college. Equivalency measures by necessity will have to become quite intricate to encompass the range of external learning that goes on in the normal process of work, community service, and life generally.

A student accounting system capable of maintaining an active file on heterogeneous students over a prolonged period of time is essential in response to the lifelong learning character of today's students. An accurate and timely record of the status and progress of students with deficiencies is an integral part of an open admissions institution. A single student record of credit hours and continuing education units will be a critical feature of community colleges as less distinction between courses for traditional credit and noncredit is made by employers, certification agencies, and professional organizations.

The great prospects ahead for community colleges will go unrealized if a comprehensive support system goes undeveloped.

New Focus on National Advocacy

National community college advocacy has declined progressively over the last several years. What has happened to the advocacy in recent years is difficult to analyze.

Some years ago it was observed that almost every congressional district had at least one community college. Somehow this observation was intended to mean that one or more members of Congress had a vested interest in the vitality of the community colleges and that enhancement of the community colleges in the home district meant serving the constituency back home. Obviously, this logic can be carried a long way, and, in fact, it seemed to work for a number of years.

The Education Amendments of 1972 promised great developments with the passage of Title X and the creation of the Community College Unit. Title X, however, had no muscle. The Community College Unit had no resources and was poorly staffed. Internal debate in the Office of Education over the role of the Community College Unit produced virtually an ineffectual operation and no advocacy in the federal establishment.

It may be that community colleges have had difficulty documenting community benefits, even though almost everyone agrees that there has been great benefit. The absence of a national index of community college output has no doubt contributed to a softness in national promotion of the community college idea. The American Association of Community and Junior Colleges has produced only superficial measures of performance of the national network of community colleges.

If, in fact, community colleges have done an outstanding job but have been unable to provide statistical support of the claim of direct economic and social benefit, then the future requires a commitment to institutional research and better research nationally. If this cannot be done, then the community college will be in no better position than the rest of American education and will experience a similar decline in public support.

A resurgence of interest in national legislation for community colleges is needed. Community colleges will find it in their interest to organize a national legislative program to correct the deficiencies and failures of prior legislation affecting community colleges. If the virtues of the community colleges become fully understood by the members of Congress, a broad base of sponsorship could materialize.

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Increasingly, community colleges are being viewed as vehicles to solve some of the nation's most pressing problems in occupational education. Community colleges will be faced with difficult decisions about their commitment to occupational education and their roles in an uncertain decade

Occupational Education in Community Colleges for the 1980s

Lawrence F. Davenport

Predictions about the role of community colleges in the 1980s are generally of two schools of thought and reflect the frustration and uncertainty of the times. Both points of view recognize the potential for continued inflation, steadily increasing unrest among taxpayers, and tightening of availability and controls on the use of funds. However, the generally accepted view holds that, of all educational sectors, community colleges are the most likely to thrive in coming years. The primary basis of this optimistic outlook is the National Center for Education Statistics (Scully, 1980) projection that community college enrollments will increase by 54 percent from 1976 to 1986. Most of this increase is expected to comprise adult part-time students.

The opposing view forecasts "a volatile decade for community colleges" (Scully, 1980, p. 6). Proponents of this viewpoint argue that community colleges can expect increased competition from four-year institutions for transfer-oriented students and from other educational institutions for adult part-time students, particularly from university extension programs. They also anticipate increased unwillingness of

local, state, and federal governments to subsidize adult remedial education offered by community colleges, preferring instead to concentrate resources for that purpose in the secondary schools. However, proponents of this view hold that vocational-technical programs seem reasonably secure, but there is a risk that the comprehensive community college mission may be lost, with the colleges becoming essentially technical institutes. Breneman and Nelson (1980) sum up this point of view: "In short, community colleges seem to face the most volatile future, in which the very nature of the institution may change; there is no reason to believe they will emerge unscathed from the next decade."

Occupational Education and Comprehensive Community College Missions

Traditionally, occupational education programs have been viewed as academically inferior to other programs. The occupational education student has been looked upon as less capable of scholarly pursuits, less intelligent, less serious, and not of the same caliber as the transfer-oriented student. Occupational education instructors and administrators were viewed in much the same light.

Although enrollments in occupational education programs have grown nationally from 12 percent to 50 percent of the total enrollment in community colleges over the past twenty years (Hayward, 1980), many of these stereotypes persist. Continued growth in occupational education progams, while enrollments in other areas dwindle, can be expected to create tensions that will intensify stereotyping.

As with most stereotypes, those surrounding occupational education deal in generalities and are self-perpetuating. Occupational education progams and faculties are generally segregated from other areas—in some cases even separate campuses are provided. Interaction with non-occupational education faculty is frequently limited, and often certificate requirements for occupational education instructors are different from those for faculty in other areas; for example, giving credit for practical experience and requiring less formal education of occupational education instructors. In some cases, reduced educational requirements translate into a separate and reduced salary schedule for occupational education instructors. Even in institutions that do not maintain separate salary scales, the lower education requirements and credit for work experience can cause tension. For example, liberal arts instructors required to hold master's degrees may also have work experience in their fields, such as social work, but are not allowed credit for that experience in determining placement on the salary scale, while occupa-

tional education instructors with two years of college and five years work experience are placed on the same step of the salary schedule.

The measures of competence (educational attainment level and salary) reinforce the premise that occupational education faculty are inferior to other faculty. Incentives to encourage occupational education faculty toward advanced educational attainment are not always built into the system. During the 1980s community colleges may face difficult decisions regarding their missions and, in fact, their very survival, and occupational educators must be prepared to overcome these stereotypes and assume equal status in the college community, for increasing enrollments are not a guarantee of security in terms of program quality.

If occupational educators do not participate fully in institutional planning and budget development, funds generated by occupational education enrollments may well be used to support other areas at the expense of class size, equipment, and facilities required to support increased occupational enrollments. This does not mean that occupational education enrollments should not support programs in other areas to some degree, but care must be taken that stereotypes about occupational education do not influence educational planners to underestimate the requirements and costs of quality occupational education programs.

To that end, occupational educators must increase interaction with other faculty. We must ensure that occupational educators are appropriately represented on faculty senates and that other faculty are aware of the goals, academic requirements, and problems in occupational education. It is important that community college leaders be aware of issues in all areas.

A conscious effort should be made to promote occupational educators and a career ladder should be developed to remove their second-class status. If it is necessary to maintain lower educational requirements, especially degree requirements, to hire instructors who have the requisite level of technical knowledge, then these requirements should be brought up to the same standards as those required for the general education faculty. The occupational educator's salary schedule should be merged with that of instructors in other areas after a requisite level of education has been achieved. Thus another factor that has supported the segregation of occupational education faculty will have been removed.

We must recognize that focus on occupational training alone is not sufficient, since students must not only be competent in an occupational area but must also be able to understand and participate fully in

the world around them. Our programs must provide students with life skills as well as occupational skills. Because the average person will change careers at least three times, our programs must be broad enough to assist students in acquiring the basic skills and knowledge necessary for informed decision making.

Occupational educators must also look for means of using other faculty to enhance occupational education programs. Our degree and certificate requirements should not only include non-occupational education courses but also ensure that the standards governing content and expected performance of students in these courses are not lowered. The enrollment trends and problems facing community colleges in the 1980s do not have to mean the end of the comprehensive community college. However, they should mean the end to separate and unequal status for occupational educators.

Community Colleges Solving Critical Problems in Occupational Education and Manpower Training

"The lack of manpower policies at the federal, state, and local levels has resulted in a hodgepodge of programs which have been neither comprehensive in meeting occupational demands nor effective in developing human resources—the only source of manpower" (Venn, 1970, p. 4).

In the ten years since Grant Venn made this statement, the major change has been in magnitude; that is, more programs, more studies, more agencies, more paper—in effect, more "hodgepodge."

When asked which federal departments offer occupational education, most people would answer the Department of Education and the Department of Labor. However, the Department of Defense, the Department of Agriculture, and other agencies also offer occupational programs. Each operates its programs independently of the other, creating increasing complexity. The complexity is reflected in the absurdly intricate management charts exhibited in many federal and state agencies.

The Congress also periodically gets involved. Recognizing the need to get a handle on the myriad of programs designed to implement the Vocational Education Act of 1963, the Comprehensive Employment and Training Act of 1973, and the various state and postsecondary commissions, Congress enacted Title V, Section 523 (B) of the Education Amendments of 1976 (P.L. 94-482), which charges the National Institute of Education (NIE) with undertaking a thorough study (David, 1979, p. 1) to include:

1. The distribution of vocational education funds in terms of services, occupations, target populations, enrollments, and governmental levels, and what such distribution should be, in order to meet the greatest human resource needs for the next ten years.

2. An examination of how to achieve compliance with, and enforcement of, the provisions of applicable laws of the United States.

3. An analysis of the means of assessing program quality and effectiveness.

4. A review and evaluation of the effectiveness of programs funded under Subpart A of the Vocational Education Act of 1963 (which contains the Consumer and Homemaking education provisions of the law).

The study is targeted for completion by September 30, 1981, with an interim report submitted on September 30, 1980. Although such a study could provide a solid data base on which to build a national manpower policy, it is interesting to note that Congress included the following charge to the Federal Interagency Committee on Education in Section 214 of the Department of Education Organization Act (David, 1979, p. 21): "Conduct a study concerning the progress, effectiveness and accomplishments of federal vocational education and training programs, and the need for improved coordination between all federally funded vocational education and training programs." That report is to be submitted "to the Secretary and the Congress within two years of the date of the enactment of . . . [the] Act," that is, in September 1981.

Thus two studies with similar charges due to be completed on the same date have been ordered. This raises questions as to whether the two studies are working together, using the same data bases, or sharing data. Additional concerns include the anticipated benefit of conducting two studies and the possibility that the second study was a duplication of the first.

It is quite possible that both studies could review the same data and reach startlingly different conclusions. A major reason for this is that there is no standard definition of vocational education and training. Each department operates under its own definition and each collects and interprets data based on its definition. In any event, the end result will be two studies without promise of immediate action on the problems identified.

Augustus Hawkins made the following recommendations in 1972:

1 Combine education and "manpower" into one national education-human power policy with the Office of Education playing a major role.

2. Humanize the education and employment system by abolishing irrelevant curriculums, useless credentials, false professionalism, and derogatory labels.

3. Put real money behind our policies instead of underfunding them as "pilot" programs, new studies, or mere "programs to help the neediest"—which have become techniques to rationalize low-quality programming and to limit federal spending.

As we enter a new decade, community colleges are increasingly being hailed as institutions that could solve many of these problems and help accomplish such goals as those advanced by Hawkins. The Carnegie Council on Education recently recommended that community colleges should take primary responsibility to provide job preparation and placement services, apprenticeship programs in private industry, referrals to CETA programs, and new work-study programs. While describing the community colleges as "the most protean, the most plastic, and the most mobile of all the institutions of higher education," Clark Kerr (1980) recently urged community colleges to operate as employment centers for unemployed high school drop-outs.

Reactions of community colleges will vary from enthusiastic support of the Carnegie Council recommendations to total rejection of such ideas. However, it is clear that the characteristics that make community colleges unique are the very qualities needed to bring coordination to manpower policy development and implementation.

Community colleges have long been recognized as effective in meeting the needs of their communities, but, more importantly, their cost-effectiveness is well known. They are established institutions, are located throughout the country, and have core staffs that can be expanded or reduced according to need. Community colleges have long exhibited a high degree of flexibility in providing programs to meet ever changing community needs and interests.

Use of the community colleges as the occupational education and placement agencies for government funded programs would not only be cost effective but would also bring continuity and stability to federally and state-funded programs. Because the community colleges are established institutions, the core staff remains in place; therefore, each new program would not mean employment of an entirely new group of people. Experience in previous programs could be drawn upon in planning and implementing new programs. The stability of established programs and institutions would mean that participants who were unable to complete the program will remain as participants and, if in need of further assistance, could be directed to other programs offered by the college.

Because a new government agency would no longer be required for each new program, the administrative overhead of programs could be greatly reduced, and more funds would then be available to augment the instructional program and student services.

In summary, community colleges could bring cost effectiveness, flexibility, stability, and continuity to government-funded occupational education programs. However, before accepting new roles with government, community colleges must closely examine their own capabilities and understand the expectations of government.

Master Plan for Occupational Education and Manpower Programs

In the past, some community colleges have been hesitant to become involved in the administration of government-funded programs because of excessive paperwork, complex evaluative measures, funding restrictions, and the political element that envelops many of these programs (which is unfamiliar to most educators). If community colleges assume new responsibilities for government programs, they should first develop a more sophisticated and effective manpower plan nationally and then bring it to the state and local levels of government.

The data collected by various federal agencies regarding manpower needs, employment trends, skills requirements, and other pertinent data should be gathered, collated, and synthesized into a logical, understandable, and usable format that can be used as a basis for national program planning. This alone could be a task of massive proportions, since, in addition to the sponsoring departments, data is collected by the Office of Equal Employment Opportunity, the Office of Management and Budget, and the Office of Civil Rights. However, the benefit would be well worth the effort if, in the process, agreement could be reached on a standardized format for information retrieval. The savings in paperwork may be sufficient to fund such an effort.

The next steps would be (1) to agree on target problems, (2) to decide which departments will address these problems, and (3) to develop priorities. These steps will help avoid duplication of effort.

While developing programs, educators should recognize the actual cost early, and differences in populations and regions should be clearly defined. As an example, a goal of 80 percent placement for program participants may not be realistic for programs that serve the disabled or the severely disadvantaged.

Programs should be structured to include substantially more information and guidance in career choice. Participants should be

given a clear understanding of the employment outlook, beginning salaries, and the skills required for entry-level positions, as well as advancement opportunities.

Finally, the master plan should include strategy for developing communication channels with the taxpayers and continually informing them of program process. Too often only failures are publicized. We must become aggressive in bringing our successes to public attention. Programs should systematically publicize information about the number of placements and the number of dollars these placements represent to the economy. The public questions the cost of programs and seldom sees a return stated in terms of dollars and cents. Public agencies are prone to speak in terms of benefits that are often subjective or abstract. In occupational education and manpower programs, we can and should emphasize the financial return to the economy resulting from investment of public funds in training people.

A Marketing Approach

A marketing approach to manpower and occupational education planning is recommended. Marketing involves more than advertising or selling a product. It includes product development, market analysis, and the packaging of a product as well as sales. For community colleges, a successful marketing program means obtaining additional and more accurate information about the population being served. The demographics and needs of the population are ever changing, so the collection and synthesis of this information must be continuous. In addition to information about current target populations, community colleges must seek new populations that can benefit from services as presently offered. Examples of such populations are women who are seeking to enter or return to the job market, senior citizens who may desire to acquire skills for full- or part-time employment, the displaced homemaker, the physically and mentally disabled, youth who have been unsuccessful in K–12 programs but who desire employment skills, the disadvantaged, and minorities.

Community colleges have been aware of these populations for some time, and many have developed substantial programs to meet their needs. However, active recruitment of these populations and aggressive competition for federal, state, and private dollars to provide services to these populations represents a new critical need.

This is the next step in an integrated marketing system. After target populations are identified and their needs and employment opportunities assessed, the college must review available resources,

institutional mission and goals, and decide which needs it can address and how. Ongoing programs and services must be evaluated in terms of particular cohort needs. If colleges cannot meet the needs of that cohort, modifications must be considered, and in some cases new services will be required.

