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ABSTRACT

Various experts in education, government, industry, and labor contributed to the sixth annual industrial relations symposium (sponsored by the graduate program at St. Francis College) which focused on career education as its basic theme. Participants from a seven-State area also represented the four areas. Symposium proceedings consisted of seven presentations and the moderators' reports of panel discussions. Presentations were: "Career Education--More Than Just Educators" (U. S. Office of Education senior program officer); "The Role of the Chamber of Commerce in Career Education" (Chamber of Commerce of the U. S. executive); "Program Articulation and the Career Lattice Concept" (community college president); "Competency Based Education and Criterion Referenced Measures" (vocational-technical school associate director); "Labor's Manpower Arm" (AFL-CIO Human Resources Development Institute area representative); "Cooperative Education and the World of Work" (cooperative education coordinator); and "Careers in Environmental Protection (U. S. Environmental Protection Agency administrator). The three panel leaders represented counselor education at a State college and research and basic education areas of the Pennsylvania Department of Education. (EA)

CAREER EDUCATION AND THE WORLD OF WORK

A SYMPOSIUM

September 27-28, 1973

Graduate Program in Industrial Relations
Saint Francis College
Loretto, Pa.

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Edited by
MICHAEL DUDRA

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PREFACE

The sixth annual symposium, sponsored by the Graduate Program in Industrial Relations at St. Francis College, was devoted to the emerging field of "career education". As in the past, the basic theme of the symposium was discussed from various angles by experts from education, government, industry and labor. These four groups were also represented by those in attendance - coming from seven states.

The editor of these proceedings wishes to express his most sincere thanks to Dr. Edward H. Lareau, Associate Director for Research at the Admiral Peary Area Vocational Technical School in Ebensburg, Pa. (co-sponsor of the symposium), who served as the symposium co-cordinator, and to his able assistant Mr. Daniel J. DiLucchio, a research associate at the Admiral Peary School. They both worked very hard to make the symposium a success.

Dr. Michael Dudra

CAREER EDUCATION: MORE THAN JUST EDUCATORS

JOYCE D. COOK

SENIOR PROGRAM OFFICER, PROGRAM DEVELOPMENT AND OPERATIONS BRANCH, U.S OFFICE OF EDUCATION, WASHINGTON, D C

In response to the many observations of Education's unfulfilled role in easing the transition with which youth and adults find for themselves useful and productive places in the economic system, the U.S. Office of Education has suggested a new focus for education. And in its support of the concept of career education, the Office of Education, in the words of William F. Pierce, Deputy Commissioner of Occupational and Adult Education, has suggested that we "use the streets and highways as hallways to classrooms in shops, stores, offices, factories, and service agencies in the community" as a part of our new system of education.

For the purpose of the deliberations you are about to engage and in your efforts to form new systems of communication between education and the employing community, you may want to view career education as a K-Adult system of education which does four things. (1) introduces people to their options in the world of work; (2) permits them to explore and widen their options; (3) permits them, through a wide variety of career preparation programs, to embark on a successful career of their choice, and (4) permits them to retrain or upgrade themselves both in keeping with the demands of technological change and in keeping with their own desires for greater self-fulfillment.

There is reason to believe that as youngsters are made aware of their career options and are permitted to explore them, both the demand for career preparation opportunities and the diversity of those demands will increase. Once youngsters or adults have identified a career goal which is in keeping with their interests and desires, then it appears essential that every possible avenue be explored in an effort to assist them in mastering the skills necessary for successful participation in that career area. This implies that a comprehensive career education program would necessitate a broad range of career preparation opportunities including cooperative education and that career preparation programs must gear up both in terms of the diversity of preparation programs, in terms of the diversity of training stations in the community, and in the number of participants the programs are able to accommodate. With a concept of career education as a backdrop — a system which is appropriate for the career development and preparation needs of all people, those gearing for a professional career as well as those gearing for a skilled occupation — you may find that some or all of the following seven issues are pertinent to your discussions

The first issue relates to the interesting question of how we can accommodate the wide range of skill development needs of students generated by the career education system. At this point in time there seems to be a wide gap between the expectations of students who will make career choices throughout their years of schooling and the range of preparation opportunities that will be

available to them prior to their graduation. The issue is not just related to size of school because, without regard to size, no one school setting could realistically install a separate course for every possible career interest. Even if this were possible, the types of career choice would tend to vary from one year to another thereby rendering committed resources unproductive for a period of time or entirely obsolete. It seems logical, therefore, that a career education system will create demand for diverse career preparatory opportunities and will necessitate a major expansion of cooperative education as one practical option in accommodating the ever-widening range of interests that will be expressed by students in secondary, postsecondary, and higher education institutions.

Issue number two relates to whether cooperative work experiences really are broadly viewed as being a desirable and valid segment of existing programs of career preparation. It would seem that not all of those currently preparing persons for careers genuinely believe in community experiences as an integral part of education. And so, it appears important that we examine the lack of emphasis on cooperative education in present career preparation programs and in the emerging career categories and that we draw important implications surronding this lack of emphasis for program decision makers in career education.

The third issue, and a crucial one, has to do with improving the relationship between career preparation programs at the secondary, post-secondary, apprenticeship, military, and higher education levels. It appears that we should concern ourselves with facilitating the placement of persons in such career preparation opportunities and, at the same time, we could vastly increase the capacities of these educational institutions to train persons by reducing the time spent in each formal training program by a learner who has already completed a similar program at a lower level on the education ladder. There is, we are told, much similarity both in the processes of mastering the skills essential for successful employment and in the content of instruction. When this is true, we must continue to encourage positive relationships between the programs. We know that in some places secondary students are sometimes placed in cooperative arrangements with apprenticeable occupations and that advance placements occur in post-seconary programs. We believe, however, that these kinds of arrangements are not extensive. When learners either have to postpone their career preparation until they begin a new educational program or else repeat what they have already learned, then we have negated one of the expectations we have for career education -- the expectation being that, within a carefully articulated career education system, we can facilitate upward career mobility within a given career area.

Related to this factor is the question of credit for cooperative experiences. In the past, there has not been a clear recognition of a student's experience in a cooperative program for purposes of applying these hours of instruction and employment experience for advanced placement in apprenticeship, post-secondary, and higher education programs. In some cases, the experience gained in a cooperative program received no consideration, thereby forcing a repetitive learning experience. The practice of granting credit for prior experience, admittedly is not new to many local educational institutions but we do believe that such institutions should have greater awareness of the cooperative education programs operating in their jurisdictions.

Among the minimum training and administrative standards issued by the Bureau of Apprenticeship and Training of the U.S. Department of Labor, for example, is one related to credit for previous experience. Registered apprenticeship programs may grant, in behalf of an applicant, "credit toward completion of apprenticeship for applicable work exerience, training, or demonstrated proficiency with commensurate wages." We would hope that this encompasses cooperative training in industry because we believe that young men and women should be able to make a more rapid transition from school to an established career in an apprenticeable trade. While the issue appears partially resolved by such actions by the Department of Labor at the national level, the more important practices at the local level appear less promising.

The fourth issue has to do with the question of liability resulting from school related student injury in off-campus sites. Both schools and employers share in this concern. We cannot ignore the potential consequences of student injury, especially when this occurs in non-compliance of existing laws. To a degree, this concern serves to inhibit program adoption by schools and reduces participation of employers. Safeguards are needed and this can best be accomplished through education and public information program.

Legislation designed to protect young people from exploitation or from work which might impair their health or interfere with their education admittedly places restrictions on student employment. The Fair Labor Standards Act (FLSA) sets 16 years as the basic minimum working age for non-agricultural occupations in interstate commerce, but bars workers under 18 years of age from employment in occupations stipulated as hazardous by the Secretary of Labor. The employment of 14-and 15-year olds will be discussed later.

Since State laws supplement Federal legislation, employers are bound by at least two sets of regulations, and experience has shown that frequently employers are poorly informed as to what the child labor standards are. Many employers do not realize, for example, that only 5 percent of all jobs are covered by the Hazardous Occupational Orders and that, therefore, 16- and 17-year-olds may be employed in most occupations. If it is true that, because of their lack of knowledge, employers tend to refuse to hire students out of fear, then it becomes important to improve our communication procedures.

Even though a certain amount of protection is derived from our child labor laws, it is more important to undertake activities which will serve to prevent injuries. The Occupational Safety and Health Act of 1970 serves as a primary safeguard. The stated purpose of the Act is "to assure so far as possible every working man and women in the nation safe and healthful working conditions and to preserve our human resources." Among the responsibilities of the employer is that he must keep his employees informed of hazards involved in the job.

We, in education, must also maintain our vigilance in emphasizing safety. It should become a part of the instructional program for every cooperative education student. One avenue for assuring this is through the training agreement in which the training plan would call for safety instruction both in the school and on the job.

Highlighting our mutual concern for the safety and well-being of our students who are using community resources for educational purposes should be one of the more important concerns of this symposium.

The fifth issue is that of the inclusion of students between the ages of 14 and 16 years of age in programs of community-based education. As stated in the Child Labor Regulation 3, youth under 16 cannot be legally employed on school time. Consequently, cooperative programs in the past set the minimum age for participation at 16. While Regulation 3 may have influenced the age group served, it was generaly accepted that the utility of cooperative instruction was greatest just prior to entry into full-time employment.

Unfortunately, however, too many youth do not advance far enough in the educational system to avail themselves of cooperative education. In other words, they wait for their 16th birthday so they can leave what is for many of them an unrewarding environment.

This, then, is a somewhat circuitous route to the issue at hand. Assuming that child labor laws are altered -- and we believe Regulation 3 probably should be — to what extent shall we encourage the development of cooperative learning experiences for persons aged 14 and 15? What should be the nature of instructional objectives established for such programs? To date such programs have been experimental, should they now become regular offerings? Career education suggests exposure to the real world of work during the exploratory phase. And, as we have come to know career education, one outcome of exploratory experiences during the middle school years could, hopefully, be the achievement of elementary job skills — those skills which might well support initial employment should the child leave school prematurely.

In a sixth issue we might consider the extension of cooperative training opportunities in ususual environments. As we expand the options of youngsters by increasing their awareness of career opportunities in public service areas such as in law enforcement, social welfare and education, and in the arts and humanities areas of drama and writing, our ability to provide them community experiences in these areas will become of major concern.

We may also face unique problems in providing equal educational opportunities especially in rural and inner-city environments. These situations probably reflect our most serious operational problems in the provision of community-based career education experiences.

One of the problems faced by a small school is the inability to finance and support a desired breadth of curricular offerings, especially career preparation offerings. While that note of reservation gives rise to high expectations for a cooperative training approach, it falters when community resources are examined for placement opportunities. A rural community, aside from a series of stores on main street, would at best have one or two major economic activities. Even larger school units located in areas removed from a center of business and industrial activity face a similar problem.

