Contending that the nation's community colleges should improve the training of future workers by building a national job training program based on successful components already in existence, this paper reviews seven monographs published by the National Council for Occupational Education (NCOE) since 1985 which identify, highlight, or address essential elements of such a program. The following monographs are reviewed: (1) "The National Council for Occupational Education: The First Ten Years," highlighting the NCOE's focus on human resource development on a national level; (2) "Technician Supply and Demand: How Can Community and Junior Colleges Help Fill the Need?" discussing an NCOE survey of electronics employers' needs which indicated the important role of community colleges in job training; (3) "Criteria for Excellence in Associate in Applied Science (AAS) Degree Programs," reviewing 14 criteria to increase AAS degree program effectiveness; (4) "Integrating the Humanities into Associate Degree Occupational Programs," focusing on the importance that employers place on non-technical skills; (5) "Occupational Program Articulation," identifying model articulation and "tech prep" programs nationwide and considering articulation an essential element of a national training program; (6) "Community Colleges and Economic Development," pointing to the concept of economic development as a responsibility of community colleges and describing the essentials and characteristics of economic development programs; and (7) "Productive America," proposing broader minority representation in the community colleges and changes in state and federal funding programs. (ECC)
TOWARD A NATIONAL JOB TRAINING PROGRAM

Prepared for:

THE NATIONAL COUNCIL FOR OCCUPATIONAL EDUCATION

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TOWARD A NATIONAL JOB TRAINING PROGRAM

It can be disturbing to get criticism from the outside world that may be more perceptive than that which comes from those of us on the inside. On February 9, 1990, the *Wall Street Journal* produced a special report on education which spotlighted, among other things, the dilemma of the community/technical college. Faced with the task of training the nation's potential workers, or at least bearing the brunt of that responsibility, the report believes that community colleges are falling behind and just may not be able to do the job. Succinctly put by the non-educator author of the article, there is "need for a much closer fit between what the market wants and what the colleges provide." The lack of fit applies across the board to quantity, timing and type of out-put. Complicating the problem, and perhaps a causal factor, is that the community/technical colleges are trying to do the job with a "... student body that is declining in quality." Students are often older, needier, and poorly prepared. Increasingly women, minorities, and immigrants add to the mix. Further complicating the problem is the need not only to prepare our students for jobs but to make both present and future workers more productive to provide a competitive edge for the United States in the world economy.

About the same time this past February that the *Wall Street Journal's* special report on education appeared, President Bush, in pursuit of his earlier identity as the "Education President," in a speech at Charlottesville, Virginia, promised to revitalize America's public schools to establish "clear national performance goals that will make us internationally competitive." In the same vein, but broader in scope, Dale Parnell advocates a national human resource development policy to coordinate national training needs. There are national strategies for drugs, transportation, clean air, even child care, but not for national job training. With the problem so obvious that non-educators point it out and with the challenge offered by Presidents Bush and Parnell, can we conceptualize what a community college-based national human resource development policy and program might be?

Where to start? Perhaps the way to lay out a national program is not to conceptualize it in its entirety at the start, but rather to build from components. Certain possible components such as national surveys of employer needs and studies of articulation with high school programs have emerged. By putting them together in a logical sequence we may arrive at the grand plan almost as an afterthought. At least some of these components of a national program may already be identified and researched through the seven monographs produced since 1985 by the National Council for Occupational Education (NCOE). Following is an overview which suggests how the individual monographs contribute to a national program, a community college-based human resource development program, still incomplete here in 1992, but on course for the future.

Within the overview, footnotes indicate where each of the seven monographs fit into the sequence of components contributing to a national job training program. Following the overview, the relevant monographs are identified by footnote number, title and a brief summary.

Almost by default, since no other organization apparently has taken up the challenge, NCOE has obviously become the self-appointed driving force, catalyst, organizer, and clearinghouse for a community and technical colleges-based national job training program. In the Council's judgment a reasonable starting point for a national program is to work for a closer fit between what the market wants and the colleges provide. One obvious approach is the survey of what the employer needs and wants as was done by NCOE with the cooperation of electronics associations and the industry itself. What the market wants is at least partially provided today by the traditional curriculum cornerstone, the Associate in Applied Science Degree Program (AAS) and its subordinate certificate programs. What was missing, but is now available, are nationally
accepted criteria for excellence which hopefully will ensure more effective training and an improved image of the AAS degree among employers. Within the AAS degree program, the so-called “soft skills,” such as adaptability to change and working together in groups, are an integral part of effective occupational education and are viewed by NCOE research as an indispensable complement to technical skills. The AAS degree program, blending technical skills with the Humanities, does not stand alone in the educational hierarchy but needs a “before” and “after.” Since community and technical colleges provide the “linking pin” between educational levels, they are in the best position to promote articulation. Currently the 2+2 programs researched by NCOE indicate that working with high schools promotes the saving of money and effort plus reducing drop outs. Subsequent transfer to four-year colleges through 2+2+2 programs, further smoothes the educational route.