Federal and state funds are available for programs that address the special needs of these groups. Private foundations and corporations are also potential sources of funds. It is important at this point to understand the scope of information and coordination required in developing an integrated marketing plan.

After the target populations have been identified, and programs and services have been tailored to meet the target population's needs, then dissemination of information to the public is critical. The target population has to be advised not only that programs are available but also how programs will benefit them. Employers must be made aware of the benefits available from a pool of trained employees completing programs in the community colleges.

We in education often identify a funding source and then develop a program that fits the criteria, or we identify a need more by intuition than by scientific method and develop a program that addresses only that need. The problem with these methods is that we overlook the human factor; that is, the needs of the target population are not properly addressed.

An integrated marketing plan involves the total institution. The consumer, both the employer and employee, is the focus, and the programs are geared to their needs. The marketing plan does not end with program implementation; it continues through evaluation. Programs must be evaluated in terms of how successfully consumers' needs are met; the public information program is evaluated in terms of its effectiveness in reaching the target population, and, as needs change, new strategies and programs are developed. The marketing plan must be a dynamic, changing entity. All segments of the college must be involved and their efforts coordinated to ensure that resources are channeled efficiently.

Future-Think

William D. Birenbaum (1968, p. 43) has said, "The trouble with future-think is that it seldom shakes free from the gravity of the meanings and values we attach to what is known. . . . Present-bound, thought about the future never quite reaches another planet—which is our world today." My purpose is not to predict the future of community

colleges in the area of occupational education, but to provide recommendations that can serve as a point of departure for further thought, study, and discussion. These recommendations are by no means all-inclusive, but they raise at least a few of the issues we must address as a profession.

To understand the context in which these recommendations are put forth, it is necessary not only to look at forecasts for the 1980s but also to review thoughts of the 1970s and to recognize that, to a degree, we can determine the fate of occupational education, for the nature and environment of community colleges in the 1980s will be determined largely by actions taken now.

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Mainstream economists would agree that the education services directed at maintaining and upgrading the productivity capacity of workers figure prominently in decisions to locate or expand business operations.

Articulating with Industry in Economic Development

David S. Bushnell

Economic developers, particularly those representing state or regional interests, have long been adept at packaging land and capital to foster the birth, location, or expansion of business firms. They are, as a rule, less informed about how to develop a skilled and productive work force responsive to industry needs. Vocational educators and industry-based trainers, while less knowledgeable about economic development strategies, know a great deal about how to assist people to qualify for and hold jobs. The problem is how to put these two important groups together so that they can jointly plan and implement more effective job creation and development programs.

Interest in and concern for state-level economic development programs has become a preoccupation of state legislators and other elected officials. Part of the concern is cyclical in nature, reflecting the problems that arise when there is a downturn in tax revenues and rising unemployment. The other part of the concern is related to the dramatic economic growth enjoyed by the southern and western regions of the country. Politicians representing states located in other regions with less economic growth have been goaded into closely examining their own job creation and development programs. The bottom line has

been a continuing concern with economic vitality, recognized by politicians and voters alike as the best way to job security and improvement in the overall quality of life.

David Hartley (1977), in an article on state planning for economic and human resource development, emphasized the growing need for collaboration among state agencies and the private sector as the issues surrounding economic development become more complex:

> In recent years, several factors have combined to give a new cast to economic development. Lower birth rates have raised questions about the long-term need for constant growth. The nation's emphasis on environmental quality has added a whole set of new factors in the location and timing of economic activity—more care must be taken in assessing the longer term impacts of economic activity on the national environment. Critical shortages in many parts of the country of petroleum, electric power, clean water, and raw materials have added new dimensions to the calculus of economic development. Automation and technological change have increased structural unemployment, and this is often region-specific. And, finally, national shifts in production, market, and the labor force have caused some of the older industrial areas to decline and other areas to grow rapidly (p. 113).

What has been the state-level response to the growing complexity of the issues surrounding the planning and coordination of economic development strategies, and what role, if any, should technical or vocational education play in this arena? Before answering these questions, however, it would be appropriate to define economic development, and then to place job creation efforts within that larger scheme.

Economic development can be defined as the expansion of productive capacity or output of a state or region through better management of resources by improving the use of (1) labor, (2) land, (3) capital, or (4) technology (Bruno and Wright, 1980, p. ii). Job creation efforts are those concerned with the expansion of employment opportunities in a state or community through the recruitment of new business firms, promotion of new business ventures, or the expansion of existing firms. Job preservation can be included under this definition where existing jobs are maintained by minimizing business failures, worker layoffs, or the relocation of firms.

While most job "creation" programs are concerned with combining capital, national resources, and productive capacity, economic

developers have also become increasingly interested in ways in which the quality of work can be improved. Thus job "development" has come to represent those activities that improve the quality of the working environment as well as worker productivity. Modifications or improvements in the working environment, it has been found (O'Toole, 1973), do lead to a greater sense of worker security, purposefulness, recognition, and motivation. For the purpose of this chapter, the phrase *job creation* will be used to represent both the expansion and maintenance of employment opportunities and improvements in the quality of the working environment.

The Process of Job Creation

State and local economic development practitioners have for decades been responsible for planning and executing statewide or local industry recruitment and expansion programs. It is they who have had to shoulder the burden of promoting an awareness of a state's resources and interest in helping new or existing business firms expand or thrive. It is they who are charged with the responsibility of establishing a positive business climate, of improving that state's roads and transportation systems, of providing tax incentives for holding existing or attracting new businesses, and of ensuring the availability of a ready and motivated work force. It is their responsibility to convince representatives of the private sector and the public at large that their state or their community is fiscally stable and efficiently run.

Traditionally, state job creation programs have been limited almost solely to investment promotion and recruitment efforts organized and administered by a functional industry recruitment unit essentially independent from other state development projects (for example, housing programs, transportation systems development, and so forth). A recent study (Hartley, 1977, p. 123) of state offices revealed that a majority of states (approximately 82 percent) were in the process of separating their economic planning agency from operating economic development units. The rationale was to link the planning agency with the statewide economic development effort. The principal mechanism for achieving this link has been through the establishment of an interagency or cabinet-level task force. With the emergence of this form of coordination, the role of human resource development in job creation and development has taken on increased importance.

The Role of Occupational Education in Job Creation

According to a recent survey by the Joint Economic Committee (1979), the most significant factor contributing to a state or region's

economic development is the availability of skilled workers. Among the six factors cited in the survey (elements likely to influence where a business locates or expands) were: (1) the quality of the school system, and (2) the availability of trained manpower. While other studies (Weinstein and Firestine, 1978; Economic Development Administration, 1973) might question the high rank given to these two factors, there is some agreement that both elements are important contributors to industrial decisions to locate or expand. Among the other factors recognized as contributing to growth in employment opportunities are (Vaughan, 1979):

1. The cost and the availability of raw materials, transportation, energy, labor, capital, and so forth.

2. The potential demand for products and services as reflected by the size of the population, per capita income, types of other businesses located in the area, and so forth.

3. Characteristics of the regions, such as the availability of municipal services, recreational and cultural facilities, tax incentives, and the quality of labor relations.

Thus, most mainstream economists would agree, while recognizing the importance of other factors, that the educational services directed at maintaining and upgrading the productive capacity of workers do figure prominently in business decisions to locate or expand operations.

Job Creation in the Private Sector

In the past, the private sector has been viewed as the best creator of jobs. And, during the past two decades, it has functioned very well in that capacity. Total employment in the U.S. has grown dramatically. Between 1970 and 1977 the total labor force increased by 18 percent, with women and young adults leading the way. Females entering the labor force increased by 27 percent, while male employment increased by 12 percent. The employment of young adults outstripped all other age groups by increasing a total of 33 percent, in spite of the severity of youth unemployment, particularly among low-income and minority youth (Flain and Fullerton, 1978, p. 26).

Not all sectors of industry, however, have contributed their share of new jobs. Young, high-technology companies have increased their employment at an annual rate of 41 percent, as contrasted with larger, more mature firms, which increased at an annual rate of only .6 percent between 1969 and 1974 (Flain and Fullerton, 1978, p. 26). Of the 6.8 million net new jobs created in the private sector between

1969 and 1976, 67 percent were located in business firms with twenty or fewer employees (Birch, 1979). Firms acquired in mergers grew at a lesser rate than similarly sized but independent companies. Large conglomerates with absentee ownership were identified as having been responsible for more plant closings than either large corporations or small businesses that maintain close ties to their home communities (Mintz, 1980).

In spite of the smaller contribution of new jobs by the larger, more mature, or less community-oriented companies, not all observers of the job creation scene concur that the national interest is best served through public support of job creation activities in the private sector. Marxist economists, for example, argue that job creation efforts undertaken with public funds in attempts to recruit new industry or assist the expansion of existing companies usually result in opening up "poor" jobs rather than "good" jobs. The better jobs are those that have built-in job security, advancement opportunities, good working conditions, some influence over the way the work is organized, fringe benefits, and higher wages (Gordon, 1980). Conversely, the poorer jobs are viewed as labor intensive, low-paying, offering little opportunity for advancement, and often located in non-union shops. This train of argument tends to conclude that the use of public money to stimulate growth in the private sector is undesirable when those same funds could be used to establish community-based, nonprofit enterprises designed to serve the needs of disadvantaged workers through the creation of better jobs.

Another drawback in the strategy to either attract or assist larger corporations in job creation and development through public funding is that many such firms prefer to locate in areas where per-capita income is low and organized labor has little influence. The few jobs that are thereby generated are usually in branches or subsidiaries of larger corporations whose headquarters are located in distant cities. Only in the service industries do the various regions of the country dominate or actually control the business operation under their auspices. Birch (1979, p. 8) observes, "The larger corporations, using their financial strength, are the first to redistribute their operations out of declining areas into growing ones. They do not hestitate to locate branches in a greener pasture, placing an even greater burden on the small firms in struggling areas like the Northeast."

Federal Job Creation in the Public Domain

Through taxes and expenditures, the federal government has sought over the years to shape the aggregate demand for and the supply

of goods and services. How effective these policies have been is a matter of considerable debate. Where federal assistance has been directed at underdeveloped regions of the country, the results have been mixed. A recent White House conference on balanced national growth and economic development sought to identify some of the complexities and inconsistencies in federal laws and regulations that lessen the positive effects of economic development in various regions of the country.

A significant number of recent legislative initiatives have focused primarily on creating "good jobs" at fair rates of compensation. Many of these federal laws (Rural Development Act, the Community Development Block Grants Program, the Urban Mass Transit Administration's program, Appalachian Regional Development Act, and the Economic Development Act) have as their focus the strengthening of regional economies through the investment of federal dollars. Some are obviously concerned with urban development, others with rural development; yet all are directed at enhancing or revitalizing various regions of the country.

State and Local Job Creation Programs

While the federal government has been less successful in its regional economic development efforts, states and local governments have been able to take an active role in shaping their own economic destinies. It is important to recognize that state (and regional) economies find it hard to be self-sustaining. To meet local market demands, many products must be imported. In the process, locally earned income is siphoned off to producers outside the state or region. To maintain a balance of trade, goods and services created within the region must flow to other locations in order to bring about an influx of non-local dollars.

Statewide coordination has emerged as an important ingredient in the success of economic development strategies. We mentioned the use of tax incentives, improvements in a state's infrastructure, and the importance of skill training as areas that states are linking together through interagency coordination committees. State-level economic development planning offices have been able to establish positive business climates designed to reassure prospective employers that the state has their interest at heart. Avoidance of bureaucratic tie-ups, coordinated environmental and zoning regulations, lower energy and transportation costs, and better coordinated human resource development programs—each of these factors contributes to a more successful job creation enterprise. Human resource development programs cover a

wide spectrum of education and training activities. The part that occupational education has in job creation warrants our attention. The remainder of this chapter will concern itself with this.

Examples of occupational education's role in job creation can be found in various parts of the country. A few brief descriptions* follow.

Attracting New Industry.

1. South Carolina's "Design for the 1980s" Program is an excellent, customized training model, which follows on the heels of almost two decades of program support for new industry. The state's Technical Education System (TEC) has responsibility for putting together the job training features: recruiting, testing, timing, providing appropriate facilities and equipment, communicating with company representatives, and ensuring instructional flexibility. Success is shown by the fact that, before TEC (1951-61), only $1.4 billion was invested in new plants in the state. Since 1961, TEC has helped to bring more than $11 billion in new capital into South Carolina (Dudley, 1980).

2. Georgia's "Quick-Start" program is also centered around the state's vocational school system. It ensures similar coordination between industrial training personnel in the schools and local business leaders. The objective is to keep the curriculum in constant relation to present and future work opportunities. This program is operated by Georgia's Department of Community Development in cooperation with the Industrial Services Unit of the State Department of Education. One of the companies attracted by Georgia's business development effort was a high-technology firm, TRW, Inc. It now has plants located in three separate communities in the state, the largest of which has an annual payroll of $4 million. State staff estimate that the payback of expended funds through taxes on new payrolls takes less than two years (Georgia State Department of Education, 1980).

Revitalizing Existing Industry.

1. Oklahoma's "special training programs," begun in 1968, have helped to bring a 40 percent increase in employment during the past decade. By adding regional coordinators to the vocational education staff, the training and manpower needs of existing companies are systematically and periodically surveyed. The needs of existing companies as well as those of new companies just entering the state are responded to quickly and with a minimum of "red tape" (Tuttle and Wall, 1979).

*I am indebted to Patricia Goodman of the American Vocational Association (AVA) Publication and Communication Department for alerting me to many of these examples.

2. Twenty years ago, coal mining was a major industry in western Maryland, but the low price of oil at that time and the threat of environmental blight forced the mines to close. The advent of OPEC, together with improved mining technology, has given western Maryland's coal industry a new lease on life.

The Mettiki Coal Company is digging a deep mine on Backbone Mountain in western Maryland. To meet the needs of the new technology of deep mining, Mettiki, with the help of Maryland's Industrial Training Program, looked to Garrett Community College for assistance in training its workers. As a result of this new effort, Mettiki expects to hire 400 to 500 people by mid 1980. State officials estimate that each mining job will, in turn, create two additional jobs (Goodman, 1979).

Expanding the Economic Base.

1. Staples, Minnesota, was threatened by the specter of high unemployment when its major source of jobs, the railroad, closed down in the early 1960s. Its other primary industry—agriculture—was also suffering because of a serious water shortage.

Not willing to sit by passively, the community, under the leadership of its superintendent of schools, sponsored a special training program for irrigation technicians. This, in turn, led to a need for well drillers. An improved water supply brought about an increase in agricultural production, which in turn expanded the demand for fertilizers and other chemicals. Because of the greater productivity, farmers were able to buy more machinery and employ more people. Larger storage facilities and a need for improved means of transportation led to even more jobs. The local vocational education program played an important part in keeping Staples' newly flourishing economy alive and well (Lund, 1977).

2. The Minnesota Model for Small Business Management Education is designed to develop, increase, and improve entrepreneur skills in performing the work of a business person. The focus is on the self-employed worker and the improvement of worker productivity (Persons, 1978).