The inner-city situation, in many cases offers an environment in reverse. Businesses were there but they are now boarded up or otherwise victimized by conditions which create blighted areas. Not only are some of the remaining businesses unwholesome places for student placement, they are typically small and unable, economically, to provide part-time employment. Fortunately, urban renewal projects are bringing people and businesses back into such areas. But there are still thousands of youngsters who see in their surroundings very little excitement in the world of work. These are the boys and girls who would benefit most from a cooperative education opportunity, especially if such opportunities were provided in viable areas of economic activity.

The seventh and last issue has to do with securing a broader base of support and participation by employers and those who influence student employment opportunities. One could make the observation that the schools of this country, private enterprise, government, and the professions are not well enough acquainted with each other. Too often schools organize and run job preparatory courses without consulting local business, industry, labor, and the professions to learn about current methods and practices, and employment potential. Too often private employers hire and train people without drawing upon the resources of the educational institutions. This results in the sort of criticism which points to outdated career preparation courses and inadequate industry-based training programs. While such criticism is not totally valid, there is sufficient concern to suggest that cooperative experiences should be examined in terms of improving the effectiveness of the career preparatory programs of both by blending the efforts of the school and the industry.

How, then, shall education and its resources approach the larger community in search of greater employer participation? Schools, themselves, should be keenly aware of the necessity of working with employers and applicable unions while planning new and expanded cooperative programs, but the extent of student participation in the community will be in direct proportion to available training stations. As educators approach potential community participants in the educational process with their concern that all students — including the disadvantaged, the handicapped, and the gifted — have a chance for an initially successful experience in the world of work we believe that further dilemma will confront us. On the one hand, the employing community may tell us that they have already reached a maximum level of involvement, given the minimum wage law and the unproductiveness of young learners. Should we then consider a reduction in minimum wages for young learners? Should we consider removing the requirement that businesses, industries, and the professions pay wages at all for learners who seek shops, factories, laboratories, or other environments for the purposes of their own learning?

Such suggestions will likely bring emphatic reactions both from educators and from labor union organizations. Reactions will come from educators who are experienced in cooperative education because they know that pay for work successfully attempted brings significant and essential motivation factors into the learning process. Labor union organizations will react emphatically because they understandably believe that any deviations from current child labor laws and minimum wage laws will undermine their years of struggle to realize humane working conditions and a minimum, livable wage for the workers of this nation, young and old alike.

The provisions of Part G of the Vocational Education Amendments of 1968 provide the public policy for one expanded use of cooperative education funds. These provisions recognize the potential need of employer assistance through reimbursement for added training costs. This is a totally new concept for the expenditure of public funds and is being tested for the first time with Part G funds only. If we seek greater accountability for the educational experiences provided by employers, there must be avenues to accomplish this. One way of achieving greater accountability [redacted] educational experiences provided by employers may well be a financial [redacted]ation for the added efforts an employer must assume to help a student [redacted]nd achieve in the work environment. To date, the response of the States to employer reimbursement has not been great. Perhaps no more than twelve States have at one time or another used funds for this purpose. Perhaps the employers at this symposium can help to put this concern in focus.

Undoubtedly small business men are not well represented here so you may want to keep in mind their reaction to reimbusement as an incentive for participation.

In closing, may I say that we, in the U.S. Office of Education, who concern ourselves with the career education movement, laud you for your willingness to meet together in this way to tackle those problems which are of mutual concern to labor unions, management, and educators. We are all aware that this mutual consideration of our concerns has occurred all too seldom and that mutual resolution of our problems may be a major key to meeting the needs of vast numbers of our citizens in their educational concerns and in their economic concerns. And at the same time we may hold an extremely important key among those necessary to understand and cope with the maze of unemployment, w[redacted], and crime in which the American people, especially in the large cities, find themselves enmeshed.

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Portions of the above presentation were taken from a planning document prepared by the Division of Vocational Technical Education, U.S. Office of Education, prior to a National Conference on Cooperative Vocational Education in April, 1973.

THE ROLE OF THE CHAMBER OF COMMERCE IN CAREER EDUCATION

THOMAS P. WALSH

EXECUTIVE, EDUCATION AND MANPOWER DEVELOPMENT COMMITTEE, CHAMBER OF COMMERCE OF THE U.S., WASHINGTON, D.C.

I welcome this opportunity to share some thoughts with you on the interest of the National Chamber in career education, and the manner in which business and education must join in a partnership to serve better our young people, as well as our economy and society in general.

Though this is my first visit, I feel a special kinship with the Admiral Peary School cosponsoring this Symposium. I long ago heard about your efforts from Dr. Robert Miles, the National Chamber's specialist for education until his recent retirement, and whose son-in-law, Dr. Victor Dupuis, played a part in developing your curriculum.

The role of the Chamber of Commerce in career education is an evolving one — and it has a long way to evolve because we are not satisfied with our progress in acquainting our membership with the concept of career education, and with the need to work with our schools in carrying this concept forward.

Early this year the Chamber sponsored a National Conference on Career Education. This conference, happily, was hailed a sucess by all participants, but I must tell you that we were disappointed in the poor representation by the business community. Only a handful of businessmen attended, whereas almost 250 school officials were with us.

These school officials expressed delight that the National Chamber was sponsoring such a conference, but regret that once again they were talking largely among themselves. They almost implored the active involvement and cooperation of business in helping to make the school experience more practical and meaningful for their students. At this conference the schoolmen were way ahead of the businessmen. they were ready to join forces and get underway in developing a better school program. The businessman, for all practical purposes, was missing.

We want to do something about this. A subcommittee of the National Chamber's Education Committee —, which is comprised of business and school leaders — is now developing a program for publicizing career education and for enlisting the continuing support of the business community in achieving the goals of this educational concept.

Though this program is still in preliminary form, we plan a communication from Arch Booth, Executive Vice President of the Chamber of Commerce of the United States, to all superintendents of public instruction across the country. This letter will convey and reemphasize the commitment that the Chamber has made, and will continue to make, to the implementation of career education.

This will be followed by a similar letter of commitment from the manager of each of the National Chamber's six division offices to the state departments of education within their divisions and to various other educational organizations within each state, such as vocational education supervisors, counseling groups, and advisory councils on vocational education.

A speaker's bureau will be organized with the individual speakers being volunteers from local, state, and national chamber memberships. At our national headquarters and regional offices we will hold training sessions for these speakers, who will return to their communities and train additional volunteers to speak on career education to businessmen, educators, and citizen groups.

To support this effort the Chamber's Washington office will develop and distribute brochures on the economic and social benefits of career education, and why business must take a greater interest in, and provide more effective support to, our schools.

Other possibilities include development of radio and TV public service spots urging broad community support for career education.

As mentioned earlier, this plan is very much in the preliminary, formative stages, but gives you an idea of the direction and scope of our thinking and planning.

It involves, of course, a "wholesaling" type of marketing approach. At the national level we cannot deal directly with more than a very few individual chambers, business firms, or schools. The actual implementation of career education will take place only through the initiative of school, business, and labor leaders at the local level.

Perhaps I should explain why the National Chamber supports career education.

We are convinced that the current school experience of too many of our young people is unacceptable. You undoubtedly know the basic facts too well.

— over half the students who start college never finish;

— 900,000 kids drop out of high school every year;

— and an almost equal number get diplomas from high school but have no skills of specific interest to employers.

These three groups total 2½ million youngsters. They are dumped on the labor maket every year — at a time when the number of unskilled jobs is continually shrinking and also at a time when many employers are seeking — but cannot find — skilled help to fill jobs paying good wages and offering excellent futures.

The results include widespread idleness and crime among youth, heartbreak and dashed hopes in families, ever higher taxes to meet rising welfare and prison costs and inferior services for consumers.

I'm sure we agree that this situation is intolerable. These shortcomings and failures exist in an educational system, for which we the taxpayers spent $85 billions in 1972, a sum 10 times as great as in 1950. The question is what should education and business leaders do about it?

The first essential step is to break down the apparent or real separation that exists between schools and employers. We must begin to "wire in" our schools to the job market — and have our schools understand the complexity and dynamic changes taking place constantly in that job maket:

— today there are 21,000 different types of jobs.

— by 1980 there will be 30,000 different types of jobs. The number of new jobs will, of course, be much greater than the 9,000 indicated by these figures, because many jobs at which people are working today will decline to the point that they will have little significance in the labor market.

— in fact, out of the millions of youngsters who started kindergarten and first grade this month, 2 of every 3 will hold jobs that don't even exist today!

How can the schools prepare their students for this ever-changing job market?

Obviously, school administrators and teachers can't do it alone. It's a rare school administrator or guidance counselor or teacher who has ever been outside the field of education. Their knowledge of what employers want must come from those employers themselves. Businessmen and educators must get together on a continuing basis to review curricula in light of job demands and consider changes necessary to help our young people make the crucial transition from the world of education to the world of work.

The challenge to businessmen is to get out of their offices and meet with their superintendents and principals and teachers and guidance counselors, to serve on school boards or college boards, and on advisory committees to local school and technical institutions.

In addition, we urge that they call their local and state chamber executives and express a willingness to work with them for better schools. Scores of chambers have assumed leadership in this field. Some others have yet to get started. It will be effective to let them know of your interest and suggest that they develop programs for a cooperative effort with local school systems.

And the challenge to school administrators and labor leaders is to take a similar initiative. It would be disastrous if career education should fail largely because our school, labor, and business leaders were each anxiously waiting for the other to take the first action. Dr. Kenneth Hoyt, of the University of Maryland, said it best. "The best way to begin is to begin." And that beginning is needed now.

We fully appreciate that career education has wide-ranging implications, and that there are many understandable reservations and concerns. Some educators wonder if it will denigrate the liberal arts, some minorities wonder if it is intended to steer them into non-professional jobs, some labor leaders wonder if it will encroach unduly on their apprenticeship programs, and some businessmen may be indifferent or consider career education as fine for somebody else's youngster, but as having little to offer his own child because he's going to college.

At the National Chamber we view career education as broadening the education experiences of students, rather than narrowing them. Though it aims at instilling an emphasis on education as preparation for work, we see no reason why this effort should impair the legitimate and necessary cultural pursuits of education.

In other words, we don't see all education as career education. There are other purposes of education than preparing for work. The student who eventually decides to become a plumber, or electronic engineer, or doctor, must have an opportunity to understand and appreciate poetry. But we believe he should also be exposed to a range of occupational choices — professional, skilled, and semi-skilled — so that he will have the information and experience necessary to make a more intelligent choice and, equally important, acquire basic qualifications of interest to a prospective employer.