The five elements of a national program cited above, have centered around improving the traditional educational service to business and industry through the community and technical college. Beyond this historic curriculum and course-oriented effort of preparing people for jobs, the newer and much broader thrust of promoting economic development adds a whole new dimension of commitment to business, industry and the economy in general. In this full service approach there are great opportunities, but also pitfalls. Fortunately, through the research of NCOE, the criteria for effective operation of economic development programs are now in place. This expanding of the role of the community and technical college moves us from the local and national scene to a global perspective. The global economy in which we are competing today requires a better trained and more productive workforce from sources largely untapped - women, minorities, and immigrants. How this can be accomplished, along with organizational and financial support from strengthening government agencies, is suggested in the latest NCOE monograph.
NCOE Monographs

1. **The National Council for Occupational Education: The First Ten Years.**

Depicts the history, membership, purposes, and accomplishments of the NCOE as an affiliate council of the American Association of Community and Junior Colleges, and the driving force behind a community and technical college based national human resource development program.

2. **Technician Supply and Demand: How Can Community and Technical Colleges Help Fill the Need?**

Surveys 293 electronics employers to determine how community and technical colleges can best meet the needs of this industry as to basic skills, literacy, retraining, and “high tech.”

3. **Criteria for Excellence in Associate in Applied Science Degree Program.**

Proposes 14 criteria for excellence in the Associate in Applied Science Degree programs to be networked among community and technical colleges to improve consistency, more dependable outcomes, and greater acceptability by employers.

4. **Integrating the Humanities into Associate Degree Occupational Programs.**

Identifies significant non-technical skills from the Humanities as seen by faculty and employers. Results are currently being field tested.

5. **Occupational Program Articulation.**

Reports survey returns from 205 two-year institutions in order to identify and evaluate articulation efforts between community and technical colleges and high schools (2+2 or “tech prep”). Describes model programs along with identifying criteria for success.

6. **Community Colleges and Economic Development.**

Identifies the essentials for effective economic development programs from the experiences of 442 community colleges. Determines the extent of economic development programs and the variety of activities within the programs.

7. **Productive America.**

Landmark study detailing the eroding of United States competitiveness in a world economy. Report #1 sets the challenge for community colleges to develop a more productive workforce to be drawn in large part from special populations including women, minorities, and immigrants. Report #2 proposes substantial changes in federal and state funding programs in order to better support community and technical college efforts.

For an in-depth view of the seven monographs the following abstracts illustrate not only the individual efforts of NCOE members, but a broad-based commitment of NCOE to crystallize for community and technical college leadership the directions their colleges must take if the United States is to compete effectively in the global economy.
The National Council for Occupational Education: The First Ten Years

The National Council for Occupational Education (NCOE), founded in 1975, is an affiliate of the American Association of Community and Junior Colleges (AACJC). Its purpose is to promote and speak for post-secondary occupational education. The Council is presently composed of over 600 post-secondary teachers and administrators as well as members from business, industry, labor, and government. Members who helped develop NCOE are identified in the monograph which was prepared by Dr. John Grede, founding president of NCOE.

Over the 15 years of its existence NCOE has proposed and monitored legislation, closely followed federal and state administration of occupational education programs, held conferences, and maintained close liaison with practitioners in the field. Although NCOE’s priorities have varied with time and the needs of members, the unifying theme has been that of promoting the concept of a national human resource development program and identifying its components. Not content with simply identifying components, NCOE has followed up its studies and programs with field trials.

Almost without planning it that way, the seven monographs produced to date by NCOE, with encouragement from AACJC, provide a solid base for a community/technical college-based national job training program. NCOE task forces now and in the future will be able to build on that base.
**Technician Supply and Demand: How Can Community and Technical Colleges Help Fill the Need?**

This NCOE monograph was developed under the direction of Dr. H.J. Owen, President of Tri-Cities State Technical Institute in Blountville, Tennessee. Dr. Owen drew on his experience with the North Carolina Department of Community Colleges and his contacts with national community and technical college organizations as well as the Electronics Industries Association to develop and disseminate the survey on which the monograph is based. The focus of the survey was electronics, an area where community and technical colleges have been active since the 1950's and which is basic to many industrial and engineering-type occupations including "high tech." Electronics further undergirds the transition of our economy from a manufacturing base to a computerized information base.