These examples of customized job creation programs are usually organized around the outreach efforts of vocational education departments and are linked with local business leaders, Chambers of Commerce, community development agencies, and CETA prime sponsors. Such programs are generally (Tuttle and Wall, 1979, p. 3): (1) short-term in nature, (2) tightly scheduled, (3) small in numbers of trainees, (4) customized to a company's specific requirements, and (5) provided at little or no cost to the company.

Most states coordinate these programs in one of two ways. Either (1) a separate agency is formed where all industrial development activities are controlled under one roof, frequently directed by a person who reports directly to the governor of the state; or (2) a multiple agency design is employed where services of a number of state and local organizations are coordinated by means of an interagency council.

Bench Marks for Assessing Job Creation Programs

Recently, the U.S. Department of Education contracted with the American Vocational Association (AVA) to identify and describe existing job creation and development programs that effectively draw on vocational education services to help meet industry training needs. As one of its responsibilities, the AVA project will develop a set of guidelines to help state and community developers and training coordinators in attracting or expanding private firms. Based on careful review of the literature, the following criteria are suggested as bench marks for judging whether or not a state and/or local job creation program and development program are likely to be successful:

1. Collaboration: Is there evidence of active interaction and cooperation among representatives of local and state agencies involved in job creation, for example, industry recruitment offices, employment security offices, CETA prime sponsors, and vocational education representatives?
2. Flexibility: How timely and responsive are the programs to the needs of industry?
3. Curriculum relevance: Is training content up to date, and does it utilize the latest training technology?
4. Ease of decision making: Are coordinators responsible for designing and implementing job creation programs delegated broad decision-making powers for committing state or local resources to a program?
5. Creative leadership: Do vocational educators who plan and commit their institutions to job creation have the foresight, know-how, and administrative skills needed to respond to client demands?
6. Commitment of key state officials: Are political and top administrative leaders supportive and knowledgeable?
7. Facilities and equipment: Are the available materials and equipment up to date? Do the supplies, tools, and machines used in the program match those to be used on the job?
8. Sharing of rewards: Are the recognition and rewards derived from successful programs shared among all the agencies involved?

9. Conflict resolution mechanisms: Are there procedures for resolving the inevitable conflicts among or between agencies and business organizations participating in the program?

10. Industry-specific: Can the program be custom-tailored to fit the needs of a specific company?

11. Cutting the red tape: Have the preconditions for participation in job creation programs been held to a minimum? (The fewer the preconditions, the greater the likelihood of a successful business and state and local government hook-up.)

Alternative Job Creation and Development Models

Assuming we accept the argument that the time has arrived for vocational education to do more than simply match people with jobs, the question before us is, how can we as educators move more aggressively into this arena of job creation and development?

There probably is no single model that will adequately describe or guide practitioners in their attempt to increase the demand for workers. Several approaches have already been described. Others stress cooperative work-education programs. It requires locating and coordinating work experience with classroom instruction. Supervisors are assigned by the school system to oversee student work experience and to ensure relevance. These are well-established practices that may warrant expansion but no major change in the way these programs are currently operated. Some evaluation is needed to determine if, in fact, this combination of work and study is more effective than either training experience alone. Evidence suggests that most cooperative education students do find employment with the company for whom they worked part-time.

Another model emphasizes a partnership with urban or rural renewal agencies in preparing people for jobs in small business or in farm management. It is a shift away from the traditional world of vocational education to one where educators are required to assist potential job makers in learning to cope effectively with a changing business environment. Most of the training that takes place under this rubric happens in the community, not in the schools. These nontraditional programs will need resources and state leadership that is willing to take some risk.

Regional differences and variations in state and local economic development efforts will dictate which model of job creation best suits a given situation. The criteria cited earlier and those currently under development in the AVA project should prove to be helpful guidelines for those involved in planning new approaches.

Summary

To close on an optimistic note: A number of recent studies underscore the economic development potential of occupational involvement in educational job creation programs (Short and Levine, 1980). In a recent in-depth examination of nine CETA programs, Lecht and Matland (1979) found that prime sponsors with strong linkages to local businesses and vocational education programs were more likely to place their trainees in better jobs in private firms. A second study (Development Associates, Inc., 1974) assessed the economic impact of vocational eduation programs in Appalachia. It found that 81 percent of the employers in the communities sampled believed the vocational schools had been an asset to the local economy. Approximately half of the vocational facilities administrators reported that they helped their communities attract new businesses, and the other half felt that their assistance had helped businesses in their communities to expand their operations. The Appalachian Regional Commission's investment in vocational education, the study concluded, had paid off by opening up new employment opportunities and by providing for better trained workers.

An expanded program of job creation and development will require guidelines, models, and training workshops for those of you interested in entering this field. It will be up to you practitioners of the art to take advantage of these opportunities.

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Effective manpower planning is essential if we are to ensure the availability of jobs for graduates of vocational education programs as well as adjust program offerings to changing needs with limited resources.

Can Vocational Graduates Find Jobs?

R. Dan Walleri
Betty Pritchett

This is the story of how a small grant application by Mt. Hood Community College to fund a district-wide labor market survey evolved into a major project involving three neighboring community colleges, sixteen other public agencies, and four counties in two states. It is an example of multi-jurisdictional cooperation in general and collaborative efforts between community colleges and prime CETA sponsors in particular.

Mt. Hood is a comprehensive community college with a priority mission to offer vocational training. To achieve sound planning of vocational programs, it is essential to have accurate and reliable data on the supply and demand for labor by occupation. To fulfill the goal of community responsibility, it is also essential that the community college make every possible effort to identify and respond to the training needs of the employers and residents of the college's district.

In the 1980s, many community colleges will experience constraints to growth caused by financial and enrollment limits. The addition of new programs will require the elimination of existing programs

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(Spencer, 1979, p. 65). Technological, social, and environmental changes will also impinge on and shape the role of occupational education. Labor market information can be used to adjust to these changes by aiding in the identification of programs becoming over-supplied or obsolete as well as identifying new programs for consideration.

In an effort to identify and respond to the occupational training needs of its district, Mt. Hood proposed to conduct a labor market survey. Such a survey involves both a household and an employer component. The household survey provides needed data on the quantity and quality of labor supply, while the employer survey provides information on the demand for labor. The project can also be used as a vehicle for district residents and employers to evaluate the college's performance in the area of vocational education.

Existing Labor Market Information System

State System. A major goal of the project is to "localize" existing labor market information gathered and reported by the Oregon Employment Division. Since 1970, Oregon has been one of nine states participating with the U.S. Department of Labor in the first attempt to develop a federal-state occupational data system (Oregon Employment Division, 1972). The Employment Division conducts an annual survey of employment throughout the state, requesting information on the number of individuals employed by occupational categories. It then uses this data to provide demand projections by occupation based on historical trends and other factors unique to Oregon. Originally, the Employment Division had simply relied on employers' projections of labor need (Area Skill Survey Method). However, employer projections were found to be unreliable, which accounts for the development of the present system.

Local Needs. Although the Employment Division gathers and reports labor market information for the state and major subregions, there were several severe limitations to the use of the information by the community colleges. First, the data were not localized, which was a major reason for Mt. Hood's project. Because of its local nature, the project could also be used to identify the needs of "special populations" not covered in normal data-gathering procedures (that is, women wishing to re-enter the job market, discouraged workers, the handicapped, and those below the poverty level). Second, the Employment Division includes only data on labor demand. The lack of reliable supply data obviously makes it difficult to use the information in vocational program planning. Finally, the reliability of the Employment Division's

data was viewed with skepticism by community college administrators; this was a key political factor which almost guaranteed that the information would not be used, let alone be a key factor in decisions affecting vocational programs. Thus, if the community colleges could become involved in conducting labor market surveys in the region, the resulting data would be localized, include both supply and demand information, and verify and supplement Employment Division data.

To avoid duplication of effort and to maximize results, the planning of the project has been coordinated with the Employment Division and the Oregon Occupational Information Coordinating Committee (OOICC). This agency was created by a federal mandate contained in the amendments to the 1976 Vocational Education Act, the same mandate that brought about the Vocational Education Data System (VEDS) and mandatory vocational program evaluation. The OOICC is charged with assisting in the development of better statewide and local labor market information for community colleges, other public agencies (for example, CETA), and the private sector. The committee had previously been successful in initiating a labor market survey in Coos and Curry counties and in involving Southwestern Oregon Community College in the process. Thus, from its early stages, the Mt. Hood project has been able to rely on the cooperation and technical assistance of the Employment Division and the OOICC.

Multi-Jurisdictional Cooperation

In addition to coordination with state agencies, Mt. Hood's project involved considerable coordination with local agencies, especially CETA. There is increasing emphasis at the national level on promoting cooperation between CETA, vocational education and industry. One recent conference sponsored by the American Association of Community and Junior Colleges, the American Vocational Association, and the American Society for Training and Development called for "a national program to define job markets and provide information on which to base cooperative training and education programs" (Watkins, 1980, p. 1).

Need for Cooperation. Closer cooperation in the area of vocational education between CETA and other agencies such as the community colleges is a major recommendation of a report recently completed by former Vice President Mondale's Task Force on Youth Unemployment (Florio, 1980). This recommendation is expected to receive legislative force during the Second Session of the 96th Congress, when the Department of Labor's Comprehensive Employment

and Training Act will be considered for reauthorization. The recommendation for closer cooperation between CETA and community colleges is derived from the finding that CETA participants have generally found it difficult to secure continuing employment. Thus, there is a need for greater emphasis on providing employment skills, especially those that can be transferred from job to job. We feel that both the survey project and training program described below clearly indicate the benefits to be derived from closer cooperation between CETA and community colleges. The U.S. Conference of Mayors' report on *CETA Vocational Education Coordination* (1979) shows that significant progress has already been made in this direction in various areas throughout the United States.

Developing valid and reliable labor market information is a natural point of conjunction for CETA and community colleges, since both have a need for such data in order to devise a rational planning process. Likewise, manpower and economic development agencies as well as business and industry require sound labor market information to promote a policy of growth that is compatible with the structure of the local community.

Local multi-jurisdictional cooperation, however, is often more rhetoric than substance. If such cooperation is to be implemented, it must rest on a firm *political* foundation. In this project the ultimate degree of cooperation was built slowly, linking one agency to another.

Mt. Hood's project began with the Planning Division of Multnomah County. The proposal to conduct a labor market survey of the college's district was submitted to Multnomah County's Economic Development Advisory Committee (EDAC). Favorable review by the EDAC and subsequent publication in the Overall Economic Development Plan for Multnomah County began the process of building political support for the larger regional project.

CETA/Mt. Hood Project. The college's project was then submitted to and subsequently funded by the local CETA Prime Sponsor, the Multnomah-Washington County CETA Consortium. In working with CETA staff, it was determined that the project could have a dual objective: Here was an opportunity to train unemployed persons in the techniques of gathering, analyzing, and reporting primary data while they were acquiring the desired occupational information. The personal interview method of data collection was selected; thus the participants would also receive training and experience in interviewing techniques.

The negotiations with CETA staff concerning the training component spanned several months. But, ultimately, it was argued that CETA funding ($86,000) would cover the salary of a project coordina-

tor, compensation for eight full-time participants for one year, and related project costs. The participants would be required to have a high school degree or equivalent. The college assumed responsibility for selecting and supervising the coordinator, providing computer services, developing the instructional program, and contributing other support services. It was anticipated that the education and work experience of the selected participants would vary considerably and the training program would need to be flexible. There was a strong commitment on the part of all that the program should include transferable skills to aid the participants in reaching their future career goals.

Training Component. The training program was divided into five phases: (1) orientation to the campus, testing for level of proficiency in reading, writing, and mathematics, determination of individual learning style, and consultation regarding job opportunities and career goals; (2) enrollment in college coursework intended to remedy basic academic deficiencies and to acquire skills needed to conduct the survey, with a class in survey research techniques (taught by the project coordinator) required for all participants; (3) attending college classes on a part-time basis while interviewing district residents and businesses; (4) inputting the raw data into the computer system through a computer remote terminal, with additional classwork in computer languages and computer operations being offered to interested participants; and (5) involvement in analyzing the data and preparing the final report.

The coordinator for the Mt. Hood CETA-funded project was hired in February 1980 and assisted in the selection of the eight participants. Four men and four women started their training program in the spring term of 1980. As anticipated, their backgrounds are very different. One has a bachelor's degree in liberal arts, and one has an associate of science degree, but none of the eight had been able to secure satisfactory employment or hold a job over an extended period of time. The feature that most appealed to the participants was the opportunity to learn practical skills related to the computer field.

The utility of the survey results for CETA cannot be overstated, especially its localized nature. The information derived from the project will not only be valid but will also be localized to the CETA Prime Sponsor area, which will enable CETA to identify training needs as well as have a data base for its annual planning reports.

Regional Project

As Mt. Hood's project evolved from planning to implementation, other local agencies became involved, especially the Port of Port-

land. This interest and involvement was due to the fact that Mt. Hood's district is located within a larger labor market area. The area is defined by Multnomah, Clackamas, and Washington counties in Oregon, and Clark County in the state of Washington, and includes the two urban centers of Portland, Oregon, and Vancouver, Washington. This labor market area is designated the Portland SMSA (Standard Metropolitan Statistical Area) and is the geographic area for data gathering and reporting by the Oregon Employment Division. This four-county area is served by three other community colleges besides Mt. Hood: Clackamas, Portland, and Clark community colleges.

The area is considered a single labor market because many people live and work in different areas of the region. For example, most of Mt. Hood's electronic technician graduates find employment in Washington County, where the electronic plants are located. This is on the other end of the region from the Mt. Hood district. Many of the people who live in Vancouver, Washington, commute across the Columbia River each day to jobs in Portland. Thus, for any of the community colleges to effectively serve their local districts, accurate information on the entire region is needed.

The Port of Portland, as part of its technical assistance efforts to the communities in the region, sponsored a conference that eventually resulted in the creation of a steering committee made up of eighteen different agencies, including the four community colleges, CETA Prime Sponsors in the area, local economic development agencies, and the state Employment Division, among others. The purpose of the steering committee was to develop, implement, and coordinate local labor market surveys in the region, such as Mt. Hood's project. On behalf of the steering committee, the Port of Portland submitted a grant application to the Oregon Economic Development Commission to fund a staff position and consulting services for the planning and coordination of the local surveys. The request was approved by the Commission, with the funds coming from the Pacific Northwest Regional Commission (PNRC), which is a federally funded agency serving the common economic development goals of Oregon, Washington, and Idaho. An added benefit of obtaining PNRC funds was that any jurisdictional complications derived from the project involving two states were eliminated.

PNRC monies funded only the planning and coordination, with the implementation of surveys left to the local jurisdiction, as in the case of Mt. Hood's CETA-funded project. By leaving responsibility for implementation to the local jurisdictions, the costs could be spread out and the participation of relevant local agencies could be ensured. With

the local jurisdiction, through the steering committee, determining the content of the survey instrument, the probability of the resulting information actually being used by the local agencies is increased.