A recent Gallup Poll survey of public attitudes toward education indicates broad support for this type of curriculum. Nine of ten persons in all major groups sampled said they would like to have the schools give more emphasis to a study of trades, professions, and businesses to help students decide on their careers. Detailed results of this comprehensive survey appear in the September issue of **Phi Delta Kappan.**

We find this survey most encouraging. It indicates that most parents no longer treat the acquisition of skills and the acquisition of a liberal arts education as mutually exclusive, that they see that both are needed and that both should be provided by our educational system.

It has always seemed odd to us that it has been quite acceptable for a prestigious school such as M.I.T. to train students in specific, employable skills, while a local high school may lose status if it offers training having direct utility in the labor market.

Our support of career education does not mean that we consider it a panacea. Some of the literature seems to sugest that career education will solve the problems of youth unemployment, the mismatch of worker skills and job requirements, worker alienation and a variety of other ills.

We believe it will help make progress in these directions, but see definite limits to what can be accomplished by education alone.

For example, will a better educated work force necessarily be more productive and contented? Can the presumed advantages of career education be fully realized so long as there are more than 20 million jobs requiring only minimum skill and offering only minimum pay?

And what about the violent swings in the labor market? Today there are severe stortages of carpenters and machinists, but just three years ago they were laid off by the thousands — many never to return to their trade when the economy improved and their skills were needed again.

And to what extent can career education reduce employer training costs? It is undoubtedly erroneous to consider business as a homogeneous entity. Some employers and industries will benefit substantially from career education, others not at all, or at least not perceptibly. What are those industries with the highest training costs, and what portion of those costs might be eliminated through an improved system of education?

Answers to these questions are necessary to identify the best market for career education and evoke fully the potential for its support.

That career education may not solve all problems relating to career development and employment in no way diminishes our conviction that it merits continuing business support. Our task at the National Chamber is to help develop better ways that business-education-labor might collaborate in a common effort to carry forward the career education concept. This was the purpose behind the conference that we sponsored earlier this year. One of the sessions of this conference is described in a publication titled, Career Education and the Businessman — A Handbood of Action Suggestions.[1] It examines ten elements of a career education program, and sets forth recommendations of the conference participants for implementing each one.

As a general observation, the conferees noted that career education cannot succeed if carried out only within the four walls of the school, that success is predicated on the active involvement of the business-labor community.

This was recognized by those who took the lead in developing the curriculum of the Admiral Peary Area Vocational-Technical School, and your presence today reaffirms the validity of this principle. The ideas and experiences exchanged during the course of this conference will help new career education programs get underway and stimulate improvements in existing ones.

So, we are moving in the right direction to better serve our youth and society generally. We are hopeful that our response will be adequate to the task.

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1. Chamber of Commerce of the United States. 1615 H Street, N.W., Washington, D.C. 20006.

PROGRAM ARTICULATION AND THE CAREER LATTICE CONCEPT

RICHARD C. RICHARDSON, JR.

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Education in our society is a complex and highly specialized activity organized on the basis of assumptions we make about the characteristics of the learners and the nature of what is to be learned. Age is one important characteristic of the learner which is recognized by the division between basic education and higher education. Our system also recognizes divisions in subject matter fields by distinguishing between academic and vocational education. The importance of these characteristics is recognized not only by the way we organize education in our communities but also by the structures we establish in state departments of education and in regional accrediting associations. The advantage of emphasizing differences is that it permits specialization and hence a greater level of expertise in dealing with the problems of a particular segment of our formal education process. The disadvantage of such an approach is that it tends to create discontinuities or gaps between the various elements of the system.

Career education, as a specialized part of our system, is a product of the 20th Century. Compared to its more ancient academic counterpart, one might easily conclude that program articulation is a problem unique to career education. While articulation for academic programs has improved significantly, it should be noted that, relatively problem-free transition has not always been the case. As recently as 1885 the principal of Phillips Academy at Andover complained that with 40 boys in the graduating class, the school was compelled to operate over 20 seniors classes in order to meet the admissions requirements of the various colleges in which the student would ultimately enroll. It was not until 1908 that the so-called Carnegie Unit was defined, permitting some standard way of defining admissions criteria. The overzealous application of the Carnegie Unit has probably created as many problems since that date at it has resolved. If academic programs leading to the baccalaureate appear to be a model of program articulation, it should be noted that the model was not easily derived nor has it ever functioned without problems. There is no intrinsic reason why articulation among programs leading to the baccalaureate degree should be better than among programs which focus on career preparation not requiring the baccalaureate. The fact that it is suggests the need for a careful effort to correct the situation.

The move to develop articulation among career programs where specialization may begin as early as the 9th or 10th grade has given rise to the term "career lattice". The term suggests it ought to be possible for an individual who elects initial entry to an occupation not requiring the baccalaureate to do so without foreclosing all future opportunities to resume a formal education. At the present time, an individual who acquires entry level skills in a vocational-technical school or in an apprenticeship program may face the necessity of starting over if he decides later to prepare himself for a more responsible position in the same

occupational field. The practice of requiring individuals to repeat training as a prerequisite to qualify for advancement is wasteful of educational resources and students' time. The search for a way to bridge the discontinuities between academic and career and between secondary and post secondary education lies at the heart of implementing the career lattice concept.

THE CONTEXT OF ARTICULATION PROBLEMS

There are three patterns of organization for the secondary school segment in addition to the comprehensive high school. The first and most common is the area vocational-technical school. Under this concept, a number of secondary school districts join together to provide comprehensive vocational-technical programs for students who divide their time between the sponsoring district high school and the area vocational-technical school. While the area vocational-technical school may provide post-secondary programs and adult education, the focus is predominantly on the high school age group because such institutions are organized and controlled in the context of basic education. The primary assumption behind curriculum development has been that the programs are terminal in nature and lead to employment upon graduation from high school.

A second approach to meeting the needs of students at the secondary school level involves the community college. School districts may contract with a community college to provide area vocational-technical school services in Pennsylvania. The line of demarcation between secondary and post-secondary has never been clearly defined. The simple act of moving this line in one direction or another can result in community colleges providing career education on a post-secondary level for one geographic area, while similar courses are being offered at the secondary school level at another. One might assume that encompassing secondary school programs within the community college represents the solution to the problem of program articulation, but it would appear this is not the case. A certain amount of coordination in facilities planning and staff utilization does occur, but the benefits of this coordination aren't necessarily passed on to the students.

Career education is also provided through self-contained vocational-technical schools in some of the larger cities. Under this approach, academic and technical courses are more likely to be mutually supportive. Articulation with post-secondary schools is less effective, however, because the academic instruction offered by the sponsoring district high school under the area vocational-technical school concept is not available to the student of the self-contained vocational-technical school.

We now know that somewhat less than half of the graduates of vocational-technical schools find employment in an area closely related to their field of training. A significant number of those who do not enter employment seek advanced training often in community colleges. Some employers report that the vocational-technical school graduates they employ are well qualified with respect to technical competencies but lack general education competencies in such areas as communication skills and mathematics. In addition, the nature of work itself

is constantly changing with the result that skills become outmoded. In short, the characteristics of students and the changing requirements for our work force combine to refute the assumption that a program of formal education can be terminal.

When we move from the secondary to post-secondary level, the educational scene becomes much more confused. The confusion extends not only to the proliferation of institutions providing services but also to the options within these institutions. Community colleges commonly offer at least three different types of career programs in addition to college parallel and remedial programs. Some two-year associate degree programs may be as rigorous or more rigorous than the two year college parallel program. Students who complete such programs often transfer to four year colleges and universities, at times without loss of credit. Those who enter the work force directly may enter at levels not too far different from the baccalaureate graduate, as in the case of registered nursing. In programs of this type, academic courses most commonly are the same courses required of college parallel students.

At the opposite extreme are the less than two year certificate programs which prepare individuals to enter very specific positions in the work force. These programs teach academic courses only as they relate directly to the job for which the individual is being prepared. For example, a clerk-typist must be able to spell and to punctuate. A student who decides to reenter formal education after completing a one-year certificate program may find very little of his previous training recognized.

The third type of program offered by a community college incorporates the specialized training of the certificate program with an academic core ranging from one-third or half of the total 60-70 semester hours of work. Academic courses are less theoretical than those offered for college parallel students and may be modified to emphasize applications related to the specialized training. As in the case of the certificate program, students who attempt to reenter the formal education process will do so with the probability of losing much of the work previously completed.

Two year campuses of four year institutions also offer career opportunities at the post-secondary level. Because of the influence of a baccalaureate oriented faculty, programs tend to be of the generalized and/or rigorous variety. Propietary institutions represent the third approach to post-secondary career education. Here the emphasis is reversed from that of the branch campus. Proprietary institutions tend to concentrate on certificate and specialized technology programs with relatively limited emphasis on academic courses except as necessary to provide skills needed for a specific job.

Until recently, the assumptions made about career programs at the post-secondary level in institutions other than those granting the baccalaureate were very similar to those made in the vocational-technical schools. The programs were described as terminal and consequently little attention was given to the need for upward articulation. Post-secondary institutions have discovered the same

facts which now appear evident to vocational-technical school administrators. The characteristics of students and changing manpower requirements have combined to defeat the concept of a terminal program. As a result, four year colleges and universities have begun to give attention to how they can serve the need of those who have completed programs at the associate degree level. The Capitol Campus of Penn State University and Spring Garden Institute are two examples in Pennsylvania of four year institutions responding to new needs.

The emphasis placed in this paper upon articulation and the career lattice concept may seem to be an argument for an arrangement to extend the duration of formal schooling as in academic programs where the pressure for going to college has become so intense. This is not the model I would superimpose upon career education. Many students do have all of the formal education they require for productive lives when they graduate from the area vocational-technical school. Beyond the opportunity to come back for refresher training from time to time, there is no reason why these students should be encouraged to go any further in our system of formal education. In a similar manner, at each level within the structure, I see more students entering the work force than going on. Nevertheless, if we are to be totally realistic about the nature of those we serve and the kinds of programs we structure to serve them, we must recognize that we have an obligation to create programs which are open ended and not cul de sacs. Those students who have the ability to benefit by studying at advanced levels should be able to do so without unnecessary repetition or wasted resources within the system. The model for articulation which follows is based upon these assumptions.

MODEL FOR ARTICULATION

Community colleges and area vocational-technical schools are uniquely situated to address themselves jointly to the problems of career program articulation. Both, in a sense, are hybrid institutions incorporating elements of secondary and post-secondary, academic and career. The experience of attempting to accommodate these diverse elements can be invaluable in an effort to resolve the current problems posed by the lack of articulation. The area vocational-technical school while defined as an institution of basic education clearly has post-secondary capabilities. While its focus emphasizes specialized skills, such skills cannot be taught without related general education support. Community colleges, while defined as institutions of higher education, have historical roots in the secondary school system. Because of their comprehensive nature, they must continuously cope with the problems of reconciling academic and career education.

A decision to explore opportunities for cooperation in career education was made by the two area vocational technical schools and the community college in Northampton County in August of 1972. A proposal was developed and circulated to the joint operating committees of the two area vocational-technical schools and to the board of trustees of the community college.