Twenty-three community and technical colleges from 15 states gathered data from the electronics industry using a survey form which is included in the monograph. Results of the survey were analyzed and compared with contemporary studies by the American Electronics Association and the American Society for Training and Development to present a composite of the employment situation. There were 353 industries participating in the survey.

Results indicate that community and technical colleges remain a major untapped resource of training. Schools of all descriptions provide 45% of technicians but community and technical colleges contribute only 6%. Non-school providers, largely business and industry, contribute 55% of training which helps account for the $30 billion spent annually by business and industry on employee training. The survey respondents, however, apparently saw a different pattern emerging. Thirty-seven percent saw the associate degree as the minimum educational preparation for technicians versus 10% for the high school diploma and 11% for the bachelor's degree. The apparent area of demand for community and technical college effort appears to be where the largest numerical growth is expected: the electronic assembly and basic technician level. Respondents advised caution in moving into "high tech." Smaller companies with 50 or fewer employees saw greater need generally for electronics technicians than did larger employers.

Basic skills and competencies needed by technicians were identified. The first three were basic electronics, mathematical competence, and schematics/blue print reading. In a general summary of training needs the consensus appears to indicate that the needed role for the 1200 community and technical colleges is to prepare skilled workers for specific occupations and to provide literacy training, upward mobility, and retraining for present workers to redirect them toward skilled worker shortages.
Criteria for Excellence in Associate in Applied Science Degree Programs

This is the third in a series of monographs produced by NCOE and centered on the theme of a national program for human resource development based upon community and technical colleges as a primary delivery agent for occupational training and support services to business and industry. The curricular cornerstone for the occupational training component of the community college mission is now the Associate in Applied Science Degree (AAS). As long ago as 1980 the AAS degree became the choice of the majority of two-year college graduates and thus supplanted the more traditional academically oriented Associate in Arts Degree.

In the effort to make the AAS degree more effective and more universally acceptable, NCOE proposes 14 criteria. Included are such critical areas as outcome orientation for general education as well as technical. Recommendations are made for the proper proportion of each. With extensive feedback from faculty, administrators, and employers, these criteria for excellence were developed with the objective of promoting national consistency in titles, length, components, and outcomes for AAS degree programs. Such consistency aims to promote improved image and acceptability of the degree among employers and possibly 4-year institutions. Consistency among programs nationally does not necessarily imply that they be identical. However, differences between programs with the same title and designed to prepare for the same occupational specialty should be based on defensible differences such as employer requirements. This approach of consistency and comparability of programs would necessarily have to be consistent with and probably dependent upon national consensus as to the competencies necessary for successful employment. Improved communication and continuous networking among community/technical colleges appears to be the necessary first step. Parenthetically, an excellent precedent and useful model for our networking is the Servicemembers Opportunity College (SOC) which networks occupational programs in over 500 colleges. The programs are geared to military job needs and have developed surprising organization, consistency, and comparability, thereby facilitating better transfer and quality control.

This monograph was co-chaired by Dr. Clifford Peterson, President of Quinsigamond Community College in Worcester, Massachusetts and Dr. Terry J. Puckett of Hinds Junior College in Jackson, Mississippi.
Integrating the Humanities into Associate Degree Occupational Programs

The impetus for this three-year study came from a need to expand upon one of the criteria for excellence recommended for the AAS degree program. That criterion recognized the need to blend technical competence with such general education skills as reasoning, computing, communicating, and social skills in dealing with others. Support for this concept came broadly from business and industry where one chief executive officer indicated his firm was wary of hiring engineering graduates from certain schools because they emphasized individual laboratory-oriented problem-solving, whereas he needed people who could work in a group. More succinctly put, one employer indicated “... we hire for the ‘hard’ skills but fire for the ‘soft’ skills.” From the health field came the comment that hospitals can teach or upgrade technical skills but what about human issues like death and dying? From this recognized need within the business and industrial community came the study co-chaired by Dr. Clifford Peterson, president of Quinsigamond Community College in Worcester, Massachusetts, and Dr. Philip Pecorino, professor at Queensborough Community College in Bayside, New York. The chairmen represented the National Council for Occupational Education and the Community College Humanities Association working together in the Shared Vision Task Force with financial support from the Fund for the Improvement of Postsecondary Education (FIPSE).