The planning and coordination supervised by the steering committee includes questionnaire design, the development of procedures for sample selection, geographic coding, the training of interviewers, and the coordination of timeliness. Through this coordination, the results of the surveys can be combined for a regional profile of the labor market. Because of its localized nature, however, the results can also be reported by local jurisdiction for local use. (The surveys will be coded by county census tracts; thus, a particular jurisdiction can obtain the data for its area by using the census tracts that lie within its boundaries.)

Conducting the Surveys

Although still in the planning stages at the time of this writing, a general outline of the employer and household surveys can be described. The mechanics of the employer survey will be considerably simplified by the ability to "piggy-back" on the Oregon Employment Division's employer survey. (Of course, the applicability of this approach to other regions of the country will be limited by the degree of development in the particular state's occupational employment statistical system.) Thus, in addition to obtaining the raw data with which to prepare occupational demand projections, the participating agencies will also be able to gather other critical information, such as the unmet training needs of employers.

The household survey will undoubtedly consist of a modified version of the Current Population Survey (CPS) used by the Census Bureau. Unlike the statistics obtained from surveys such as the CPS, the results of this project will be reliable at the local level, and thus valid for local planning. In addition to a profile of local labor supply, the household survey will also provide information on training needs and an evaluation of existing training and manpower services.

Uses of Labor Market Information

Once the surveys have been completed and the results analyzed, the next step involves the various uses of the data in career counseling and in the evaluation and development of occupational training programs. Described below are some applications from Mt. Hood.

Career Counseling. Labor market information is combined with student follow-up results to counsel current students in a particu-

lar occupational program. This would include a description of the job market in terms of labor supply and demand, placement rates from Mt. Hood vocational programs, and expected entry-level salaries. The information can be summarized for use by counselors and instructors to supplement other career counseling tools, such as the Career Information System.

Vocational Program Evaluation. Labor market information is also used in the evaluation of Mt. Hood's vocational programs (Stevenson and Wallieri, 1979). A report is generated listing each program, the occupational titles corresponding to the program, and five-year demand and supply projections for the state and local area. Subtracting supply from demand yields an average annual number of expected openings. It should be noted that occupational projections usually include only information on expansion (new jobs) and replacement (openings created through death and retirement). The projections do not include turnover rates (openings created through geographical mobility). For many occupations, the inclusion of turnover rates would significantly increase the number of expected openings. However, high turnover rates in industry and business are often associated with poor working conditions, low salaries, limited promotional opportunities, or some mix of such factors. Thus, the question of including turnover rates in labor market projections raises the issue of whether or not community colleges should offer training programs to fill positions created through turnover.

Conclusion

The CETA-Mt. Hood project will assist the local community colleges in achieving effective vocational program planning not only for their own districts but also for the entire region. The results of the survey will enable the community colleges to identify and respond to training needs of employers and existing or potential employees. The project will also help the community colleges avoid providing an over-supply of graduates to occupations in low demand and thus increase the efficient use of tax revenues. Because the results of the project will also be used by both public agencies and the private sector, the community colleges have become the focal point in a project serving community needs beyond those directly related to the college. It is perhaps in further serving the community that the greatest long-term benefit lies. Through this project the community colleges have taken another step in cementing the reciprocal relationship of service and support between the colleges and their district residents.

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Individualized instruction, year-round education, and an extended school day are some of the strategies that Fox Valley Technical Institute uses to ensure flexible response to their community's educational needs.

Increasing College Responsiveness to Community Needs

Stanley J. Spanbauer

Soon after Fox Valley Technical Institute (FVTI) was organized twelve years ago, a staff study committee was appointed to develop a district plan relating to instruction. Representatives from each school division conducted comprehensive research and visited schools throughout the country in an attempt to find the answers to these questions:

1. Why are vocational/technical students in most schools restricted to enrolling on one or two days of the year?
2. Since most students graduate only in January or June, are these the only times of the year that businesses and industries need employees?
3. Why do educators continue to insist by their actions that all students are the same, learn at the same rate, and learn best in the same manner?

It was in Mankato, Minnesota, in May 1971, that the committee presented a position paper (Spanbauer, 1971), which they felt would provide answers to those questions. The paper outlined a number of actions that were recommended to the FVTI administration and

board. Included were concepts relating to (1) individualized instruction, (2) open-entry/open-exit systems, (3) year-round education, (4) extended school day, (5) grading, and (6) school organization.

The school's subsequent departure from traditional practices of higher education has been one major reason why enrollments have mushroomed to over 5,000 full-time students, and the school has gained a national reputation for instructional flexibility and innovation. The end result has been a school without a traditional calendar of semesters or terms.

Perpetual Enrollment/Graduation

The willingness of staff to depart from traditional calendars and schedules and to design programs around the needs of students and employers has led to an individualized system for learning known as PEG. PEG stands for "Perpetual Enrollment and Graduation," a modified version of a system commonly called "open-entry/open-exit education."

Simply stated, PEG is a system by which instruction is presented through a personalized approach. It allows students to move through a program at their own pace, consistent with their ability. Program content is based on clearly identified, measurable competencies. Objectives that describe a student's ability to perform after instruction are then written for each competency. Student achievement is measured against these performance goals after the students experience "hands-on" activities in "real life" laboratory settings. Complex media systems and computer-assisted instruction provide numerous resources for staff and students. According to school staff, competency-based and individualized instruction allows teachers more opportunity to work on a one-to-one basis with their students. Greater responsibility is placed on students with this approach, but the FVTI staff feel this is the way it should be.

Enrollment at the central campus in Appleton and at the branch campus in Oshkosh is accomplished on a regular basis. Because students proceed at different rates and graduate at different times, program openings occur regularly, and students are admitted at multiple-entry points. A streamlined registration system provides quick access to course selections and student records on computer terminals located throughout the school and at regional learning centers in the district. Counselors work with staff members to provide flexible schedules that meet the needs of students.

PEG differs from other open-entry systems in that enrollment

points are predetermined and programs are blocked according to the demands of the curriculums. FVTI's system has evolved into a variety of multiple-entry systems that range from daily registration in some courses to as few as four times a year in others. A staff committee is currently developing a year-round operating calendar of sixteen three-week instructional blocks that will serve as entry points.

Cognitive Mapping

Most students who enter the school are interviewed and tested in an effort to assess their potential academic strengths. This testing sequence, called "cognitive mapping" in educational terms, results in a computerized learning prescription for each student. It identifies student strengths and lists ways the instructor and students may capitalize on these strengths. Similarly, deficiencies are described and alternative learning plans and additional instructional resources are made available to help students overcome these deficiencies.

Based on this initial assessment, the learning system allows the instructional staff to give advanced-standing credits for a student's prior knowledge, so that no person has to repeat learning activities needlessly.

Pretests are available for most instructional units and courses to assess student knowledge before studies begin. Posttests measure knowledge and skills after the learning activities. The difference between scores attained on the pre- and posttests represents knowledge gained.

Division Flexibility

While many schools claim to have similar open-entry/open exit systems, most have only a few courses or programs with this type of flexible delivery. Not so at Fox Valley Technical Institute. A study of the FVTI programs indicates that multiple entry is available in all divisions of the school in a variety of courses and programs.

In the business education division, students may enroll daily in a number of courses in the audiovisual tutorial laboratory. The clerk/typist program also permits students to enroll daily. In addition, the account clerk and stenographic programs at the Oshkosh campus accept students whenever openings are available.

In the trades and industry division, some of the programs are structured to permit students to enroll at six-week intervals, eight times a year. Such is the case in the auto body, auto mechanics, industrial drafting, machine tool operation, painting, and metal fabrication/weld-

ing programs. In printing and publishing, electromechanical technology, and diesel mechanics, program enrollments occur four times a year at twelve-week intervals. Since these programs operate on a year-round basis, many trades and industry teachers at FVTI have opted to stagger their vacation periods throughout the year. The result has been flexible teaching contracts that provide for schedules such as nine-week or twelve-week teaching assignments followed by three- or four-week vacation periods each season of the year.

The home and consumer science division offers the most course diversity at FVTI. Students enrolled in food service, food preparation assistant, food service management, and restaurant and hotel cookery programs have courses structured in three-, six-, nine-, twelve-, fifteen-, and eighteen-week blocks, depending upon the type of instruction required for each course.

The Agri-Business Department of the school permits student entry four times a year. Also, unique programs in production agriculture admit students at multiple-entry points to enable farmers to have time off to operate their own farms during the growing and harvesting seasons.

In the health and human services division, students may enroll in the nursing assistant program at different locations in the district throughout the year. The child care program at the Oshkosh school accepts monthly enrollments. Considerable curriculum work is taking place, providing additional entry points in programs such as those for licensed practical nursing, occupational therapy assistance, and technical nursing (R.N.).

In order to accommodate students who are enrolled in the PEG programs at FVTI, the general education staff members have designed special courses to complement the occupational coursework. These courses provide various enrollment and completion alternatives in order that students may complete required courses without loss of time. In particular, flexible modes have been implemented in language communications, communications skills, and most mathematics courses. The adult basic education/general education development program also accepts students on a multiple-entry basis, as it does for almost 200 persons enrolled in the English as a Second Language (ESL) program for new Americans.

Many programs at FVTI are still available on the traditional two-semester calendar basis. However, plans are being readied by school officials and staff to convert these as well to the PEG concept. Students and staff agree that such a system, while beset with numerous problems, especially in the early stages of development, offers benefits far greater than the challenges they create.

The Next Decade—Operation Outreach

Programming during the 1980s will dramatically change to a major focus on bringing vocational education closer to district citizens. Regional learning centers are developing throughout the district, and plans are being prepared for new home-learning centers. The linking of FVTI programs to the centers through computer technology will become a viable approach to delivering vocational/technical education. The future of linking FVTI computers to high schools is also a real possibility.

The use of educational television is also being explored by the FVTI staff. With the home becoming a major focus for information systems during the 1980s, the ordinary television set may soon be converted into a computer terminal and, in fact, an instructional machine. The introduction of video disks has the capability of completely revolutionizing education, according to FVTI staff members. These disks, reproduced at a low cost, could readily be mailed to learners, viewed on home television sets, and the optimum form of self-paced learning will be a reality. As in most FVTI learning systems, faculty interaction with students will continue to enhance the learning process.

The 1980s will be an exciting decade for FVTI, since the school will be at the hub of vocational/technical teaching in the region. The progressive staff of FVTI will be at the forefront as these new learning systems evolve, since they have continually demonstrated their willingness to design innovative learning/teaching models. According to school officials, creative and enterprising faculty have spearheaded the progress already made during the 1970s.

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Skill in the reassessment of programs in relation to actual results and evident trends will be required throughout the 1980s.

Program Reassessment, Reduction, and Redirection

James E. Seitz

The purpose of occupational program reassessment is the improvement of academic delivery in the face of shifting trends. Program reassessment can lead to improvement in different ways. Better use of fiscal resources, a restructuring of curriculums for meeting new needs, the reallocation of instructional efforts toward improved retention of students, the de-emphasis of concerted marketing of an established but relatively unproductive program of study, and the complete elimination of a program that no longer attains results effectively or efficiently are a few of the possibilities. In view of prevailing conditions, program reassessment may very well become the predominant activity for occupational programmers in the years ahead.

Historically, program implementation has been the common practice in two-year colleges. Educators readily responded to the demand for additional services. The community college sector of education grew considerably as a result. From an enrollment of approximately three-quarters of a million students in the 678 two-year colleges established by 1962, the numbers progressively increased to more than four million students in over 1,200 institutions. The reasons for such astonishing growth are manifold, but providing a multiplicity of useful occu-

pational programs was undoubtedly a significant factor. Indeed, enrollment increases more closely paralleled the numbers of new programs implemented than new colleges established.

Up to the present, the mood had been compellingly expansionary, sometimes uninhibited, but most assuredly enthusiastic. One occupational program after another was literally thrust before the public, with the expectation that each would do all expected of it. Few of the constraints educators are warning themselves to face in the 1980s were then prevalent. Implementation rather than evaluation was the dominant theme.

The tenor of the times has changed. Occupational educators once used only mildly threatening terminology, such as *accountability* and *program productivity*; now they must consider the more awesome warning to be prepared to manage a state of no growth, if not decline. Fear of anything but continued expansion has gripped academia as a consequence.

How educators choose to respond to changing, often threatening, conditions will have important implications for the community colleges during this decade. Whether occupational educators should accept all dire warnings as probable fact is doubtful. Neither a steady-state mentality nor a defense posture to manage decline would seem to be the proper attitude. If opportunities for growth are to continue in any form, they are more likely to occur in the area of occupational education than in any other. No growth, and even negative growth, certainly can be expected in some fields, but those program planners who believe occupational education can and should continue to meet new challenges will be best prepared to manage changing conditions. By all appearances, conditions ahead will require occupational educators who can adapt their programs to shifting enrollments, new clientele, and scarce resources. Some program modification, redirection, and deletion can be expected. Those occupational educators applying an effective system of program evaluation will be best prepared.

A reallocation of some resources can already be anticipated. Program decisions can seldom be made in isolation from fiscal conditions. Neither can recent demographic trends be ignored. The U.S. Department of Commerce reports, for example, that from October 1974 to October 1978 college enrollment by three groups—females, minority races, and adults thirty-five years and over—outpaced college enrollment increases overall by nearly two to one. Part-time student increases more than doubled the increases in number of full-time students during the same period. The implications of statistics such as these are highly significant for the program evaluator. Curriculums once designed with

a pre-service orientation may have to be revised to meet the in-service needs of employed students. The reassignment of personnel and redistribution of funds to accommodate the needs of an older, part-time, evening student body are among the immediate considerations.

Although an extensive discourse on the conditions that place increased importance on the quality of future program planning decisions is beyond the scope of this chapter, the need for a plan and procedures that adequately address the important aspects of program evaluation remains as strong as ever. A measure of objectivity necessary to overcome preferences for retaining "pet" program structures is a fundamental requirement of the process. Evaluation is basically subjective, but a plan can be devised that will hold personal biases to a minimum.

Developing a Plan

Occupational education programs are ordinarily initiated on the basis of their expected value or anticipated outcomes. The more carefully this assessment process is conducted, the more likely desired results will be achieved. Properly done, the initial planning phase bases decisions on a variety of relevant information so that program type and structure, in the best judgment of the planner, will achieve intended results while using resources to best advantage. Therein lies a thrust to attain a balance between efficiency and effectiveness.

Reassessment implies reevaluation or repeated assessment. Program reassessment proceeds from an analysis of established programs in the light of needs after the first phases of operation. The plan identifies appropriate activities and criteria for the evaluation of each program offering, the financial resources and personnel involved, and the techniques for making comparisons of accomplishments among the various programs. A difficult but necessary feature of the plan is the producing of reliable comparisons among unrelated occupational studies. Decisions about program emphasis, resource distribution, or deletion of curriculums can be made with confidence only on the basis of such comparisons.

A plan for the comparative evaluation of occupational programs should take into account the criteria and objectives applied when each program was established. That framework forms the context, or at least offers clues, for the evaluation. A detailed explanation of planning criteria that are universally applicable to occupational curriculums has been published (Seitz, 1977, p. 23). Simply explained, the criteria are predicated on need and feasibility. *Need* relates to the demands, openings, opportunities, and education required in relation to jobs. *Feasibil-*

ity raises questions of adequacy of finances, facilities, faculty, student interest, agency back-up, and local support for conducting the program successfully.