The proposal was received favorably providing the basis for submission of a grant request under the Vocational Education Amendments of 1968, Ancillary

Part B. The grant was approved and funding authorized for a cooperative director, clerical services and consulting assistance. The plan called for the establishment of a structure through which trustees, operating committee members, administrators and faculty could plan and execute joint programs. Through the structure which came to be called the Career Education Cooperative, both immediate and long range approaches were identified. Among the areas to receive immediate attention were practical nursing, early admission and facilities planning.

Each area vocational-technical school offered a program in practical nursing. The community college offered a program for registered nurses. It was decided to merge the two practical nursing programs and to transfer them to the community college. This has been accomplished providing several significant advantages. The practical nursing program is post-secondary because of licensure requirements. Now, instead of being unique, students and faculty function in a post-secondary environment which is more compatible with their needs. Programs which previously required three nursing arts laboratories are now being offered in one, freeing the two laboratories in the area vocational-technical schools, one of which was used to create additional capacity for an oversubscribed secondary program while the other facility was used to house a new program. Savings were realized in terms of the number of administrative, clerical and teaching staff members required for the practical nursing program. Faculty members were able to concentrate more effectively in their areas of specialization. A combined admissions process has made it easier to ensure that students end up in the program for which they are best suited. Finally, efforts have begun to articulate the practical and registered nursing programs so that students will find it easier to move to a higher level.

A second area identified for immediate cooperation was the early admission of students demonstrating superior performance at the vocational-technical schools to related community college career programs. Three programs were selected for initial attention. These were data processing, electrical electronics technology and drafting and design technology. The concept of early admissions represented an attempt to reduce some of the problems caused by poor program articulation. In each of these three areas students completing programs at the vocational-technical schools were at a disadvantage in competing for admission to the related community college programs because the design of such programs assumed a level of competence in mathematics and communication skills rather than any prior training in the specialized field.

The plan advanced was to admit students at the end of the 11th grade. At the end of their 12th year they would be granted a diploma by the high school from which they came and at the end of their 13th year they would be granted an associate degree from the community college. Thus, early admission would mean less time invested by the student to achieve a specific career objective and less cost to the taxpayer because of fewer years of schooling to finance. Early admission would also create more openings in some vocational-technical school programs thereby allowing additional students to attend and delaying the need for construction of new facilities.

A final area for immediate attention involved joint planning of facility construction programs by the three institutions. It was felt that such an approach could result in more students being served at a lower overall cost through improved facilities utilization, through the flexibility of purpose that might be built into such facilities and through making available programs where the level of utilization could make it difficult for one institution to justify the cost.

In addition to areas identified for immediate attention, a number of long range objectives emerged. These included adult education programs spanning the entire range of occupational preparation, sharing faculty resources, developing advanced options of existing programs offered at the area vocational-technical schools, joint planning in the conduct of manpower surveys and in the development of career information programs.

Our goals for the Career Education Cooperative, were very ambitious during its initial year of existence. This is especially true when one considers that the project director did not begin full time employment until March 15, 1973. Nevertheless the achievements have been significant and hold promise of even greater achievement in the years ahead.

In July of 1972 the relationship among the three executive officers could best be characterized as one which involved equal amounts of indifference, lack of trust, and insensitivity to one another's problems. The interaction involved in merging and transferring the practical nursing program, in preparing the proposal and in selecting a consortium director improved communication and helped each administrator to understand better the problems that his colleagues faced. Through initiating an attack on problems that were common to all three institutions, improved trust and confidence were promoted.

Another achievement of the cooperative in its first year of operation was the development and initiation of an automotive technology program. There are a number of interesting characteristics of the program. First, it is designed to appeal to diverse populations including graduates of the vocational-technical school automobile mechanics program, graduates of comprehensive high schools who have no previous automotive training, and individuals presently employed in the automotive field who wish to extend their technical skill or advance to management positions. The program designed by the cooperative is competency based. The intent is to find out what an individual knows and to certify that regardless of where or how he learned it. The second objective of the program is to teach him what he needs to know as efficiently and effectively as possible.

The program uses challenge examinations to establish whether an individual has a competency defined as the objective for a specific segment of instruction. The community college contracts with the area vocational-technical school to teach the laboratory courses and to provide the supporting facilities. A student may enroll full time or part time. He may take only those courses directly related to the automotive field, in which case he would receive a certificate, or he may choose to take the related general education courses and qualify for an associate degree. The program is flexible, open ended, and represents the ultimate in secondary, post-secondary articulation.

An early priority for the cooperative was the development of a coordinating council not infringing upon the autonomy of any of the three institutions, but permitting the communication essential to the effective implementation of the ideas of the cooperative. The arrangement chosen consisted of three members from the board of trustees of the community college and three representatives of each of the joint operating committees of the vocational-technical schools. In addition, the council included the three executive officers. The responsibilities of the council include reviewing and reacting to proposals, informing and advising the respective board or joint operating committees, interpreting the positions of their board or joint operating committee to the cooperative, and suggesting areas of investigation for new proposals.

The importance of the planning council cannot be overstated. The amount of planning and staff effort required to achieve the merger of the licensed practical nursing programs or the initiation of the automotive technology programs was extensive. In both of these undertakings, the executives of the three institutions were forced to operate under the assumption that the various controlling boards would provide the necessary approvals upon request. Fortunately, they did. In any continuing relationship, however, the early involvement of representatives of the governing boards and the utilization of their input was considered essential if staff effort was not to be wasted on projects disapproved after tremendous planning effort.

I hope you will not assume from the preceding comments that we have solved all of the problems identified earlier through the implementation of the career program cooperative which has only been in existence about 8 months, but I do want to convey a sense of progress and the hope that this project has engendered among those of us who have been involved. During 1973-74, the cooperative will develop additional post-secondary programs through the use of appropriate combinations of community college and vocational-technical school facilities and staff resources. Career lattice arrangements will be developed for related secondary and post-secondary programs, leading to community college credit for technical work completed at the vocational-technical school upon recommendation of the instructor. A closer working relationship among faculties of the three institutions will be encouraged to promote curriculum revision and improved communication.

CONCLUSION

The assertion that community colleges and area vocational-technical schools should play a key role in program articulation should not lead to a conclusion that proprietary schools, two year campuses of four year institutions and other colleges and universities are unimportant in providing career education. However, each of these institutions is more specialized or located at a less pivotal point in the career education continuum. Proprietary schools can best be related to the total career education effort through such activities as regional planning and contracts for educational services. Branch campuses and the four year colleges and universities they represent can make their most significant contribution through greater flexibility in programming and admissions require-

ments. Four year colleges and universities accept without question, mediocre graduates from academic programs. At the same time, they refuse outstanding graduates of career programs or penalize them by making them take courses that would not be required of the academic graduate. There is no good reason the four year institution cannot develop cap stone programs, taking students from wherever they are and helping them to achieve their objectives. The experience being gained with external degree programs may very well provide a major impetus in this direction.

Our academic programs were designed to serve fifteen to twenty percent of the total population. By incorporating the career education concept and developing community colleges and area vocational-technical schools, we have expanded our system to encompass a much greater percentage of the total population. If we are to encourage all of those who should be involved in vocational-technical education to seek such programs, we must erase the penalty for a wrong choice. Currently, an individual who selects a career program may well be foreclosing future options for advance study. Those of us who have been close to career education realize that it is a first-class approach to education and that those who are involved in it are first-class citizens. One of the benefits of this citizenship must be upward career mobility without the penalty of starting from zero. The Career Lattice is not only a possibility, it is a necessity. Career programs must become as open ended as their academic counterparts. Community colleges and vocational-technical schools working together can make this objective a reality.

COMPETENCY BASED EDUCATION AND CRITERION REFERENCED MEASURES

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Competency Based Education and Criterion Referenced Measures. What does it mean? Translated into layman's terms it means that a student will learn just those skills that are required for the specific occupational goal that the student aspires to and that certain specified measurable endpoints are described so the student will know now when the goal has been met. In a sense, we are using the performance based evaluation that Mr. Moody spoke about in an earlier talk this morning. The title is purposely chosen for this conference to bring out the point that perhaps no one outside the field of education and quite a few who are in the field of education understand the "educationese" of the title. If the institutions of education, business, industry, labor, and government are to cooperate to make most efficient use of resources, they are going to have to begin to speak the same language. In the vernacular, a better title might be "What you need to know to get a job and how the man will know if you know what you are supposed to know".

My presentation this morning deals with the Career Education project being conducted at the Admiral Peary Area Vocational Technical School (AVTS) in Ebensburg, Pennsylvania, as the school enters its second year of operation. In the total planning of a new school, Dr. Bryan V. Fluck, Director of Vocational Education, wanted to incorporate curriculum development to fit in with the new building. He did not want the same old traditional classroom activities in a new package. Furthermore, he wanted a curriculum that would match his philosophy of education, one that would allow "each student to proceed at his or her own rate to his or her own level of ability in areas of interest and competence to the student".

I joined Dr. Fluck's staff in September of 1971, under a research grant to design a system to deliver the concepts in Dr. Fluck's aforementioned philosophy.

The major goals of the project are as follows:

* The education of students for specific occupational goals as defined and described in the Dictionary of Occupational Titles, (DOT),
* A flexible modular scheduling system to allow students to proceed at their own rate in various curriculum areas, and
* A computerized data collecting and record keeping system to coordinate curriculum content with student achievement and with individual student occupational goals.

As I proceed with this presentation, please bear in mind that the project staff are well aware of the following items:

* Vocational Education is a part of, but not synonymous with Career Education,

* The basic strategy of the research project is design of a general delivery system that is flexible enough to meet both individual needs and the needs of various locales (rural, surburan or urban), and

* Human beings, i.e. students and teachers, are the most important aspect of the project, despite the apparent emphasis on the mechanics of the system.

To use an example that is familiar to most of us, I'll deal with the automotive mechanical repair program. In traditional classrooms about 20-25 students are more or less treated as a group as they cover all espects of the auto mechanics course. Students are exposed to all content areas whether they are capable and/or willing to handle such materials. The grade given a student in such a course is the average of the individual test results in each of the content areas. Thus, the student is receiving a grade on his average ability across the entire curriculum.