The report of the task force identified ten unique and significant contributions of the Humanities to postsecondary education. These were then submitted for review to a representative group of community/technical college administrators as well as faculty from both the Humanities and Occupational Education. This was followed by reactions from business and industry. All categories of reviewers, both educational and otherwise, agreed that the appreciation of the importance of adapting to change was primary. Community and technical college personnel added to the priority list the ability to understand and empathize with others. Most importantly, employers in forums held in five major US cities affirmed the importance of graduates who not only had technical skills but also the ability to work with others, solve problems, make decisions, and adapt to change. The Shared Vision Task Force concluded with 18 recommendations for the Associate in Applied Science Degree curriculum. Field testing of the recommendations is currently in progress in a project directed by Dr. Rodney Cox, president of Butler County Community College in El Dorado, Kansas.

A listing of the colleges and employers involved in the study plus a bibliography are included with the monograph.
Occupational Program Articulation

One of the basic concepts within a national program for human resource development is that of articulating the various agencies providing occupational education in the United States. An obvious area of articulation is that of tying together occupational programs at the high school and community/technical college level, as well as between these two-year colleges and four-year institutions. Such articulation helps ensure economy of effort, a planned sequence of skill building, and an encouragement for young people to continue in and beyond their current education level not only to maximize their own potential but to meet societal needs for higher level technical skills. In order to look more closely at the high school/community college connection, NCOE established the Occupational Articulation Task Force in 1989. A survey, a copy of which is included in the monograph, was designed to identify and evaluate articulation activities as well as to clarify articulation terminology. Model programs were identified and catalogued along with descriptions made available from the six Regional Centers for Curriculum Coordination of Vocational-Technical Education. Mailings of the survey went to 675 institutions with a surprisingly small return of 30%. Most of the responses came from large institutions with enrollments over 5000. In itself this was an important finding which apparently indicated a strong need for encouragement and development.

Analysis of the responses identified a consensus as to the meaning of such terms as articulation, advanced placement, "tech prep," 2+2, 2+2+2. Program outcomes expected by respondents included improved student performance, better faculty cooperation, and reduced costs. Twenty-seven percent of respondents indicated they were required to articulate by state regulations. By area of specialization, 86% of respondents indicated they had articulation agreements in business and office technologies followed by roughly half of the respondents with articulation agreements in engineering, industrial, and health technologies. Only 26% had such agreements in public service programs. Ninety percent of respondents indicated they had formal articulation agreements. In terms of meeting their goals only 42% were satisfied, with the balance indicating only partial success. Broken down into categories, 85% of responses noted improved student and program outcomes, 65% indicated improved faculty cooperation, and approximately 33% showed a reduction in overall operating costs. The keys to success, according to respondents, were leadership and commitment from the top, early faculty involvement, a focus on mutual goals with turf minimized, written agreements, and development of mutual trust.

The seven-person task force was chaired by Billy J. Parish of the Community College of the Air Force and Dr. Raul Ramirez of El Paso Community College, El Paso, Texas.
Community Colleges and Economic Development

During the 1980's the concept of economic development began to emerge as a responsibility of community and technical colleges. In effect, economic development meant an expanded and all-encompassing effort to support business and industry as well as the general economy far beyond what was done historically through degree, certificate, and continuing education programs available to all students. For a number of two-year colleges, the promotion of economic development meant a fundamental change in the mission of the institution. As a result the NCOE task force, created in 1985, sought to explore the extent of involvement and the kinds of activities in economic development. A questionnaire, a copy of which is included in the monograph, was mailed to virtually every two-year college in the United States.

These 442 responses formed the basis for the conclusions which we hope will prove helpful to those educators comparing national activities and practices with those at their own college. For those institutions trying to start economic development programs, the reported results provide a solid start-up basis. Especially relevant is the identification of the wide range of activities that are carried on in economic development programs. Some half-dozen elements for success were extracted from responses. Evaluation of the college's role in local economic growth and development appears to be a primary requisite for success. Other criteria include establishment of institutional objectives with specific policies and procedures, a mission statement of the college including economic development, and a specifically designated administrator. Finally, financial support is critical, along with in-service training for faculty and staff.

There appears to be little if any resistance to economic development programs from legislators, college boards, administrators, and faculty. Where a state-wide initiative for economic development exists and financing is available from state agencies, community and technical college progress in economic development is markedly better.