Need and feasibility criteria can be applied with validity, but with some variation, in evaluation. Instead of dealing with job openings, the evaluator will be concerned with job placement, advancement, or other measures of success, both in related and unrelated fields of employment. Similarly, anticipated student interest must now be related to actual enrollment, retention, and attrition.

Another helpful source (Kieft and others, 1978, pp. 25–39) for the development of a plan for program reassessment contains some of the relevant criteria for institutional information studies. Because Kieft's work is structured for academic program planning in established institutions that have curriculums in place, it is entirely applicable to program reassessment. His work, like Seltz's, is illustrative of the criteria used in defining procedures for gathering data on which decisions about programs can be made. In summary form, Kieft suggests this context for the studies as a basis for decision making:

1. A detailed inventory of programs and the specific resources supporting the various program activities.

2. Applicable studies of internal information, such as (a) enrollment mix, groupings, and projections; (b) student demographics, performance, achievement, and attrition; (c) productivity measures, including class size, student-faculty ratios, unit costs, work-load measures, and credit-hour production; and (d) outcomes regarding placement of alumni.

3. Studies of external information about financing trends, enrollment trends, employment and career opportunities, educational patterns, labor trends, social priorities, and physical environment.

Several assumptions can be postulated from an analysis of the foregoing summaries. First, any decision about program reduction or redirection must be logically predicated on factual information related to need and performance. Second, since much of the information must necessarily be generated internally, a self-study approach rather than external auditing is virtually essential. Those persons most closely associated with program operation will benefit most by being directly involved in the reassessment process. Third, the information collected should be quantifiable, within the limits of practicality. Qualitative considerations should not be ignored in the decision making process, but the evaluator must guard against inclinations to reduce such considerations to quantifiable terms.

One of the main difficulties encountered in program evaluation

and reassessment is ensuring adequate treatment of qualitative, unquantifiable information. Many important outcomes, such as the social and cultural benefits of programs, are not easily measured. In fact, much that is beneficial may be depreciated or lost by attempts to base decisions strictly on quantifiable data. Bowen (1977, p. 447) stresses this point in relation to evaluating higher education simply in fiscal terms. He eminently demonstrates that, while the monetary benefits can be readily shown, decisions about the future of higher education should be founded primarily on nonmonetary considerations. It is a point well worth the program evaluator's attention.

A final point is to be made about the planning of the reassessment process. A detailed, formally adopted plan of procedures, schedules, and activities is of inestimable value. The process receives equal status with other institutional practices, and the complete plan identifies the resources to be allocated at all stages. Personnel resources, particularly, can be selected with forethought. Subsequent decisions about possible reduction or redirection of a program cannot readily occur without making similar comparisons among other programs and having the supportive involvement of the employees affected.

Being Systematic

Only through systematic evaluation can the relative strengths and weaknesses of occupational courses and programs be determined adequately. Consistently applied procedures among courses and programs provide the comparisons necessary for making reliable decisions. Adjustments can then be implemented with the certainty that all phases of education under scrutiny have been uniformly treated, and without exclusion of comparable data or activities.

For each program, specific answers must be produced for several basic questions: Does the program now do what it was intended to do? How effectively does the program accomplish the results? And is some change needed to meet current and future needs? These questions define the primary purpose of program reassessment.

A comprehensive evaluation should follow a defined plan. The following steps are broadly applicable:

1. Define the scope, that is, the specific courses, programs, and measurement objectives.
2. Specify the resource applications (inputs), activities, and products (outputs) to be considered for each program.
3. Determine the types of data, internally and externally generated, to be compiled.

4. Identify the support services and personnel to be involved in the evaluation.
5. Schedule the evaluation activities and personnel in a time frame.
6. Collect and compile the specified data and relevant qualitative evidence.
7. Compare, critique, and analyze the information.
8. Draw conclusions and implement decisions.

The experienced evaluator will recognize little new or involved about the procedure. The usual problem encountered is the one that emerges when deciding what data to compile and what measures to apply: Much information could be gathered and analyzed, and effort expended, on matters that are inconsequential in the final analysis. Observance of the principle of objectivity will assist the decision maker.

Being Objective

The reassessment process is essentially subjective. Nevertheless, it can be structured for attaining as much objectivity as possible. The procedure should differentiate between input (process-oriented) and output (product-oriented) criteria. The latter are generally the more reliable indicators of program effectiveness. Whether graduates and other program completers are actually achieving as intended is a far better basis for judging an instructional program's worth than are measures such as a student's grades and an instructor's earned degrees. Both process and product criteria are useful, but the evaluator must often consider which one should have priority.

The advantage of determining which measures are the better indicators soon becomes evident to the evaluator who cherishes time. To attempt to compile information and base judgments on all conceivable measures (of both product and process criteria) would make an analysis too involved to be practical in many instances. Few evaluators have the time and data needed to analyze completely the interactions of faculty, students, curriculums, ancillary activities, environment, and costs, in addition to the outcomes of those interactions. Despite the difficulties involved in a complete program analysis and review, a workable procedure can be developed, which begins with the compilation of manageable amounts of data that are added to over a period of time for future and more sophisticated reassessments.

A review of the literature reveals a wide-scale absence of clarity and understanding about how to measure institutional and program

value, let alone how to define measures that have the most relevance to the central purposes of an educational program. Miller's book (1979, pp. 313–335) contains an extensively annotated bibliography that generally supports this observation. Evaluative criteria are often applied in attempts to assess program quality without providing much evidence about the educational purpose itself. Whether or not learning results or has lasting effects seems often to be assumed as a consequence of the interaction of resources and the instructional activities involved. The central questions are left unanswered.

The object, or fundamental purpose, of a program of study is therefore the main consideration in defining evaluation measures. Alumni, graduates, dropouts, and stop-outs become the focus for the assessment. In the process of evaluating their accomplishments, quantifiable, factual evidence should be used, although nonquantifiable information should not be overlooked. Quantification should not be ignored, nor should efforts to measure quality, effectiveness, and the intangible benefits deriving from an institution's programs be disregarded.

Identifying Activities and Resources

The immediate purpose of a comparative reassessment of programs is to determine relative strengths, weaknesses, problems, risks, and opportunities indicative of needed change and improvement. If the products, or outputs, of a given program do not meet expectations, the weaknesses may occur in some aspect of the process stage in relation to the allocation of resources (for example, outdated equipment) and quality of activities (for example, due to overloaded instructors). It is important, therefore, that quantitative and qualitative indicators be defined and data be reviewed at both the process and product stages of program operation. George S. Odiorne (1978), the well-known authority on management by objectives, suggests that the evidence be compiled through a continuous "audit facility."

Since outcomes are very much the result of the activities and resources that go into their making, the products of a program cannot be appropriately evaluated in isolation from program processes. The activities and resources used in the conduct of a program have relevance to the essentials for learning. To take place effectively, the essentials for learning must include students, instruction, facilities, curriculum and ancillary services, finances, and management of organization. They form the basis for formulating questions on the input side of the evaluation equation.

Collecting Relevant Data

Any program that fails to produce desired results should be analyzed for some weakness in the process. Relevant and reliable data must be sought. The "opinionnaire" approach should be kept within limits. Faculty, student, and advisory committee perceptions have some value, but it is very difficult to assign priorities to different programs and determine their comparative worth primarily on that basis. It is also difficult to apply merely those perceived assessments when determining which, if any, programs to terminate. Other, more reliable information is needed to supplement and facilitate the decision-making process.

Examples of data that may be collected and consistently compared from one occupational program to another in a total program reassessment are given below. The closer these audit data relate to program objectives, the better the final analysis will be.

Examples of productivity measures are:

- Rates of placement of program completers and graduates in related fields of employment
- Rates of advancement in pay and position among former students
- Reported indicators of social, civic, and cultural growth by former students
- Employers' ratings of former students' strengths and weaknesses
- Above noted achievements of former students in the minority, dropout, disadvantaged, and handicapped categories

Examples of program resource measures are:

- Instructional and administrative cost compared to income generated on a per-student-credit-hour basis
- FTE student-faculty ratios
- Facilities costs—space utilization, equipment, materials—per student credit hour.
- Full-time and part-time faculty (or advisers) mix by program
- Publicity and public relations effort by program

Examples of program activities measures are:

- General education and specialized education mix
- Rates of student use of ancillary services—library and developmental laboratory
- Student grade distributions, failures, and withdrawals
- Program interaction and demand for courses within and among departments
- Results of previous program evaluations by external agencies

With all desired measures defined and the data collected, comparisons can then be made among the different programs of study. The evidence will often reveal striking differences in effectiveness. One program may be relatively cost effective without producing nearly as much in benefits as another. The reverse may also become evident. Occasionally, there will be no clear evidence of relative value, and intervening factors may indeterminably influence a graduate's success beyond the instructional program.

The reassessment process as described holds much promise for identifying possible applications of resources and activities that need to be modified to meet current and future demands. Trend analysis is an important part of the process. Indicators such as shifts in enrollment and placement can provide valuable evidence for program revision, just as changes induced by other programs of study due to altered staffing, modified curricular or counseling activities, and improved retention patterns can have a significant impact on the form and substance of a given occupational program. While efficiency is always a worthy objective, during times of impending shortage an institution's resources must necessarily be directed toward producing those outcomes that will do the most good.

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Because of the rapid pace of change, it is likely that many aspects of the job for which training is taking place will have changed by the time a training program is completed.

Survival in a Different Future

John E. Cleek

The assumption that examples from the past were the best guides for the future has proved to be true, because for most of human history, the future was not too different from the immediate past. "Today this way of thinking has run up against obstacles which force us to question its applicability and to challenge its power to continue in established patterns. The future arrives with increasing velocity, and we have come to expect startling announcements of new developments daily. Obviously, the future will be radically different from anything we have known" (Eurich, 1974, p. 145).

With its emphasis on the practical as contrasted with the theoretical, and the relevant as contrasted with the timeless, occupational education dare not ignore the implications of the growing body of knowledge commonly referred to as future studies. Alvin Toffler is generally credited with bringing future studies into prominence with the publication of his best-selling book *Future Shock* a decade ago. I lay no claim to the title "futurist," nor do I propose to treat futurism comprehensively in this discussion. My concern is that, as occupational educators, we must be as concerned about the future as we are with the past and present. Failure to study history may lead to a repetition of the

errors of the past. Failure to study the future, or, perhaps more accurately, failure to recognize the future implications of present trends, will not only subject us to the risk of grave error in the design and implementation of educational programs but will also ill prepare our students for a world that will be radically different from the present.

If the future is the product of the decisions we make today, time spent assessing the future impact of our decisions and educational practices cannot be slighted. One has only to consider that the present energy crisis is far more severe than it would otherwise have been had America not shifted from an urban to a suburban society. Oversized single-family dwellings on large lots at considerable distance from the central city, coupled with a system of super-highways as the primary means of transportation, are examples of the results of policy decisions that will adversely affect the future of all inhabitants of the planet.

One of the dominant trends of the past decade and a half has been the dramatic shift of attention from "education" in general to "training" for specific careers. In 1965, career programs attracted only 13 percent of the full-time community college student population. Today that figure has risen to over 50 percent.

However, lest we forget, classical education was itself vocational in its focus. At least part of the rationale for establishing Harvard University and William and Mary College was that the colonies wanted a learned clergy (Levine, 1978, p. 110). "By the twentieth century, most American undergraduates were in specific career programs ranging from engineering to business, from teaching to nursing" (Meyerson, 1974, p. 173).

A logical extension of the growth of occupational education to the point of almost overshadowing all other programs in many community colleges is the widespread practice of "developing courses tailored to the specific needs of industries, businesses, and agencies . . . Frequently, these courses are developed on a contractual basis with the firm desiring the educational services. The course content [is] adapted to the specific requirements of the firm and its employees. The entire course may be purchased at an agreed-upon cost, or employees may be sponsored by their companies or unions in regular or on-going courses" (Gleazer, 1980, p. 54).

Apparently counter to the trend toward curricular dominance by occupational or career programs is the re-emergence of general education as a topic of serious discussion among many educators. Related to the growing interest in general education is the concern—even alarm—that exists regarding standards and basic skills. Taxpayers and politicians may not fully understand the complexity of the issue, but it is

clear they are demanding answers. Failure to address questions of basic literacy in the context of meaningful reform of general education will lead to the imposition of overly simplistic and educationally unsound solutions by an outraged public. The Carnegie Foundation for the Advancement of Teaching has stated: "No curricular concept is as central to the endeavors of the American college as General Education, and none is so exasperatingly beyond the reach of general consensus and understanding" (1977, p. 164); and "Although [our graduates] can, and hopefully will, derive independence and satisfaction in careers with promising futures, it is equally, if not more, important that they match their skills and competencies with a thorough understanding of work as a characteristically human enterprise" (p. 224).

It is doubtful that any of the trends with which occupational education need be concerned can be compared with the impact of the dizzying pace of change. "The basic, inexorable, unmistakable fact and force to deal with is that of CHANGE—unparalleled and unprecedented change that perplexes the public, confounds the authorities, and demands response from education, one of its instigators" (Gleazer, 1980, p. 2). What Whitehead observed in his day is even more valid today (Dave, 1976, p. 15): "In the past, the time span of important change was considerably longer than that of a single human life. Thus mankind was trained to adapt itself to fixed conditions," which prompted the observation that "today this time span is considerably shorter than that of an individual human life, and accordingly our training must prepare individuals to face a novelty of conditions." And Faure (1972, p. 13) has said, "For the first time in history, education is now engaged in preparing men [and women] for a type of society which does not yet exist."

John Naisbitt, in a publication of the Special Studies Division of the World Future Society, comments on some of the prominent trends that will affect American business over the next decade. Some of these trends (discussed later in this chapter) have equally significant implications for occupational education.

Toward an Information Society

"The United States is rapidly shifting from a mass industrial society to an information society, and the final impact will be more profound than the nineteenth-century shift from an agricultural to an industrial society" (Naisbitt, 1980, p. 1). In 1950, 65 percent of people working in the United States were in the industrial sector. That figure today is around 30 percent. The number of people in the information

sector of the society has grown from 17 percent to over 50 percent. Naisbitt also says, "In connection with this shift to an information society, it is important to notice a powerful anomaly developing: as we move into a more and more literacy-intensive society, our schools are giving us an increasingly inferior product," and "for the first time in the history of the United States, the generation that is graduating from high school today is less skilled than its parents" (p. 10).

Toward Human Technology

"The American society is moving in dual directions of high tech/high touch. The introduction of every new technology is accompanied by a compensatory human response—or the new technology is rejected" (p. 10). In other words, without the human touch in presenting course materials, students reject the technological aspects.

Toward Appropriate Scale

E. F. Schumacher's *Small Is Beautiful,* which advocates intermediate technologies—for example, technologies that can increase output without decreasing employment levels—has given rise to growing emphasis on appropriate technology and scale. This trend is more advanced in Europe than in the United States. The success of small- and medium-sized auto companies in Europe presents a sharp contrast with the shaky condition of the U.S. auto giants (Fleming, 1980, p. F-1).

Toward Ageism

"Ageism has replaced racism and sexism as the society's major anti-discrimination preoccupation. Business is wholly unprepared for the probable complete removal of mandatory retirement which will bring with it many changes in the present arrangement of dividing life into separate periods of education, work, and retirement" (p. 11).