In the flexible modular scheduling program currently in use at Admiral Peary, students are allowed to select a specific occupation within auto mechanics. For example, there are at least eleven different types of auto mechanics listed in the DOT, such as air conditioning mechanic, automobile mechanic, tune up man, auto radiator man, etc. The skills that must be mastered by the tune up man are quite different from those which must be mastered by the transmission mechanic. It is true that the master mechanic will handle the skills of both. However, most students in auto mechanics will not end up as master mechanics, but rather will have individual skills in certain areas. The goal is to capitalize on the skills and competencies of the individual student while minimizing any negative effects in those areas that the student cannot or does not want to become involved. The skills of the tune up man, dealing with the fine tuning which involves the electrical system, ignition system, and fuel system of an automobile, are quite different from those of the transmission mechanic who is dealing with a heavy mechanical component of the automobile. It does not seem quite fair to require a student who has some sort of native ability in the tune up man's area to suffer through the heavy mechanical areas of the transmission mechanic, if in the end that student does not intend ever to use those skills, no matter how poorly learned. Maybe at some later date after graduation, after several years working in a garage, the tune up man will decide that he is ready and willing to learn the transmission mechanic's job or vice versa.

Another occupation familiar to most of us is that of service station manager. We are now dealing with the "Career Lattice" discussed by Dr. Richardson earlier this morning. A person who wants to be a successful service station manager not only has to know auto mechanics, he or she must also have

skills in auto body, marketing, personal services, and even blueprint reading, just to name a few areas. The auto mechanics and auto body curriculum content are obvious, marketing might deal with business law, depreciation, and tax returns, personal services might involve dealing with the public, employee relations, and promotional activities, drafting and blueprint reading could be used by the person who might be making an addition to an existing garage facility and thus could talk more intelligently with any contractors involved. In summary, a student whose occupational goal is at the rather high level of service station manager has a major occupational area in auto mechanics, but also requires training and education in areas of business, distributive education, personal services, and the technologies. (It should be noted here that we are dealing with a secondary, post secondary situation with built in articulation.)

Another example familiar to most of us is today's business student, who in addition to the usual typing, shorthand, bookkeeping, and accounting courses, should also become involved with those aspects of data processing that pertain to payroll and computerized accounts payable. A student who aspires to be an office manager or business manager must take all of these courses if he or she is to be proficient and up to date in that field. Because the required skills of most jobs involve many of the traditional curriculum areas, all occupations are to some degree multidisciplinary and the training and education of students should take that fact into account.

The question then, assuming acceptance of the aforegoing described philosophy, is to design a delivery system for "Competency Based Education and Criterion Referenced Measures". Perhaps the best way to describe the system is to approach it chronologically and describe each phase as it occurred. The first step was taken in the area of curriculum development. All 20 programs to be offered at the vo-tech [1] were outlined according to a standard coded format so that students could cross program lines as their occupational goals required. One highly rated instructor in each of the 20 programs from various vocational schools throughout Pennsylvania was invited to Ebensburg for a 3 day workshop seminar during which course content was developed in terms of **Units, Modules,** and **Tasks.** These terms are defined as follows:

* Unit- a general curriculum content area, e.g., in auto mechanics units would cover **Fuel Systems, Electrical Systems, Transmission Systems,** etc.,
* Module- a more specific content area, e.g., in the unit **Fuel Systems,** there would be modules on **Fuel Pumps, Carbeuration, Gas Lines** and **Gas Tanks,** etc.,
* Task- a specific skill development, e.g., in the module **Fuel Pumps,** there would be tasks on **Removing a Fuel Pump, Repairing a Fuel Pump, Diagnosing Malfunctions of a Fuel Pump,** etc.

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1. agricultural technology, horticulture and floriculture, auto body, auto mechanics, carpentry, electricity, masonry, plumbing and pipe fitting, machining, mining, welding, cosmetology, health services, marketing technology, personal services and transportation, quantity foods, electronics, environmental control, mechanical drafting and design, and scientific data processing.

When the outlines of all twenty courses were compiled, over 9,000 individual tasks, stated in behavioral objectives according to the Mager format, were identified. (Approximately 1,000 modules were listed.) Using these 9,000 tasks, various occupational Program of Study sheets as described in the DOT and as determined to be necessary in the immediate labor market area of the Admiral Peary vo-tech based on a prior labor maket study, were designed in terms of the individual day to day learning activities; that is, the tasks.

Program of Study sheets[1] begin with a cover page which contain the following information:

* A description of the occupation in two or three paragraphs,
* The occupational title and the DOT number,
* A list of potential local[2] employers for persons in that occupation.

The second section of the Program of Study sheets includes a list of the required tasks that must be successfully completed in order to qualify for the occupation.

Finally, the third section of the Program of Study sheets includes a list of elective and career tasks that are of more than average interest to the student aspiring to that occupation.

After proper counseling, each incoming student to the Admiral Peary vo-tech selects a specific occupational goal to pursue. If the student decides, after a reasonable length of time, and for proper reasons, that the occupational goal which was chosen is not the one that he or she wishes to pursue, that goal can be changed and a new occupational study sheet is given to the student. More than likely the new occupation will be in the career lattice or related occupations area of the original choice. Thus, it is highly likely that some of the skills (i.e., tasks) specified will occur in both occupational study sheets. Where there is overlap of skill requirements, the student does not lose any time when changing goals.

As stated previously, this system is computerized such that the approximately 400 occupational goals that were developed in the first year of the project are on computer file in terms of task listings. The skills are coded such that if a student does change goals, an analysis of student achievements as entered in the student record can be compared to the new and old occupational goals and credit for past achievements retained. It should be noted here that from the approximately 400 occupational choices available to the students during the first

1. Note. A compete packet of materials was distributed at the conference which contained samples of all the materials discussed from this point on. Additional packets may be obtained by writing to the author. The materials were deemed too cumbersome to reproduce in these proceedings as appendices to this presentation.
2. Depending on the occupation in question, local employers could mean a major company within one day's travel of Ebensburg.

year of operation, approximately 180 different occupations were chosen in the 20 program areas. Essentially, this is a 9-1 increase in the individualization of instruction in terms of occupational goals. As each student achieves the skills required or specified, an individual computerized record is maintained. Printouts for each student will be issued periodically to the student and to the course instructor so that a dynamic profile of the student's accomplishment can be maintained.

Each skill described in the course outline and on the occupational study sheet represents but the tip of an iceberg. The rest of the iceberg is, collectively, the Task Instruction Sheets (TIS) which are created by the instructor. Each TIS contains the major items of task learning objective, background, procedure, materials and supplies, safety precautions, review questions and references.(1) Students receive these instructor prepared instructional sheets as they are required on an individual basis. As each student progresses to his or her own occupational goal, he or she creates an individualized notebook of the specific task instruction sheets. When the student exits the vo-tech at any point, for any reason, the personalized textbook goes with the student as a record of what he or she has achieved. Printouts of the student achievement file will be supplied upon request to any potential employer wishing to consider the student as a potential employee As each student progresses towards a well defined and described occupational goal, he or she may qualify for several other lower level occupations on the way to that goal. For example, referring back to the auto mechanics area, a student aspiring to be a service station manager should, within the first two months of school, be qualified as a service station attendant. After several more months and most probably into the second school year, that student might have acquired another occupational qualification in the area of auto mechanic apprentice Perhaps at the end of the second year, an outstanding student could qualify for the auto mechanics DOT and so on up the line to service station manager.

It is not to be inferred that either the occupational lattice or the occupational ladder is a hierarchy of increasing value, but rather a system of diversified skill requirements. Furthermore, it is recognized that at the secondary level, master mechanics, as well as master craftsmen, or cosmetologists, or master chefs, or what have you, will not be produced in three years of schooling ending at age 17 or 18. The primary purpose of the DOT Program of Study sheets is to present a very specific roadmap for each student, listing those skills that are required to the extent that they are offered at the vocational school. It is well recognized that additional learning experiences such as on-the-job training, further post secondary education, and just plain maturity also are involved. It must be remembered that we are just now entering the second year of implementation of the TIMES concept at Admiral Peary and its third year of development. There are many other areas related to the project, primarily in the affective domain, that have not yet been touched upon. At the moment, we are concentrating on

1 The TIS are similar to the traditional job sheet in vocational education. They differ from the job sheet in that each TIS is self contained with no need for operation or information sheets. Task sheets are written essentially at 3 levels; operative, skilled and technical.

the delivery system aspect. Once that model has been developed, we have great faith in the ability of classroom teachers and local school administrators to become involved with the TIMES concept and to adapt it to local needs.

In any event, a student does benefit immediately from the current system in that, before the game is begun, the rules and procedures and individual steps required for the occupational goal are explicitly laid out for the student to examine and to decide as to how best to attack the problem of achieving that goal. No student is locked into a given roadmap. Rather, as discussed previously, if at some point a student has a vocational change that has been the result of a proper decision making process and consultation with counselors, teachers, parents, and other qualified and interested personnel, the student can exchange roadmaps. Still, at any point, the student knows where he or she has been, where he or she is, and what is ahead.

Another intended use of the Dictionary of Occupational Titles Program of Study sheets and Task Instruction Sheets is as guidance and instructional materials down through the grade levels. For example, seventh, eighth, and ninth graders could browse through areas of interest in free time, study periods or counseling periods, reading the various lists of skills required for different occupations. In the lower grade levels, classroom teachers could use the specific detailed listings of skills to plan classroom activities around certain occupational studies. It would be less difficult to design classroom activities given specific day to day activities of the occupation, rather than a two paragraph overview that says very little as to what happens on a day to day basis. The instructor prepared Task Instruction Sheets would be useful in suggesting materials and procedures on a scaled down version for the elementary and middle school grades, as components of the Career Awareness and Career Orientation segments of the total Career Education spectrum.

The first year of operation at Admiral Peary was considered quite successful despite the adverse opening conditions of the school which was 2 months late due to a labor strike at the construction site. The approximately 800 enrolled students at Admiral Peary had logged in nearly 50,000 individual task completions for an average of 60 skills per student for the first year of operation. As part of the individualized program, TIS were prepared for student in the health assistant program for a one month clinical program. The students were released full time from both the vocational school and their home high school to work for doctors, dentists, hospitals and clinics in the area. Each student was presented with a coded computer printout of her specific achievements along with a course outline. An important piece of feedback from the employers was that they would prefer to see the task titles describing the individual tasks printed beside the code number This change is being introduced during the current school year.

Although the system has been designed to be a student oriented, flexible modular scheduling system for delivering Dr. Fluck's philosophy of "allowing each student to proceed at his or her own rate to his or her own level of ability in areas of interest and competence", many other people including counselors, employers, administrators, parents, and instructors can also benefit from the information collected and maintained through the flexible modular scheduling system.