In addition to state support, credit for expansion of economic development must be given to the AACJC, NCOE, the National Postsecondary Alliance, and the Keeping America Working Project sponsored by the Sears Foundation and the AACJC. The NCOE Task Force on Economic Development was co-chaired by Robert Moses of Indian River Community College at Fort Pierce, Florida, and Dr. Russell Paulsen of North Central Technical Institute at Wausau, Wisconsin.
Productive America

This most recent monograph of NCOE, prepared under the direction of Dr. Ted Martinez of Dallas Central Community College District and Dr. Donald B. Smith of the City Colleges of Chicago, has the shortest title but in many respects is the capstone of the entire monograph series which began in 1985. It succinctly expresses the problem of preparing the workforce for the year 2000, a workforce which must be more productive than the present and yet must be drawn increasingly from special populations including Blacks, Hispanics, Asians, returning women, dislocated workers, disabled workers, and those with obsolete or deficient skills. This is the challenge, particularly for community and technical colleges, if we are to counter the erosion of U.S. competitiveness in a global economy where more and more jobs are moving to third world countries. Added to the problem of preparing new workers is that of upgrading and retraining current workers, not only to keep current with changing technology but to meet the different demands of a growing service-oriented economy.

Fifteen recommendations for community and technical colleges willing to accept the challenge are presented. These recommendations are:

- Include local workforce responsibility in the mission statement.
- Identify special populations in the college district and gather data on numbers, locations, and socio-economic status.
- Review current programs to make sure they are in line with current local employer job requirements.
- Make sure the college placement office directly assists successful students in obtaining a job.
- View local business and industry as full partners so as to pool resources in activities aimed at solving labor shortages.
- In brief, topple the ivory tower perception and come out of the college office into the community and workplace.

These recommendations for two-year colleges depended heavily on four regional forums held in Boston, Chicago, Miami and Phoenix for some 150 employers who made their own recommendations and reacted to others.

As a background for community and technical colleges to accept a major role in human resource development, the monograph details the history and economics of our declining competitiveness in the world economy along with the contributing factor of a relative decline in U.S. productivity. In addition, our growing dependence on special populations, the problems peculiar to such groups, and the unique capacity of community and technical colleges for working with special populations are presented in detail.

As additional help for interested two-year colleges, the monograph describes ten model programs which are moving special populations into the mainstream of employment. They are:

- Asians preparing for hotel employment in Chicago, Illinois
- Cambodian refugees learning skills in Long Beach, California
- Hispanic and Haitian refugees preparing to work in Fort Pierce, Florida
- Special high school level programs for immigrants with limited English proficiency in New York City, New York
- Upgrades for telephone workers in Cleveland, Ohio
- Vocational skills training for correctional inmates in El Paso, Texas
- Employment preparation for ADC mothers in Dryden, New York
Preparing ADC mothers for child care work in Jacksonville, Florida
- Preparation for technical training and employment for single mothers and displaced homemakers in Memphis, Tennessee and Lake County, IL.

The second part of the monograph, labeled as Report #2, moves from the future role of community and technical colleges into the role of the federal and state governments in providing for workforce training. The report reviews current federal legislation and its impact on two-year colleges. Further, it makes recommendations for changes in current legislation and programs in order to facilitate increased and more effective use of two-year colleges as a primary delivery force for workforce development. Specific analyses are made of the Job Training Partnership Act (JTPA), Carl D. Perkins Vocational Education Act, Titles IV and VIII of the Higher Education Act, State Job Training Programs and several others. The reviews of legislation and programs provide very useful briefs of federal and state funding bases and how they relate to community and technical colleges versus other components of public education. Report #2 includes general policy recommendations on legislation for two-year colleges, for national organizations representing two-year colleges, and for the United States Department of Labor.

Report #2 concludes with suggestions which may be appropriate for new NCOE monographs either alone or in conjunction with relevant governmental agencies, educational agencies, or employer groups. Needed are specific national standards for jobs along with competency tests to measure student progress towards those standards. Accompanying this should be a more uniform documentation or certification of accomplished workplace skills. Workplace literacy needs and deserves full study. The entire area of interrelationships between community and technical colleges and governmental agencies warrants in-depth study on such specifics as increased involvement of community colleges in JTPA and JOBS, locating Job Service offices on two-year college campuses, and better and more specific relationships between community and technical colleges and the U.S. Department of Labor.

This monograph, Productive America, was prepared under a grant from the U.S. Department of Labor with assistance from the American Association of Community and Junior Colleges and the Dallas County Community College District.