Many of our occupational programs are extremely well designed when viewed from the standpoint of the presuppositions on which they are based. Unfortunately, many of these presuppositions no longer seem valid. That is, the assumption that a body of knowledge and a set of skills exists, which if mastered will make one successful on the job, assumes that the knowledge and skills pertinent to the job market remain relatively constant. The rapid pace of change affecting both the theoretical base and the consequent technology is such that, by the time a training program is completed, it is likely that many, if not most, aspects

of the job for which the training is taking place will have changed. It is also likely that additional change will continue at such a pace that, in a reasonably short time, most of both theoretical knowledge and practical skill will become obsolete.

Under the presuppositions concerning conditions that no longer prevail, the rationale for general education was primarily derived from a concept of the worker as citizen rather than from the worker as worker. Given the new rapid pace of change, a different approach to occupational education is essential even from the point of view of the worker as worker. Rather than focus primary attention on the knowledge and skills assumed to be necessary for success on a job, it is now essential that we place greater emphasis upon conceptual skills, problem-solving capabilities, adaptability, and flexibility, rather than upon the acquisition of specific knowledge and technique. As Edgar Faure (Faure, 1972, p. 196) has noted, "Educational action to prepare for work and active life should aim less at training young people to practice a given trade or profession than at equipping them to adapt themselves to a variety of jobs, at developing their capacities continuously in order to keep pace with developing production methods and working production."

Even a cursory review of many occupational programs in operation today reveals that the overwhelming emphasis of the curriculum is on specific occupational courses designed to produce mastery of specific skills and techniques known to be pertinent to the present performance of the selected career field. Even the relatively small portion of the curriculum that is devoted in some way to general education consists of either somewhat randomly selected elective courses or electives selected from within the occupational program itself. Neither alternative is an adequate response to the demands of the changing workplace.

Hadley Smith, a well-known designer who also directs the Office of Future Studies for the state of Mississippi, has recently observed, "Commercial art skills are complex. A two-year major intent on perfectionism and mastery, however genuinely and capably offered, misapplies its strengths and omits other basic issues. In addition to technical execution, commerical art majors must learn how to think and evaluate the import and ethics of the images they conjur and the hidden dimensions of those messages. They must learn to be good facilitators of other properties, ideas, and abstract concepts which may take the form of literal, camera-ready artwork or of an interdisciplinary meeting intent on defining and addressing a crucial community problem" (1980, p. 5).

These observations, with only slight modification, would be equally true for many other technology programs offered in our com-

munity colleges. Mastery of existing motor skills will not suffice in an age demanding critical thinking, flexibility, and adaptability. While it is possible to refine and perfect motor skills on the job, given a solid foundation in the basic techniques and methodology, it is less likely that conceptual skills will be acquired or perfected on the job in the absence of an adequate theoretical base.

The well-known futurist John Diebold, commenting in an interview on the educational implications of the growing convergence of the communications and computer industries, states, "I have always been a big believer in a good liberal education. . . . I think it's wrong to try to teach people the specifics of a certain technology because the changes are so rapid that by the time they've walked across the street with their diplomas, everything's different. The only thing you can hope to learn is how to learn" (Wiser, 1980, p. 111).

As Myron Marty (1980, p. 58) has observed, "A curriculum or a degree program is unbalanced and incomplete if it does not help students: (1) to find and make sense out of relationships between their life, work, and jobs; (2) to see themselves and their society from different angles, different time, different places, and through different eyes; (3) to expand and refine their ability to read, write, and speak; (4) to reflect on the meaning of their doings, habits, and beliefs; and (5) to respond with both reason and feeling to their natural and man-made environments."

As occupational educators, we need to make clear the distinction between jobs and careers and stress the importance of keeping individual options open. The tendency toward "either/or" thinking is far too prevalent. It is not, or should not be, necessary to pit career preparation against general education. Employers, as well as students, should value the result of the total educational experience.

The Carnegie Foundation for the Advancement of Teaching (1977, p. 228) suggests that an effective program of occupational education will be sufficiently comprehensive to increase the likelihood that those who complete it will not only be solidly grounded in the theoretical knowledge and practical skills pertinent to the job but will also be:

- Appreciative of the local, national, and international context of their occupational endeavors
- Aware of fields of knowledge that offer data and insights relevant to the selected occupation
- Capable of communicating effectively with co-workers, superiors, customers, and the general public
- Resourceful in adjusting personally and professionally to problems and unexpected developments and opportunities

- Able to learn quickly and independently
- Able to recognize excellence in products, performance of associates, and competitors, and plans for future developments
- Experienced in working to meet specified standards and persevering to the conclusion of assigned tasks
- Able to set and meet standards of ethical behavior and morality

The issues raised herein are complex rather than simple. The solutions, therefore, must be equal to the complexity of the challenge. To settle for less is to risk preparing our students for obsolescence.

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Is there a place for the liberal arts in occupational education? One president says there is.

The Marriage of the Humanities and the Trades

William A. Koehnline

The recent national assembly on strengthening humanities in community colleges serves to emphasize the plight of humanities education and the faculties that provide it in our multi-purpose institutions. One of the recommendations (Harper, 1979-80) of that assembly is that the AACJC should "convene a series of regional roundtables to address ways to improve humanities offerings, particularly as they relate to occupational programs." This paper is in part a proposed agenda for those hypothetical roundtables and for other discussions among any of us who are concerned about the lifelong value of the education we provide.

Interviewing Students About the Humanities

Philosophy Students. The same week that I received the assembly's papers, I happened to be guest lecturing in two philosophy classes at Oakton. Two relevant questions arose from a discussion of our college's stated philosophy, specifically from the following elements of our published statement (*Oakton Community College Catalog*, 1980, p. 6): "Each individual . . . should be provided the opportunity to develop his or her

full potential to his or her and to society's ultimate benefit"; and "Oakton . . . believes in learning for living as well as learning for earning."

Several students questioned whether the individual's benefit and society's benefit were compatible goals. It is possible to argue that, under the eye of eternity, they are identical. But what of the student whose fullest potential is in the care of children, and a society—at least a local society—that is already well supplied with professionals in child care, early childhood education, pediatric nursing, and so forth? Is individual self-realization socially counterproductive?

During the remainder of the class discussion, some students objected to the phrase "society's benefit" because they assumed that society benefits from conformity and mechanical predictability. Others felt that the individual's full development might produce either a superfluous specialist or a nonproductive consumer. The alternative emphasis—educating for society's benefit by educating just as many technicians as society will need, and never "overeducating" any—appeared momentarily attractive to some. I will expand upon the implications for humanities and occupational education in a moment.

"Learning for living" as a complement to "learning for earning" bothered some Oakton philosophy students. They identified closely with the humanities and objected to giving equal billing to mere bread and butter, on the one hand, and to life-enhancing values on the other. They had to be reminded that they represented the minority of students who elect courses in the humanities, and that the imposition of their values on the majority would be a repudiation of the value of self-determination of goals to which this society, to some extent, and this college, by its published philosophy, are committed.

The students currently enrolled in Oakton's occupational courses are not necessarily ready to commit themselves to a large number of credit hours in the humanities, but there is some evidence of readiness, as gleaned from brief visits to classes in electronic technology, data processing, and radiologic technology.

Electronics Students. Students in communications electronics, a sophomore-level course in the electronic technology curriculum, included one who will be taking college courses for fun after completing the associate in applied science, one who said, "I can take the general education later *if I need it,*" two who had already had substantial study in the humanities, one who would take photography if it yielded credit toward a degree (which it does), one who believed that "students should be forced to take some humanities," and at least one *bona fide* transfer student deliberately taking non-specialized courses in the community college because they are said to be "easier, and just as good as those at the senior colleges."

There were two students who had been enrolled in a course called "Modern Culture and the Arts." They found it interesting and, in part (that part related to disc jockeys), "relevant" to their other studies. They failed to relate to the segment of the course concerned with sculpture.

Data Processing Students. The evening section of first-year students in data processing proved to be extremely task-oriented. One student was interested in taking courses in psychology, especially child psychology. In response to questioning about how the college might make humanities more interesting or attractive, some students suggested weekend classes but did not necessarily admit that such classes would be attractive to them. One complained that she found catalog descriptions uninteresting and was unaware that Oakton provided a more detailed and more interesting set of descriptions in its directory of sections.

One final observation relevant to the topic of this speculation came out of the computer class. This concerned a large section with a long class period, including a full week's work in one sitting. Such a class badly needs variety, change of pace. A module or subunit devoted to the ethics of computerized personal information, for example, might help to bring such a class close to its full learning potential.

Radiology Students. A class in radiologic technology included students with the greatest breadth of educational experience and the strongest support for intermingling the humanities and job-related instruction. These students testified that liberal arts courses were "good for broadening," that "human relations are very important in the technical field," and that non-technical courses are "good relief, they get your mind off the grind of technicalities." The teaching intern in charge of the class on that morning gave lots of testimony on the value of social science and humanities courses, "not for specific content but for general awareness of human complexity." These students, many of whom wanted to take elective courses, cited the special problems of commuting time, the "lockstep" sequence of required courses, and so forth. Despite these difficulties, half the students in this course and in the radiologic curriculum have had college experience entirely outside the technology curriculum. This appears to be a growing trend.

My own belief is that the occupational curriculums can support as well as include the humanties.

False Dichotomy

Those who bemoan the condition of the humanities (Cohen, Brawer, and Koltai, among the contributors to the recent national assembly, and many national spokespersons for the interests of human-

istic educators) sometimes seem to see occupational education or "practical education," with its Machiavellian lobbyists, as the villain on the educational scene, securing more than its share of the funds, the equipment, the administrative support, and—most important of all—the students. We are trapped by a destructive dichotomy built into our colleges and apparently into our world view. We seem to want each student to fit neatly into some "pure" category, to be an identifiable "major" moving along a single track centered in a single department or program, preferably our own.

If a student is not serious about our subject and willing to take six, nine, twelve, and preferably many more semester credit hours in our discipline, we tend to discount that student. Our way of keeping score—in the computer statistics, the budget reports, and inside our own heads—tells us that if occupational education is a winner, the humanities must be a loser. Thus we reinforce our own prejudices.

Our scorekeeping does have a basis in the real world, but my thesis here is that the two elements of education polarized in the phrases "learning for earning" and "learning for living" can be perceived as natural allies, with neither subordinated to the other. If we and our vested interests will get out of the way and let it happen, occupational/vocational/"practical" education will provide the market for the humanities because they will be needed to keep the entire curriculum and the entire comprehensive faculty balanced and healthy. In a society that sends a majority of its citizens into some form of higher education, the proportions of "earning and living" will be different from those in a more elitist society, but those proportions of earning to living will not be nine to one or anything that extreme if we keep score rationally and adapt curriculums in the interests of our most serious institutional commitments.

Three "Marriage" Arrangements

At least three methods of more effectively "marrying" the humanities and occupational components of community college education deserve our consideration. These are pre-service free-standing courses, pre-service modules within course packages, and in-service or pre-retirement courses. It is not my intention to advocate one of these methods to the exclusion of the others or of methods not mentioned here. If we are concerned with the balance and good health of our curriculums, we will use whatever method we can find, adapt, or innovate. An an overview, let us consider these three methods.

Courses. Traditionally, humanities education has been packaged in courses and sequences of courses, with the first course serving

as a broad survey of an intellectual domain, and subsequent courses opening up the subject and its parts. In the catalog of Oakton Community College, for example, we set forth ten courses under the rubric of humanities. Eight of these courses are called "Introduction to" one of the identifiable broad subject areas—art, music, philosophy, literature, architecture, theater, film, and music theater. The other two courses are, respectively, a little broader or a little narrower in focus than the "introductions to" courses. They are "Modern Culture and the Arts," covering the full range of late twentieth century artistic activity, and "Film as Literature," which assumes a prerequisite knowledge (but without formal course prerequisites or required instructor's permission to register) of the two art forms that illuminate each other in the hybrid film-literature. These courses are incorporated as elective alternatives in a number of the career curriculums and help to redress the balance in those curriculums.

A variation on the method of encouraging or requiring career-oriented students to take humanities courses similar to those above is the requirement to take an interdisciplinary course in the first year. At Oakton, in addition to "Modern Culture and the Arts" (Humanities 101), the alternatives include "Introduction to Environmental Science" (Natural Science 106), "The Psychology of Personal Growth" (Psychology 107), and "The Individual in Modern Society" (Social Science 101).

Regardless of whether these courses meet the definition of the humanities used by the National Endowment for the Humanities, they do serve the humanities education function and do contribute to the life-enhancing value of the four-semester sequence of learning experiences.

Modules. A second method for introducing the content and values of humanities education into predominantly career-oriented programs is the module, either less than full course length, as advocated by Arthur Cohen in recent presentations (1980a, 1980b), or as a full course that is part of a larger package, something that Oakton calls "tandems," "troikas," and, in one celebrated instance, "quadrominium."

Two or more faculty members teach these pairs, triplets, or quadruplets of courses back-to-back (or side-by-side), with all students and faculty in one course participating in all the others. The approach, an expansion of the four interdisciplinary courses mentioned in the previous discussion of courses, is designed to encourage all participants—faculty as well as students—to perceive more clearly how the bodies of subject matter relate to each other and to the lives of the participant.

A tandem offered during the 1979-80 term, for example, was the combination of "Fundamentals of Two-Dimensional Art" and "The Psychology of Personal Growth," taught by a faculty member from the art discipline and one from the student development department.

A more complex package designed on the principles of the combination of modules, but with alternatives available within it, is the "Human Us Survival Seminar," a six-credit-hour experience of humanities and social science (or, occasionally, science) offered in the spring semester of each year. Alternatives within the humanities component of this tandem include not only "Modern Culture and the Arts" and the 100-level "Introduction to Literature" but also two courses under the specific heading of "Literature," namely "Introduction to Drama" and "Introduction to Fiction." The social science components include "Introduction to Sociology," "Social Problems," "Marriage and the Family," and "The Individual in Modern Society" as well as four history courses—the standard U.S. history sequence, plus "Minorities in the U.S.A." and "Afro-American Roots and Heritage."

Perhaps a little longer description of this fairly complex package is warranted. Here is how the seminar works. During the first three weeks, two or more faculty members meet with the entire seminar group for a two-hour tandem period each class day. They provide lectures, lead discussions, present audiovisual material, and assign reading to help the student select a project in the broad field of personal/community survival. During the remainder of the term, most class time is devoted to tutorial and small-group work sessions. Finally, as in an upper-division or graduate seminar in any traditional discipline, the experience concludes with project presentations by each student and one or more wrap-up sessions, for purposes of synthesis, led by several faculty members.

Each student selects two courses, one from the humanities list, one from the social science list. The student is also encouraged to integrate the two subject areas wherever possible, but two separate projects in place of one integrated project are permitted after consultation with the faculty. Creativity and responsibility are encouraged and expected.

On a smaller scale, modules can be mixed or matched within a single course. For example, within the course "Fascinating Fiction" (a version of "Introduction to Fiction"), four instructors teach six modules, with each student electing three modules, each occupying one-third of the semester. The course begins with a week of orientation and then moves to five-week modules (for example, science fiction, contemporary fiction, fantasy and myth, Southern literature, tales of terror, and political satire).