In addition to the individual student records that can be printed out, summary statistics for each shop or classroom area can also be printed out either chronologically on a day to day basis in terms of tasks or in summary form, giving task number, how many students completed that task during a school year, on how many different days students completed that task and during what period of time the first and last achievement of a given task were obtained. A quick review of computer printout summary sheets for the first year of operation shows conclusively that students were allowed to proceed at their own rate as shown by the different numbers (in the range 1-30) under the column "Times Completed". In a traditional classroom all 1's would have been entered in that column. The goal of having students in areas of interest, competence, and at their own level of ability is shown by the different numbers under the column "Student Achievement". Again, in a traditional classroom the number would have been the same for all tasks and would equal the total number of students in that classroom. If the record shows that an unusually large number of students complete a task (remember, students from other areas can enter a classroom for a given set of tasks or skills) it may be an indication to the administration that a teacher aide or an additional instructor in a certain course area is required. (There are indications that this may be the case in our own school in blueprint reading.) On the other hand, a task with only one student completion could indicate either that the task is obsolete and should be deleted from the course or that it is a rather high level and difficult task that can be achieved by only the best students. Even if the task that was completed by just one student was needed only for an unusual occupation, that is no reason not to have that task in the course outline. The system is such that instructors can constantly update their course outlines in a systematic manner without fear of confusion or of penalizing students who have completed prior tasks. New tasks can be added, obsolete tasks can be deleted, and existing tasks can be updated to meet the demands of the labor market.

A review of the student printouts by an instructor or a counselor could spot only one of many trends including the fact that a student is goofing off, going in the wrong direction, or excelling. The system delivers a very objective record of what skills a student can actually perform independent or virtually independent of any subjective evaluation of that student (assuming Mager's format for behavioral objectives has been followed). For example, in a traditional classroom the student's grade is usually a combination of what the student knows, the student's attendance record, the student's attitude, the student's relationship with the teacher, the student's relationship with other students, etc. Under the TIMES system, the record of student accomplishments in terms of objectively defined and described skills is a matter of record. The question of whether or not the instructor would want this particular student as an employee is a separate question. It may be that an employer has need for a student with certain skills and that the student's personality is of no consequence, because it is a one person job off in a corner of a shop somewhere. If an obnoxious student is the only one who has those skills, it then becomes the employer's decision whether or not to accept that student for the job, rather than having the student prejudged and perhaps eliminated from competition for a job the student can do. The above described circumstances can be critical in the area of hiring the handicapped. The TIMES concept has been used in a program for the multihandicapped at two

local state school hospitals. Last year 50 students came to the Admiral Peary AVTS for "hands on" exploratory experiences for a sixteen week period, 5 days a week, 2 hours a day in the late afternoon. During the current school year, the program has been expanded to accept 100 students from the same two state school hospitals.

In summary, the Admiral Peary Research Project in Career Education, referred to by the acronym TIMES, has developed and implemented a delivery system for Career Preparation that educates students to individual occupational goals, while accommodating the different abilities and competencies of the individual student. During the current school year, the system is being explored on a trial basis in the business department of the six high schools that send students to the vocational school. The model was designed to be as general as possible so that it could fit into any educational system, subject to the rules, regulations and desires of the administration of that system. Reporting could be daily, weekly, monthly, semester wise, or yearly, just as scheduling can cover any one of the above time periods. The system deals with the "what to teach" as opposed to the "how to teach". The "what to teach" says an auto mechanic in Boston, Los Angeles, Tampa or Ebensburg needs essentially the same skills The "how to teach" is covered on the individual Task Instruction Sheets developed by the instructors in that specific school. Instructors are the ones who know best how to teach the type of student that is in a given area Although an auto mechanic in Philadelphia or in Ebensburg has to know essentially the same skills, the teaching methodology may be different for the kid in the city ghetto or the kid in a rural Appalachia ghetto.

We at Admiral Peary believe that the potential of the TIMES concept is limited only by the ability of educators throughout the state and county to adopt, adapt and apply the concept to their local needs.

LABOR'S MANPOWER ARM

MINONA CLINTON

AREA REPRESENTATIVE, HUMAN RESOURCES DEVELOPMENT INSTITUTE, AFL-CIO, PITTSBURGH, PA.

The HUMAN RESOURCES DEVELOPMENT INSTITUTE (H.R.D.I.), a non-profit program, was established by the AFL-CIO Executive Board of Directors in September of 1968 as Labor's "Manpower Arm". President George Meany is Chairman of the Institute's Board of Directors and Julius Rothman is the President and Director of H.R.D.I.

The HUMAN RESOURCES DEVELOPMENT INSTITUTE, under contract with the U. S. Department of Labor, has established offices in fifty major industrial centers throughout the country, including Puerto Rico.

The Institute was mandated to "mobilize and utilize the vast resources of skilled talent and experience available within the Labor Movement to plan, develop, coordinate and operate programs for the hard-core unemployed", to prepare and train them for good jobs at decent pay.

The full-time staff all of whom come from the ranks of organized labor, work through local and state central labor bodies to provide technical assistance to the unions on all federally-funded manpower programs, and as liaison with local, state and federal manpower agencies. All are keenly aware of the needs and problems of the disadvantaged and by providing direction, guidance and leadership to organized labor's expanding activity and involvement in the manpower field; their presence has added a new and significant dimension to the technical resources available in the field of manpower. This role has enabled H.R.D.E. over a five year period, to become deeply involved in a broad spectrum of manpower programs and problems.

To be more specific, I would like to cite some of the H.R.D.I. program activities.

JOB CORPS

In the JOB CORPS, five building trades unions and one railroad union are preparing well over 2,000 JOB CORPS enrollees either for direct employment or for indenture as apprentices.

The five building trades programs are conducted in the JOB CORPS conservation centers with the unions providing instructional and placement services. Every youth who completes the training is assured a placement in the trade of his choice. The two larger programs are being carried out by the Carpenters and the Painters. Other Building Trades unions involved are Operating Engineers, Bricklayers and the Cement Masons.

The Brotherhood of Railway and Airline Clerks program is located in residential centers in Chicago and Los Angeles.

The unions involved have a placement record of 94% of these completing from six months to a year of training. Starting pay for the apprentices in the Building Trades is around $3.00 an hour.

JOBS — JOBS OPTIONAL

The AFL-CIO and its affiliates are related to the JOBS program in several ways. The AFL-CIO provides a full-time liason officer to the National Alliance of Businessmen, the promotional arm of the JOBS Program.

The fifty H.R.D.I. staff representatives are active in assisting in the development of JOBS contracts. They also work with both union and management in ironing out any differences that may arise during the operational period of the contract.

Between October, 1970 and November 30, 1971, the H.R.D.I. staff assisted in developing contracts covering 21,496 training slots. Of these, 3,519 were for upgrading of workers already on the job.

In addition, H.R.D.I. developed the Buddy Program to assist with the problems of retaining workers hired under the JOBS program.

The Buddy, a trained union member provides the personal support on-the-job that many need, especially during the initial period on the job.

During 1970 to 1971, sixty-seven "Buddy" Programs were held and 1,710 workers trained for their role as "Buddies".

VETERANS ASSISTANCE PROGRAM

H.R.D.I. developed a small Veterans Assistance Program at the request of the Department of Defense. Three H.R.D.I staff representatives are stationed at the Separation Centers at Treasure Island (serving Navy and Marine personnel) and the Oakland Army Base in the San Francisco Bay Area. The Servicemen being separated are given a general orientation about the job situation and those interested in further job placement assistance are individually interviewed.

If the Veteran feels that he would like to have the AFL-CIO help him find a job when he returns home, a referral card on the Veteran is sent to the H.R.D.I. office or to a local AFL-CIO labor council, whichever is closer to the Veteran's home.

From March 1, 1971 (the date the West Coast operation started) through October 30, 1971, 629 Veterans were placed into jobs at an average wage of over $3.20 per hour.

SUMMER YOUTH EMPLOYMENT

Throughout the five years of H.R.D.I.'s existence, staff has always been concerned with finding jobs for in-school youth. Through concentrated effort in the Spring of 1971, almost 8,000 young people were placed in jobs, many of them paying well over the minimum wage.

H.R.D.I. also has a heavy involvement in apprenticeship through the 17 Apprenticeship Outreach Programs (AOPs) it administers.

The programs, all sponsored by building and construction trades councils, placed 286 minorities in apprenticeships in 18 trades, between April and July 1973. Another 64 minorities entered journeymen positions through AOP activities.

Other program activities involve —

(a) Work with prisoners and ex-offenders

(b) Work with state and local manpower planning councils

(c) Veterans Construction JOB Clearinghouse

(d) Development of local, area or statewide manpower conferences for the purpose of informing union leaders and members of the need, purpose and potential of federally funded manpower programs.

JOB DEVELOPMENT AND PLACEMENT

Finally, H R D I. since its inception, has been deeply involved and concerned with finding decent paying, permanent jobs for the disadvantaged unemployed, enabling them to enter the mainstream of our economic life.

True, the nation's priorities seemed to have changed, particularly with the present administration, however, H.R.D.I.'s responsibility and all out effort in this area has not diminished but has accelerated along with our top priority to assist Vietnam Era Veterans, many of whom now fall within the disadvantaged classification.

To recap our accomplishments in job development and placement, I will give you a few figures on what was done in 1972 by H.R.D.I., which should clearly illustrate what we have done over the past five years.

In 1972, we developed about 29,000 jobs, and we ourselves placed more than 9,000 workers in these jobs. Our Department of Labor contractural goal during 1972 was to develop 17,500 jobs. We actually developed far more than we were pledged to develop. And, even though the Labor Department did not ask us to place people into these jobs, we placed more than 9,000. . .

Well now, who were these people that we placed in jobs — Almost 500 were ex-offenders — exconvicts; more than 2300 were Vietnam era veterans; we placed over 2500 youngster from poverty neighborhoods in Summer youth employment programs; and we placed some 1200 Welfare recipients.

Considering that we have a relatively small staff, we think that this is a pretty good record.

However, it was a scramble not only to find the jobs, but quite a chore to assist the applicant to become employable.

Employability, job readiness, salable skills, intellectural caliber, work oriented, etc. These are frustrating words to anyone involved in fighting the war on unemployment today.

Why must this frustration exist? Why must job placement personnel be concerned with making a job applicant employable?

Confronted with these and other related questions concerning todays chronically unemployed, it is not difficult to see that we have missed the boat in our educational process and "Career Education" is needed.

"Career Education" is an educational process whereby teaching and learning provide for broad-based academic accomplishments, including communicative skills, where career awareness is developed, and exposure to careers is provided. All students emerging from the process should be equipped with salable skills and the desire and ability to work. Above all, each student would be in a position to absorb either further education or further training, considering both of these factors as salable skills. A person's career, I think, is his whole lifetime from birth to death, including work and leisure. "Career Education" should provide for vocational appreciations to preclude circumstances where the goal of personal fulfillment and gratification is limited by job conditions.

"Career Education" must encompass a new social awareness whose objectives must be to rededicate our society to the equality of man and a total reaffirmation toward destroying class hatred, racial bigotry, and inequality of opportunity."

In closing, I would like to share with you the statement and position adopted by the AFL-CIO Executive Council on Career Education at Bal Harbour, Florida, February 15, 1972.

Statement by the AFL-CIO Executive Council on Career Education

Bal Harbor, Flordia — February 15, 1972

Recently the United States Office of Education has been placing strong emphasis upon career education. The AFL-CIO welcomes this trend as one which furthers the views long held by organized labor.