Cohen advocates, and I support, still another employment of the module approach to humanities courses. The old, informal way of achieving this mixture was by inviting guest lectures from one's colleagues. A more extensive and more formal implementation might be

something like the inclusion of five weeks of medical ethics in a sixteen-week course in pediatric nursing or three weeks of psychology in a twelve-week course in management, introduction to business, or supervision. For practical purposes, and for the maximum transferability of credit, I suppose the new content should be in the form of added hours and added fractional credit, since senior institutions tend not to give one-for-one transfer credit to interdisciplinary courses. If the standard course description calls for sixteen weeks of clinical instruction, one cannot insert five weeks of something else, however valuable, and live up to the expectation on which most current transfer agreements are based.

The inclusion of humanities content in career courses is most easily and simply done by the career-subject-matter faculty member, if that specialist has the necessary expertise and the appropriate value system. This serves the student, but does not solve the problem of the underused humanities faculty.

In-Service, Mid-Career, Pre-Retirement Courses. Most community college students work part-time, full-time, and even overtime each week. They are therefore already in-service, although many of the jobs they hold are low-paying, temporary, or unrelated to their long-term occupational interests. Nevertheless, the line between pre-service and in-service humanities education can be drawn with enough distinction between the course and module methods, pre-service and in-service, and their variants, and the third method—marketing humanities courses to students who are already launched on their careers, and to those who are approaching the end of their careers and preparing for retirement.

It has been said that there are more students learning for the joy of learning in the community colleges than there have ever been in any other institution, anywhere. Many of these students are women who have returned to school after sending their children into the elementary schools. Some are men and women in mid-career; some are retirees. For those engaged in careers, there is a value in the study of the humanities that may not have been present earlier in life.

Those who can earn a living are more likely to be ready to give their minds and spirits the benefits of art, literature, and the study of history than those dominated by anxiety about their employability. Maybe a large proportion of humanities education should come later in life, rather than sooner.

Perhaps it is fitting in our society to offer some of the elements traditionally force-fed to adolescents and immediate post-adolescents to those who are truly ready for them, namely the middle-aged and fully

mature citizens, and those who are preparing to reduce rather than increase their work commitments. Rudy Shapiro, a retired truck-fleet operator who was a student at Oakton and who graduated two weeks before his death, loved to say to students he hung out with, "You guys are going to school so you can make it; I made it so that I could go to school!" I have not heard others express the idea in quite the same way, but there is a segment of our population that already believes or could be brought to believe as he did.

Once upon a time, in the old days, which were perhaps good for the few but certainly not for the many who were counterparts of our students, education was for those who could look forward to lives of leadership or leisure or both. The liberal arts and sciences, the humanities, the studies that involved the mind more than the muscles, served the career needs as much as they served the human needs of the educated class. Today, when education conveys no automatic social distinction, and when leisure is not assured except for the retired and the unemployed, the humanities serve changed human needs.

Workers need the humanities. Employers need the humanities. This need is not at the subsistence level, as marketable skills may be, but at a point in the hierarchy of needs that follows job security, or at least the assurance of some earning capacity.

Occupational educators, we need you to recognize that those you serve also need the humanities. There is a significant place for the humanities in today's career-oriented community colleges. It is an honorable place. With vision and cooperation we can install the humanities in that place. It is my hope that in the decade of the eighties we will do so.

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The Community College of the Air Force has developed approximately ninety AAS degree programs (using Air Force technical training as the foundation) that can be shared with many components of American society.

Imaginative Programs—A Military/Civilian Partnership

Douglas E. Testerman

One need go only as far as the want ads of local newspapers to learn of the multitude of jobs that remain unfilled—unfilled in an era when national and local unemployment rates often exceed 7 percent of the eligible work force. Concomitantly, many thousands of these unemployed (the underemployed should be considered also) may have attained one or more college degrees. Undoubtedly, there are many reasons why these graduates and the job markets fail to match. Some may conjecture that the academic community is unimaginative in not fulfilling the practical needs of society; others may feel that the crux of the problem rests with environmentally conditioned parental/cultural expectations, which are impractical in the current changes affecting our society; still others voice different reasons. It is likely that, to varying degrees and in varying situations, each is partially correct.

Production of Skilled Workers

Regardless of the reasons, traditional schools are not producing enough graduates with marketable skills in many technical/vocational areas, even when technical and vocational education is increasingly

valued by students, teachers, parents, and employers. To a great extent, community colleges (vocational and technical) have been primarily responsible fo the public's change in attitude. Community colleges provide a product (skilled graduates) that is immediately functional in satisfying known community needs. Also, these skilled personnel normally become productive members of society after only two years of schooling.

Unfortunately, many colleges and communities, although willing, cannot afford the necessary investment to initiate programs in all areas where skilled personnel are needed. The required investment in program development, training materials, personnel, and equipment is often prohibitive even when community needs are known.

The Air Force community, although unique in some aspects, is essentially a mirror image of most American communities. Both must have sufficient numbers of skilled personnel to function effectively and efficiently. Necessity dictates an assurance the Air Force will have a pool of skilled people continuously to perform its many missions. Thus, need resulted in the development of an extensive education/training complex employing state-of-the-art devices and techniques that will continuously produce skilled community members.

Transfer of AF Technical Training

Studies by the D'Arcy-MacManus Company, other independent agencies, and the Air Force Human Resources Laboratory revealed that 80 to 90 percent of Air Force technical training is directly transferable to civilian occupations. Academicians familiar with this training have recognized its superior academic quality. Generally, there is a lack of understanding about the scope and excellence of technical training conducted within the Air Force, and this lack of understanding has its most profound effect on employers and educators, who are thereby unaware of a vast potential resource. Since the Air Force supplies thousands of skilled technicians in a variety of professional areas to almost every American community, it became increasingly apparent that a system was needed to relay this vital information to those communities. This need, as well as others, was satisfied by the establishment of the Community College of the Air Force in April 1972.

Initially, it might appear that accrediting and certifying personnel skills to make airmen more competitive in the job market would be detrimental to Air Force retention. A former commander of the Air Training Command, General George Simler (Correll, 1972), explained his philosophy on this matter as follows: "First of all, I think we have an

obligation to Americans who come into the Air Force to provide them this kind of service, regardless of whether they stay in the Air Force or return to civilian life. I think we have an obligation to industries of the United States to provide them with a man who has recognizable skills that are usable by them. . . . There are benefits to the career man, too, and they go beyond the increased prestige accruing to him as a master of his trade. He will be in an improved position to seek post-service employment" (pp. 1-4).

Community College of the Air Force

The Community College of the Air Force received its impetus from General Simler's philosophical concept, and, using Air Force technical education as provided by seven independent, regionally accredited Air Force schools as a foundation, began designing educational programs specifically tailored for the noncommissioned officer. These programs combine existing Air Force technical education with a core of general education from regionally accredited civilian institutions and management education from military and civilian sources. Satisfying the sixty-four to seventy semester hours of program requirements leads to the award of an AAS degree.

Program Development

Approximately ninety degree programs were developed, designed after the best available civilian college programs. Alternatives leading to professional licensing and certification are incorporated into programs where possible. Personnel who design and refine these programs have an average of fifteen years' experience in their specific career areas; many have taught at program-related schools and therefore have primary curriculum development/evaluation expertise.

The Air Force approach to teaching technical skills is strictly performance-oriented. Given a specific amount of instructional input, the Air Force requires an equivalent performance output from its students. For example, if a course was designed to train data processors, paralegal workers, or electronics engineering specialists, the Air Force expects graduates who are skilled technicians at the conclusion of the instruction. The entire technical training program (including the amount and method of instruction, the specific equipment used, the level of skill required, the training standards, and so forth) is set forth in published course documents entitled *Plans of Instruction.* To date, CCAF program developers have analyzed over 15,000 Air Force plans of

instruction (separate courses) and described them in civilian terms and semester hours. These evaluations are placed in a central computer file for automated transcripting and for tracking student progress. The descriptions are published in the *CCAF General Catalog*.

This evaluation process provides the basis for the technical aspect of CCAF programs. But much more is required before the program designs are complete. Program development requires extensive research and documentation of all aspects of the occupations involved. Initially and periodically, each program is reviewed at five levels: (1) department, (2) curriculum director, (3) division director, (4) external consultants/advisers, and (5) policy council/dean.

Five academic departments, organized by functional area, are responsible for the development and control of the occupationally oriented programs in which enlisted members of the Selected Reserve of the Air National Guard and Air Force Reserve may earn an AAS degree. The functional areas are:

1. Aircraft and Missile Maintenance
2. Electronics and Telecommunications
3. Health Care Sciences
4. Management and Logistics
5. Public and Support Services

Each program must include a minimum of:

1. Twenty-four semester hours of technical education, which may be satisfied through Air Force course work, comparable work taken at regionally accredited civilian institutions, or, within certain limitations, examinations or correspondence courses.

2. Twenty-one semester hours of general education—including courses in communicative skills, mathematics, natural sciences, and social sciences/humanities—completed in regionally accredited institutions. Examination/correspondence credit is acceptable, but its use is limited.

3. Six semester hours of management education.

4. Four semester hours of physical education.

5. Sixty-four semester hours for degree completion.

Graduates typically exceed these minimums in two or more areas to satisfy the overall requirements for the degree. Assessing and guiding 115,000 students through a multitude of discrete programs requires innovative techniques. To keep the student, the base education counselor, and CCAF personnel aware of each student's status, CCAF provides a multi-copy, computer-generated student progress report to all interested parties upon receipt of evidence of new program-related educational experiences. This instantly produced and current automated

report graphically illustrates the student's progress toward degree completion at any point in time.

Figure 1 is an example of a special CCAF program, the successful completion of which authorizes graduates to sit for national certification, as explained [illegible].

Figure 1 Example of CCAF Program

Electronics Engineering Technology

Purpose: This is a special program to prepare airmen from the Communications-Electronics Systems, Missile Electronic Maintenance, Avionics Systems, and Training Devices career fields; from the Telephone Switching Equipment, Electronic Switching Systems, and Missile Control Communications Systems career areas; and those airmen with reporting identifiers as Systems Repair, Scientific Measurements, and Scientific Laboratory Technicians for noncommissioned officer responsibilities and for continuing their education to become engineering technologists in the electronics career area.

Completion of the Technical Education, Communicative Skills, Mathematics, and Natural Sciences requirements should prepare airmen to challenge the Institute for the Certification of Engineering Technicians (ICET) Electrical-Electronics Examination. ICET is sponsored by the National Society of Professional Engineers.

School Locations: The USAF Technical Training Schools at Chanute AFB, Ill., Keesler AFB, Miss., Lackland AFB, Tex., Lowry AFB, Colo., and Sheppard AFB, Tex., conduct the required Technical Education courses listed below.

Program Requirements		Semester Hours
Technical Education		34
Core Curriculum		36
General Education	26	
Management Education	6	
Physical Education	4	
Total Program Requirements		70

Technical Education

Requirements: Students must complete a minimum of 15 of the 34 semester hours from the following or comparable courses. The CCAF course designations and semester hour values for Air Force courses (current at the time of this catalog's [1979-81] preparation) are listed below.

CCAF Codes	Courses	Semester Hours
*ELT 1210	Basic Electronic Principles and Circuits	4
*ELT 1255	Vacuum Tube Principles and Soldering Techniques	1
*ELT 1710	Fundamentals of Solid-State Circuitry	2
	Basic Electronic Circuit Analysis	3
	Electronic Circuit Design and Analysis	3
	Engineering Materials and Processes	3
	Technical Drawing or Drafting*	2

*Required

Figure 1. Example of CCAF Program (continued)

Electives: To satisfy the remainder of the 34 semester hours of Technical Education, students must complete courses from any of the following areas. Generally, advanced Air Force courses on specific electronic systems will satisfy this requirement: (1) Communications-Electronics, (2) Computers and Controls, (3) Electronic Power Systems, (4) Pulse, Digital, and Switching Electronics, (5) Test Equipment and Measurement.

Core Curriculum

Requirements (General, Management, and Physical Education): The Core Curriculum requirements for this program are 36 semester hours. See "Core Curriculum" (1979-81 Catalog) for application and examples of suggested courses.

Exceptions to the Core Curriculum

Mathematics: Nine semester hours are required, to include algebra/trigonometry and analytic geometry/applied calculus.

Natural Sciences: Eight semester hours are required, to include a course in chemistry and physics covering heat/sound/light and mechanics. Laboratories are recommended but not required.

Social Sciences/Humanities: Three semester hours are required. Recommend a course in economics, industrial psychology, or logic.

Recommendation:

Communicative Skills: Recommend a course in technical writing.

CCAF Programs Require Civilian College Credit

In many of its approximately 250 career specialties, the Air Force does not provide sufficient technical training to satisfy all technical credit requirements of CCAF degree programs. Recent (1979) follow-up evaluations of CCAF graduates reveal that 51 percent of the students' total credits are earned from military sources and 49 percent from civilian colleges. Most of the general education credit is earned in civilian colleges. This may explain why a majority of CCAF graduates plan to complete baccalaureate or higher degrees; moreover, these students often state that CCAF provided the impetus for their college aspirations. A complicating factor affecting the completion of programs is that the Air Force member is highly mobile.

Since students must often rely on technical and general education courses taken at civilian colleges located near Air Force bases to complete their programs, all program requirements must be sufficiently flexible to afford each student a reasonable opportunity to complete necessary courses.

Enlightened college administrators are increasingly recognizing that CCAF students—those on active duty and those leaving military service—provide a substantial resource of potential students who tend to be more mature than other representatives of their respective age groups, have carefully developed plans for the future, and normally apply themselves diligently to achieving their goals. They have proved to be excellent students, and, because of their general excellence, several four-year institutions have negotiated two-plus-two articulation agreements with CCAF. The contribution of these students to society in general is significant. Each year, approximately 80,000 veterans leave the Air Force, most of whom are trained for work in civilian occupations. CCAF has enhanced this transition, and its graduates can be expected to earn better salaries (and, consequently, pay more taxes to support the local, state, and national governments) as well as provide better services.

Military/Civilian Partnership

CCAF interfaces with civilian institutions in other ways as well. Extensive training materials have been developed by components of the CCAF system and, since the founding of the college, these materials have been provided to many nonproprietary civilian schools (at their request).

The CCAF president (1979), while addressing a recent session of the CCAF Advisory Committee (consisting of seven nationally recognized authorities in occupational education and representatives of industrial and professional organizations) spoke on the CCAF/civilian educational partnership as follows:

> Flexibility and adaptability have been a central characteristic of the Air Force and its technical education system. The military has been a leader in developing courses based on behavioral objectives, and using occupational and task analysis as the basis for those objectives, and employing programmed instruction and educational technology with a concern for accountability. Full partnership with civilian colleges and recognition by our peers is the goal of our accreditation effort.
>
> To maintain close professional relations we participate in many national and regional educational conferences and meetings. Our staff provides across-the-board interface, while base-education services personnel provide for local-area contact. Perhaps the ultimate evidence of our desire for partnership

with civilian educators is the fact that CCAF degree programs require substantial amount of study to be completed with civilian institutions. We will continue to interface with those educators and educational organizations who can best help us achieve the goals of our College and serve the needs of our students (p. 17).

With a current enrollment of 115,000 students and more than 3,400 graduates in 1979 alone, the CCAF will have an increasing effect on the operation of the Air Force and will continue to share expertise and educational endeavors with civilian educators, while providing graduates with documented skills in many diverse occupations to colleges and communities throughout the nation.

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Douglas E. Testerman has eighteen years' service as both an enlisted man and an officer. He has held significant educational staff positions with the Air Force Institute of Technology and the Air University. He is currently the CCAF curriculum director. He received a doctorate in educational administration and supervision from Auburn University.

Further resources from the ERIC system can provide additional information about issues in occupational education.

Sources and Information: Issues in Occupational Education

Donna Dzierlenga

This concluding chapter highlights the Educational Resources Information Center's (ERIC) references concerning occupational education in the community college. Occupational education is becoming the community college's major function in terms of credit enrollment (Lombardi, 1978). Lombardi observed that the phenomenal growth in occupational courses since the 1960s has changed the community college from a predominantly baccalaureate-oriented institution to an occupationally oriented institution. The role and importance of the continuously evolving technical community college is examined by Moullette (1976). He suggests a model for teaching in the college, based on the fundamental concepts and principles of vocational education, and addresses the need for intergrating support services and job placement personnel into the total process of student recruitment, guidance, and placement. An overview of the past, present, and future states of occupational education is presented in Davenport and others (1976).

State analyses of education, including community college occupational education, are available for Hawaii and Kentucky. A recent

study of the Hawaii community colleges recommended, in regard to occupational education, that career development approaches be implemented in all degree and certificate programs (*Hawaii's Community Colleges: Directions for the 80s,* 1980). Postsecondary, less-than-baccalaureate occupational education opportunities in Kentucky were examined with the finding that, although program availability and participation were good, fragmented governance made it advisable to establish a central agency to improve statewide coordination (Alexander, 1975).

Statewide data on occupational enrollment and student characteristics are presented in a number of state reports. On the basis of 1975–76 enrollment data, California community college students were characterized, with particular emphasis on students enrolled in vocational education (*California Community College Students: A Brief Profile of Those Enrolled, Particularly in Vocational Education,* 1977). Hunter and Sheldon (1980) describe the data collected during fall 1979 in a longitudinal study of students in California community colleges. One section of their three-part report compares vocational and nonvocational students. A report designed to answer the questions most frequently asked about Florida's community colleges includes occupational enrollment statistics (*Report for Florida Community Colleges, 1976–77,* 1978). Patterns of course distribution by subject areas and of courses taken by various majors are examined in a report on Hawaii community colleges (*The Academic Crossover Report, Community Colleges, Fall 1977,* 1978). Although vocational majors were the largest consumers of vocational education courses, liberal arts majors generated 15 percent of the vocational student semester hours. Personal and academic characteristics of students enrolled in Hawaii community colleges are provided in a 1979 report (*Fall Enrollment Report: University of Hawaii, Community Colleges, Fall 1979,* 1979). A longitudinal study of fall 1974 first-time freshmen in occupational/career programs in Illinois community colleges examined student educational intent, persistence, employment, and satisfaction (*Illinois Public Community Colleges Statewide Occupational Student Follow-Up Study: Final Report of a Three-Year Longitudinal Study of Fall 1974 New Students Enrolled in Occupational Programs,* 1979). Statistical and descriptive information about Iowa's community colleges, including enrollment in career divisions and instructional programs offered, is presented in a comprehensive report illustrating the opportunities available (*Opportunities in Iowa Area Schools, 1978–79,* 1979). Occupational programs in Michigan's community colleges are examined in terms of enrollment, student characteristics, and instructional offerings (*Occupational Program Inventory: Michigan Public Community and Junior Colleges,* 1979). Enrollment data by program in Mississippi public junior

colleges are available in a report compiling 1976–77 statistical data (*Mississippi Public Junior Colleges Statistical Data, 1976–77,* 1977). Follow-up data on Texas occupational/technical graduates of certificate and associate degree programs are presented in terms of employment status, ethnicity, sex, and continued academic enrollment (*State Follow-Up Reporting (State Analysis), Data Summary—Fall 1976 Occupational/Technical Graduates. Tex-SIS Postsecondary Student Follow-Up Management Information System,* monograph 4, 1977). In order to reveal trends in community college enrollment in Washington, student demographic and enrollment data for academic year 1977–78 were compiled and compared with figures for previous years (Meier and Story, 1978). Annualized averages for full-time equivalent enrollments by education intent are provided for 1967 to 1978.

Programs for Special Populations

The occupational focus of the community college has attracted a variety of groups interested in employment. The needs of these groups—women, racial and ethnic minorities, the economically and educationally disadvantaged, and the handicapped—have led to a number of programs in the community college. Evergreen Valley College offers the Transition to Technology program, an interdisciplinary program including career advisement and guidance designed to provide an overview of the basic concepts of technology and the career options available in technical fields to those who have traditionally not been exposed to technological education (Blaha, 1979).

Special programs for women are especially important in view of Eliason's finding that few women enrolled in vocational/occupational programs at two-year colleges have had much exposure to vocational aptitude testing or counseling. Only 16 percent of the women surveyed were enrolled in programs that are nontraditional for their sex (Eliason, 1977). The New Vocational Education for Women program at Foothill-De Anza Community College District is intended to help mature women entering the labor force prepare for and enter technical careers (Davidson and Schoenhair, 1976). An annotated bibliography of resources on sex equity has been prepared by Miller (1980a) especially for vocational educators.

Community colleges offer a variety of programs for handicapped and disabled persons. A model program designed to place persons with epilepsy in jobs was developed and implemented at Baltimore Community College. The program approach emphasized active recruitment, supportive counseling, pragmatic job training, sensitive

referral and placement, intensive follow-up, and employer education (Kitt and Schuster, 1976). A manual for handicapped individuals interested in two-year occupational training in the State University of New York or City University of New York systems provides an overview of fifty vocational degree programs and analyzes their characteristics from the special viewpoint of the handicapped (*Vocational Education: A Manual of Program Accessiblity for the Physically Disabled Two-Year College Applicant,* 1977). Model programs, instruction, and resource materials, employment opportunities, and agencies dealing with vocational education for the handicapped are cited in an annotated bibliography compiled by Miller (1980b).

Planning and Evaluating Programs

With the pressure of fiscal restraints and the rapid changes caused by technological advancement, occupational program planning and evaluation has become an essential, on-going process. A number of models and guidebooks have been developed for community college administrators. A model for occupational program planning, beginning with a detailed description of how to decide whether the program idea is worth investigating and concluding with a simulation of the planning system, is presented by Posner and others (1975). Lucas (1974) describes the four phases of market analysis for program development and gives examples drawn from studies conducted by William Rainey Harper College. An occupational/technical program needs-assessment model by which colleges can alter existing programs or develop new ones in anticipation of job market requirements is described by Reed (1979). Winter and others (1976) designed a guidebook to assist occupational educators in the conduct of local program evaluation efforts using the Reality-Based Evaluation System. Other guidelines for planning and evaluation are presented by Beilby and Corwin (1976), Holcomb and others (1978), and Doty (1979).

Individual colleges are examining the job market trends, training needs, and interests of residents in their service area to design vocational programs that meet these local needs. Schultz and others (1977) surveyed a variety of Pinal County residents, including high school and college students, non-students, and employers to aid administrators of the Arizona College of Technology in meeting the educational needs of county residents. Broward Community College undertook a research project to determine the occupational areas in greatest need of vocational training programs, identify job-level competencies for these areas, and make recommendations for the implementation of new pro-

grams (Mehallis and Fair, 1979). An eight-step planning strategy was developed at Edison State Community College to determine which of the proposed new occupational programs had highest priority (Seitz, 1978).

The systematic evaluation of programs within a college assures that changes in local needs are being taken into account. Stevenson and Walleri (1978) describe the evaluation of seven vocational programs at Mt. Hood Community College with a focus on the feasibility, utility, and difficulties associated with making program evaluations meet both internal needs and federal requirements. Survey information gathered from former students and their employers was applied to a cost-benefit model to determine the usefulness of nine vocational programs offered at Chemeketa Community College (Moore and Woodnutt, 1979). A screening mechanism using objective data was developed at Gateway Technical Institute to determine which of the occupational programs offered should be subjected to in-depth evaluation and how frequently the evaluation should be conducted (Becker, 1976). Moraine Valley Community College determined which programs needed in-depth evaluation on the basis of placement, unit cost, retention, and attraction data (Baratta, 1977). Evaluation techniques were developed at Oakton Community College with the goals of improving the programs and communicating needs and findings between users and trainers (Kirby, 1978).

General Education

As a market-oriented vocational philosophy has come into administrative acceptance, general education has faced conflict and decline (Sanborn, 1979). The issue of vocational versus general education is examined in detail in a group of papers presented at the 1975 annual meeting of the American Association of Community and Junior Colleges (Tillery and others, 1975). Tillery rejects the career-versus-general education dichotomy and builds a case for the synthesis of the two discussing ethnocentrism, academicism, departmentalism, skepticism, and elitism as possible threats to general education. The historical, current, and future relationship between career training and general education is analyzed by Batmale (Tillery and others, 1975). Porterfield (Tillery and others, 1975) identifies the reasons for the current low status of general education and recommends that educators emphasize the common content of general and career education courses and reexamine the assumption that general education must precede vocational and professional education.

The conflict between general education and occupational education is frequently expressed in conflict between the general education instructors and the vocational-technical instructors (Morgan, 1978). These staff members should work together on correcting and constructing tests, developing and writing various instructional materials, and planning extracurricular activities in order to improve instruction and communication and to increase regard for the total school concept. To further resolve the conflict, general education courses must be included at the planning level of the curriculum so that administrators can see the connection between general education concepts and major instructional area philosophy.

In an effort to meet the special needs of career students, Hagerstown Junior College has developed an interdisciplinary humanities course that combines art, drama, and music. Instructors attempt to synthesize the diverse disciplinary components into a common body of knowledge that students can draw upon and learn (Parsons, 1978). Edwards (1980) explains another method of infusing humanities education into vocational curriculums. An instructional module dealing with a single conceptual unit of humanities subject matter is included in an occupational course.

Business and Industry Associations

Community colleges are actively seeking opportunities to form closer relationships with business and industry. The Bay de Noc Community College program "Contracting with Business and Industry" focuses on job opportunities in areas where in-depth, on-campus instruction cannot be economically provided by the college (Gold, n.d.). The business contracts to supply twelve hours of instruction each week, for which the college pays a nominal amount, for the duration of the training period. Concurrently, the student enrolls for a minimum of eight hours of on-campus instruction, which supports the career objective. The program seeks to remedy the need for unskilled workers to fill local job openings by training unemployed, unskilled teenagers. Hagerstown Junior College and the Certain-Teed Corporation initiated an instructional program to upgrade the skills of corporate first-line supervisory personnel and to increase the visibility of the college's management program among local businesses (Beman and Parsons, 1978). The project experience suggested a generalized model for future use, which requires that college planners carefully evaluate resources, identify the customer, sell only what can be delivered, advertise flexibility, publicize successes, and recognize and meet their competition for enroll-

ments in terms of cost, quality, and timeliness. Katz and Flugman (1977) describe a program for business, industry, and government agencies designed to increase the employment potential of disabled community college students by increasing employer awareness and responsiveness. They also outline approaches that can be used in developing similar programs and suggest ways that industry and community colleges can improve their relationships with disabled persons. The education-to-work councils established in six communities nationwide by the American Association of Community and Junior Colleges are examined in detail in the second-year report (*Community Education-Work Councils: The AACJC Project Second Year Report,* 1979). Council activities and problems, budgets, institutional impacts, future plans, and program assessments are presented for each of the six locations.

Advisory committees for vocational-technical programs are used by community colleges to gain valuable insights from and to build useful associations with representatives of local business and industry. Landry (1977) reviews the literature related to occupational program advisory committees, discusses federal regulations, and presents a model for establishing and maintaining a local advisory committee. Castler (n.d.) suggests that the effectiveness of advisory committees can be increased by giving members more control over the conduct of the program, considering their recommendations, providing them with more recognition, and involving them in long-range projects to support the college. The Walla Walla Community College handbook for members of vocational education advisory committees describes the role and function of advisory committees, explains the three types of advisory committees used by the college, provides a checklist of functions to serve as a guide for committee activities, and gives guidelines for the organization and operation of advisory committees (Van Ausdle and Peterson, 1979).

Colleges are also working with businesses through cooperative education programs and CETA-funded programs. A complete review of cooperative education programs in the two-year college is given by Streb and Hammen (1978). Their manual gives general information about cooperative education and explains in detail the planning and administering of cooperative education programs. Another cooperative education guidebook has been developed especially for coordinators and administrators of vocational education programs in Hawaii's community colleges (*Cooperative Vocational Education: Guide for Coordinators and Administrators,* 1978).

A 1979 survey of AACJC-member colleges revealed that 88.6 percent of the respondents participated in CETA activities at some level

(Olson, 1977). Mackie and Eppley (1978) provide an in-depth examination of the cooperative relationship between Cuyahoga Community College and the Cleveland CETA prime sponsor to illustrate the role community colleges can play as contractors supplying research, administrative expertise, and training programs under the Comprehensive Employment and Training Act of 1973.

Innovative Strategies

Community colleges are adopting innovative instructional strategies and delivery systems to increase training effectiveness. The Alternative Learning Experiences program at Whatcom Community College was designed to provide learning opportunities for students outside the traditional classroom, specifically through learning contracts, advising services, on-the-job training programs, correspondence courses, and competency-based vocational programs (*A Cost-Effectiveness Study of Alternative Learning Experiences at Whatcom Community College, 1978–1979,* 1979). Campbell (1977) describes the Advanced Instructional System of the Community College of the Air Force and concludes that advances in educational technology will change the occupational instructor's role to that of training guidance counselor and adviser.

Use of instructional television in vocational education is likely to become increasingly accepted. Stalcup and Hall (1978) conclude that the continued growth of occupational programs will further substantiate the need for instructional television because of the need to teach manipulative skills that lend themselves to visual presentation. McClure (1976) reviews various studies of the effectiveness of televised occupational-technical courses and describes the efforts of the Dallas County Community College District to develop an occupational television curriculum.

Approaches being used to serve better occupational students include cognitive style assessment competency-based curriculums and open-entry/open-exit enrollment policies. Cognitive style information was established as an important asset to occupational instruction and counseling in two-year colleges in New York as a result of Project Priority: Occupational Emphasis (Rotundo, 1976). Pensacola Junior College identified and evaluated the job-entry competencies of seventeen vocational programs as part of a project to convert the programs to competency-based education (Walker and others, 1979). A program that developed competency-based curriculums in six vocational/technical programs at Kirkwood Community College increased the satisfaction of students and employers and the involvement of business and

industry in the educational process (Poorman and Fleckenstein, 1978). Ferguson (1979) studied open-entry/open-exit enrollment in five vocational programs at Mississippi Gulf Coast Junior College and concluded that the open-entry/open-exit policy served more students. Appel and Roueche (1978) examined the factors that contribute to the successful installation and assimilation of educational innovation in vocational/technical programs.

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