The AFL-CIO at its 1969 convention declared: "Schools must prepare all students for the realities of the world of work. Such preparation can best be achieved through comprehensive organization of schools which bring together general education and vocational education, beginning even in the elementary school years and continuing on through the junior college level. Such a unified approach, by giving all students at least some experience in skill training and by giving all students a solid foundation in English, mathematics, sciences and social studies, can do much to restore the dignity of labor, a concept which has often been lost in the school of the past."

The AFL-CIO has further urged that schools expand the occupational categories in which they provide training to their students and that vocational education be designed not to narrow, but to widen the options which are available to young people. A student who enters into a vocational education program should not thereby have to shut off the future possibility of going on to higher education.

The career education proposals being developed by the Office of Education have the potential for fulfilling these goals. There are nevertheless a number of facts which temper labor's enthusiasm.

One of the most important questions is that concerning career education in President Nixon's proposed 1973 budget. The President proposes to fund career education programs in considerable part under the Vocational Education Act, and, as in past years, the President proposes an appropriation of less than half of what Congress has authorized under this Act. This grossly inadequate budget request creates a serious credibility gap with regard to the Administration's professed enthusiasm for career education.

What is more, the President again pressed for the enactment of his education block grant bill which would explicitly repeal the Vocational Education Act of 1963 and the Amendments of 1968. All of the provisions of this legislation would be wiped out, even including the requirements that states establish vocational advisory committees.

In place of the Vocational Education Act, the Administration's education block grant bill would simply earmark a portion of federal funds for education, without any other restrictions, for career education. Even these funds would be subject to further depletion. States would be permitted to transfer up to 20% of the funds for career education to other purposes. It is difficult to square these facts with the Office of Education statements about the high priority it places on career education.

Perhaps the most dangerous of all tendencies in the Administration's plans is the announcement that of four "models" for career education now being planned, one is to be an "Employer-based Model". According to the Office of Education, "The program will be operated by a consortia of employers. Each consortium will encourage the assistance and active support of diverse community elements, such as unions, schools, parents, PTA's and Chambers of Commerce."

Under the proposal, employers would create, develop, and operate a career education program for students from 13 to 20 years old, combining classroom teaching with on-the-job experience. An indication of the thinking implicit in the Administration strategy is the fact that the Department of Labor has been studying ways of easing the Child Labor Laws so as to permit younger students to work in factories and at other jobs. It is difficult to believe that such a program would not displace at least some older employees, and the moral implications of going back to the practice of employing children at sub-standard wages are unthinkable.

Commissioner of Education Sidney Marland has gone so far as to suggest "tax credits" as "suitable incentives to encourage participation by businessmen."

The AFL-CIO has no intention of giving "assistance and active support" to any plan which would turn a major part of the public schools over to "a consortium of employers" and which would give them a new tax loophole at the same time.

Finally, much of the Administration's praise for career education comes in the context of statements to the effect that too many young people now in college really don't belong there and that they would profit more from vocational education. It is difficult to avoid the implication that what is really involved is not so much an upgrading of career education as an effort to find an excuse for less federal support for higher education. Significantly, President Nixon's 1973 budget message proposes cuts in Office of Education programs in higher education which far exceed the additional $55 million which is asked for career education.

The AFL-CIO supports career education but we will not allow it to be won at the expense of narrowing opportunities for higher education.

COOPERATIVE EDUCATION AND THE WORLD OF WORK

DONALD EVANS

COORDINATOR, COOPERATIVE EDUCATION, ALTOONA AREA VOCATIONAL-TECHNICAL SCHOOL, ALTOONA, PA.

I. GENERAL INFORMATION

The Cooperative Vocational Education Program of the Altoona Area Vo-Tech School is a course offered by the Blair County Area Schools for students interested in learning a vocation and gaining practical on-the-job training while enrolled in high school The program is a cooperative venture between interested employers and the local school in an effort to provide students with the opportunity to learn the occupation of their choice. The on-the-job training and the specific job-related information obtained in the classroom provides local students with opportunity to learn and to advance in particular occupations.

A. Meaning of the Program

The name of this program describes itself adequately in that it is a cooperative venture between the school and local business or industry in working together to provide training in the areas of student interest. The program will consist of on-the-job training which is provided by the local employer and the coordinated related instruction which is provided by the school.

B. Importance of the Program to the Student Trainee

When students select this program, they indicate by their choice that they are interested in learning a trade that will afford them a livelihood in their adult years. In this program, they may work for several years or even an entire life. This program is designed to provide students with first-hand experience in local business or industry while they are learning their chosen occupation. A year's experience will also help them decide if their original choice was really the correct one for them.

Training in this field should also help make the high school program more meaningful to the student trainee. They will be able to apply the basic principles learned in such areas as: English, mathamatics, science, shop, etc. This will vary with the occupation which they select and the courses they take prior to the Junior and/or Senior years. Research has shown that students in a program such as this have been able to do better work in their other studies. The Cooperative Vocational Education Program will mold the in-school training and work experience together into an organized program by providing supervised training experience on the job and an opportunity to study related information that will enable the student to show progress in their chosen occupation.

C. Purpose of C.V.E.

The basic purpose of cooperative vocational education is to provide occupational training through the use of business and industrial concerns and to help bridge the gap between school and employment. Cooperative vocational

education programs take a school curriculum beyond the four walls of the high school and use the community as its classrooms. The facilities of the local business and industries are used for the vocational classroom and local craftsmen are the instructors. It offers the blending of high school instruction with on-the-job experience. Training is offered where regular preparatory training could not be offered. It is also used as a capstone activity in the present vocational programs Cooperative vocational education cannot only offer a variety of occupational areas, but can also, accommodate many levels of training from semi-skilled to the technician level.

D. How C.V.E. Functions

This program is designed to provide the students the necessary vocational training to learn a trade while they are completing their high school education. The job training is designed so that it should not interfere with other studies and should make them more meaningful to the student. They must remember this program is an elective program and that the requirements of the high school graduation are the same as for students enrolled in the other program in the school. It is vitally important that they do a good job in all phases of their high school work.

The coordinator will counsel them from time to time regarding the progress at the training station. He will assist students with any problems they might have with their job or high school program. The coordinator will visit frequently at the training station and confer with the employer for the purpose of observing progress on the job and to decide the type of related information which will be of most value at that particular time.

E. Responsibilities of C.V.E. Students

Thus far in their educational program three parties—the student, their parents, and the school—have been concerned with their progress. Now, they will have the fourth party involved, namely, the employer. He is extremely interested in their progress because they are becoming a more valuable employee as the year progresses.

As they expect certain demands from the employer, he will expect several things from them in return. They are expected to be dependable at all times. He will expect them to be loyal to him, his company, and his product. He will expect them to be honest in their dealings with his time, money, and materials. The student will be expected to be enthusiastic to learn all there is to know about the job.

The students will have certain responsibilities to the school. Considerable time has been spent in arranging the schedule so that they can participate in this program. Despite the fact that they will be away from the school for a part of each school day, they will be under the jurisdiction of the school. Their conduct, appearance, and attitudes will reflect either good or bad impressions upon the school. In most cases, they will be the only direct contact between the school and the employer. It is the students' responsibility that the acquired impressions of the school are of the highest order.

II. PROGRAM POLICY

A. General

1. Student applicants to the Program understand, in advance, that employment participation becomes effective only upon school approval of placement in part-time employment or upon school approval of a student's previous self-placement. A "school approval" of student employment in the Program is necessary for the protection of students' health, safety and best total school performance, also for compliance with local, state, and federal laws as they apply.

2. In all cases, each student applicant's scholastic career and its completion by graduation are held by the school to be of primary importance. Acceptance for or rejection from Program participation is based fundamentally on that administrative policy. In other words, only those students judged by the Coordinator and the concerned school counselor as one likely to be helped toward their occupational goal by the Program participation will be approved as eligible for such part-time employment.

3. Immediate application for "work papers" as required by law, is to be made by students under 18 years of age prior to each employment placement and always through home high school to the required agencies for issuance of same. This includes a physical examination by applicant's family physician. Students over 18 years of age may be asked to present birth certificate to further verify age.

4. Assuming that the student has performed satisfactorily at school and at work with expected cooperation and good personal conduct, he will receive credit toward graduation in accordance with the policy established by his home school.

5. Students may not leave their jobs, or accept other employment, during any school term in conjunction with this program without previous consultation with the approval of the Program Coordinator.

6. A student must, in every instance, see that employer and Coordinator are notified of any absence due to illness serious enough to justify absence from work. Absence notes must comply with the participating schools attendance policies Excessive absences from school or from the training station may be cause for removal from the program.

7. If necessary to attend school activities during scheduled working hours, the student must ask the employer for an excused absence from work. However, employment for pay represents, in effect, a choice firmly made by the student, with parental approval, to meet the established conditions of the employment originally accepted by the student for duration at least of the current school year.

8. Each student permitted to participate in this Program is required to maintain penalty free self-discipline, during the entire school year, both inside and outside the school area. Cause for school's disciplining a program member-student may require his or her immediate dismissal from Program, aside from

any other school disciplinary measures invoked, again with consequent loss of scholastic credits toward graduation.

9. The student is expected to live up to all rules and regulations as outlined by his employer, to work for the best interests of the employer, and to keep matters of business in strict confidence. In the event of controversial job problems, he is expected to discuss those directly with the Coordinator who in turn will discuss same with the employer.

10. Employment is a requirement for enrollment in the cooperative program. The employment status of the student serves to provide the necessary laboratory experience, through which each student may test basic concepts in practical situations. In the event that a student's employment is terminated, every effort will be made to secure a new position for the student. If, however, after a reasonable time a satisfactory employer is not found, the student will be rescheduled in regular classes to complete his education.

B. Student Trainee Policy

1. Identification Card — Each student in the program receives a wallet-sized card that indicates that they are enrolled in the Cooperative Vocational Education Program for the current school year. The card is verification that they are excused from school during the day to go to the training station.

2. Attendance at School and Work — It is expected that the students be regular in their attendance at school as well as on the job. They have an obligation to be at their place of employment at the times agreed upon. Their absence creates undesirable situations in that their fellow employees must do their job as well as their own if the work is to be completed. "If you are too sick to come to school, you are too sick to work." The coordinator requests employers not to let students work unless they have been in school that day. The student must also agree to call his employer and the school before as agreed but no later than 10.00 a.m. if he is going to be absent from school. It is important that the employer have this information in order that he can plan his work for the day. If the student does not phone the school by 10.00 a.m., it is assumed that he is skipping school and the employer is called to inform him of his absence from school. — Students not at their training station on a particular day are expected to attend school during the training period and until school has been dismissed for the day.

3. School Vacations — The employer is given a copy of the school calendar in order that he knows when school is in operation. Whether the students work during school vacation periods is to be agreed upon by them and their employer. At certain times of the year, employers have a great need for extra help and it is requested that the students will help them out during the rush periods.

4. Discipline — If the student is making adult decisions on the job, it is expected that he also acts as an adult during the time he is in school However, if he should violate school policy, he is treated in the same manner as any other

student. Because he is working during part of the day is no excuse for missing detention. It is to be remembered that should the student be suspended from school for a period of time, he is not to work until he has been reinstated into school. Employers are informed of all suspensions.

5. Auto Parking — All Cooperative Vocational Education students park in the area assigned to them. They are not to park in those areas set aside for others to park.

6. Student Insurance — It is recommended that students have student accidence insurance policies. The school provides the opportunity to purchase types of insurance policies. Some policies will provide coverage during the time school is in operation whereas the other types of policies protect them twenty-four hours a day for twelve months. Employers are required to carry Workmen's Compensation on the student, however, this protects them only while they are working.

7. Transportation — Transportation to the place of employment and to their home is the responsibility of the student and parent.

8. Work Permits — State and federal laws require persons under eighteen years of age to secure work permits. Employers are required to have the permit on file at all times while the student is working for them. Failure to do this could result in heavy fines. It is the students' responsibility to obtain the work permit.

9. Hours of Employment — Employers have agreed to provide a minimum of ten hours of employment each week. However, many employers have found it advantageous to request students for a longer period each week and possibly some hours on Saturday. The exact number of hours vary from employer to employer. For students under eighteen years of age, employers must abide by state and federal child labor laws. The laws state the conditions under which minors can work.

10. Wages — Wages paid to students vary among employers, however, the wage must be at least the minimum wage, or approved subminimum wage required by state and federal laws. Some employers give raises during the year on the basis of the student's performance. Other employers may not give any raises until the training program has been completed at the end of the school year. The training and experience are the most important facets of the Cooperative Vocational Education program.

11. Termination of Employment — If a student has been dismissed from the program for just cause, he is dropped from the Cooperative Vocational Education Program and no credits are given to the student. Just cause includes such things as irregular attendance, stealing, lying and other acts of dishonesty, etc. Should a student have his employment terminated because of conditions beyond his control, the school attempts to place him in a similar type training station.

12. Unemployment Benefits — Because the students are considered as part-time employees and student trainees, they are not eligible for any unemployment benefits.

13. Student Notebook — Each student is expected to have a notebook for the school year. All pertinent material dealing with the in-school and on-the-job training are to be kept in the notebook. Notebooks are checked and graded at various intervals.

14. Grading — The Cooperative Vocational Education Program enables a student to receive credits toward graduation upon successful completion of the course. Grades are a composite of completion of notebook requirements, written assignments, efforts, attitude and performance on the job. All students are graded on the same set of standards.

15. Graduation — The main objective of any school program is the graduation from high school. It is the student's responsibility to see that all required courses are scheduled and successfully completed. Sometimes a full-time employment is dependent upon a student's attainment of a high school diploma.

16. Individual Problems — If there are any individual problems, the student should contact the C.V.E. Conrdinator and/or the guidance counselor, and his employer at once. While it is to be expected that students make decisions on the job, it is important that all misunderstandings be resolved as soon as possible

III. PROGRAM OBJECTIVES

A. The Blair County Cooperative Vocational Education Program primary objectives are:

1. To make available to the student learner all local educational resources, enabling exposure to an environment conducive to optimum learning, for the development of knowledges and skills realistic to actual and/or anticipated employment.

2. To develop training activities relevant to the student learners needs, interests, and abilities and provide adequate employment counseling.

3. To match student learners with training stations of predetermined quality to fulfill needs not met by existing curricula.

4. To provide realistic motivation, stimulated by the training station experiences and inter-related instruction, so that the student will be challenged to excell in the development of skills.

5. To stimulate individual career goals by helping the student learner develop satisfying work habits in an employable skill.

6. To promote employable skills and positive employer-employee relationship by on-the-job training along with interrelated instruction to the satisfaction of everyone and extend to the employer the opportunity to become involved in the educational process so the community needs for employment can be fulfilled.

7. To develop positive self-image, attitude and leadership abilities through relevant instruction and community involvement so that the student learner will be prepared upon graduation to enter the world of work.

8. To keep possible drop-outs in school by encouraging preferential skills until thoroughly trained to become gainfully employed upon graduation .

9. To provide an extensive public relations program that will inform all persons in the area concerning the functions and operations of cooperative vocational education.

CAREERS IN ENVIRONMENTAL PROTECTION

CHARLES W. HOWARD

CHIEF, SOLID WASTE BRANCH, U. S. ENVIROMENTAL PROTECTION AGENCY, PHILADELPHIA, PA.

It gives me a great privilege and honor to address you as your luncheon speaker. My topic is "The Enviromental Protection Agency and Career Opportunities."

I think that first I should inject the setback which EPA's Solid Waste Program recently suffered. Our budget for 1973 was drastically cut. We were geared for a $30 million budget but were given only $5.8 million. This budget was so short of projected needs that we had to go through the mechanics of a reduction in force.

What does this mean to you? Your students and technicians who were desirous of additional education in the technical fields related to solid waste will have to obtain financial aid for this training via other routes.

However, in some cases technical training in specific areas in solid waste programs will be provided via joint efforts of EPA, Department of Labor, and the state offices of solid waste management.

The Environmental Protection Agency was established in December of 1970, bringing together for the first time in a single agency the major environmental control programs of the federal government. The agency is charged with the responsibility of mounting an intergated attack on the environmental problems of air and water pollution, solid wastes, pesticides, radiation, and noise. Over 16 operational programs from three major divisions of the government were incorporated to provide coordinated control over various environmental diciplines. In essence, the major agencies involved were the Departments of Interior, Health, Education and Welfare, and Agriculture and to a lesser degree the Atomic Energy Commission.

To assist the agency in being responsive to environmental goals, it has established regional offices located at ten major cities in consonance with the geographical responsibilities of other federal agencies. For example, Region III is located in Philadelphia. Our areas of responsibility are Pennsylvania, Mayland, Virginia, West Virginia, Delaware, and District of Columbia. The agency's creation marked the end of the piecemeal approach to our nation's environmental problems which so often in the past, inhibited progressor merely substituted one form of pollution for another.

EPA was created to lead a broad, comprehensive attack on pollution. The new organizational structure makes it easier to identify, and to take into account, all the factors bearing on pollution and its control. It is facilitating the development of better information on the total impact of stresses reaching man from various parts of the environmental, and we hope to help you make possible more practical choices for a healthful, satisfying human life.

The manpower training staff within EPA is charged with the responsibility of developing and adequate supply of trained manpower to properly operate and maintain existing and future pollution control facilities.

This responsibility includes the education and training of personnel at all levels of operations, including management. The specific program elements are aimed primarily at: 1: the professional, 2. the technician, and 3. the operator.

EPA's training grants branch handles professional training and research fellowships. The direct training branch provides in-house training and highly specialized courses to industry and government interest. We also have state and local operator training programs. Several programs, some funded by the U. S. Department of Labor and the Office of Education, and some funded by EPA, are designed to train operators and technicians.

The primary objectives of the On-the-Job training program are to improve the skills of existing operators and to train new personnel in the field.

Under this program, thirty percent of the trainees are new entrants and the remaining seventy percent are already employed in the plant and are being upgraded. As you can see by these percentage figures, this industry is one of the fastest growing fields in the world today. This program combines classroom work with related in-plant training. In effect, our agency has created career ladders.

The total training course consists of 330 hours of classroom instruction and at least 70 hours of on-the-job training for each participant.

The Military Transition Program is conducted at installations with or near waste water treatment plants and in cooperation with nearby academic institutions and the Department of Defense. The purpose of the program is to provide armed service personnel, prior to discharge from the military, with marketable skills which will make them employable at entry-level operator positions in waste water treatment plants in civilian life.

Trainees are given 480 to 640 hours of training including actual "in plant" experience. Each section consists of a maximum of twelve servicemen who are in their last six months of duty.

We have an Institutional Training Program for operators which is conducted in community colleges or vocational training schools. It is geared to provide persons with no previous experience in the waste treatment field with a marketable skill which will make them employable at entry-level positions in wastewater treatment plants.

Trainees receive 800 hours of classroom instruction dealing with basic education related to plant operations, operating theory, and technique, and 440 hours of practical "hands-on" training in a water pollution control plant. Trainees in this program are provided subsistence and transportation allowances along with the training.

We also have a Public Service Careers Program. The overall objectives of this program are to provide thorough training and permanent employment for persons at all levels, and to stimulate the upgrading of current employees.

The program is available to any unit of state government or municipality The mission is designed to train any public works, or public utilities personnel, but is especially geared for training of personnel dealing directly with the operation and maintenance of wastewater treatment plants.

Under Section 5 (g) (1) of the Water Quality Act, EPA funds a wide variety of programs. The program categories consist of:

1. Operator training grants to state agencies for skill improvement training.
2. Highly specialized training such as advanced wastewater treatment courses and workshops in several locations throughout the nation: and, instructor training for persons involved in conducting training programs at the state and local level.

Direct training is offered at various permanent locations in the United States. The objectives of the direct training branch are to provide specialized training in the causes, prevention, and control of pollution.

Training is offered which is not generally or readily available elsewhere in specialized subjects. This includes current philosophies and practices, and recent developments in sanitary engineering, chemistry, aquatic biology, and microbiology in the field and in the laboratory.

As you can see, everything in EPA is geared along the scientific guidelines. What does this mean to you who are educators and those of you who represent business and industry? Let's take the individual who's ready to enter high school What shall it be, college preparatory, general education, or vocational-technical education?

Thought must be given as to what field he would like to be in when his high school days are behind him. In some circles taking physical science courses isn't the thing.

The question he should be asking himself is, what do I want to do with my life?

Ecology is no longer a coming thing, it's here and we need technicians, biologists, zoologists — you name it and we need them. The choice is his, but it is up to us, who are interested in the future, to help him make an intelligent choice so he has a skill with which to enter the world of work.

For those who have graduated from high school and are pondering as far as what direction to go, lab technicians are needed in areas such as soil conservation, water and air pollution control and other allied fields.

With regard to professional careers, how many have explored the areas of hydrology, geology, and the like fields? Are your technical schools, colleges and universities prepared to meet the need? Fellowship for graduate students in ecology are available.

Do you realize that government agencies and private firms are subsidizing eduation in this field? Do you as educators realize this? And do you who represent the business and industrial-community realize this?

I am not trying to tell you that today there are openings for all of those who desire technical training, and jobs for all of those who have these skills. But with the energy crisis, residual effects of pesticides, potential ocean pollution problems, cities running out of space to deposit solid waste, and municipal and industrial air pollution problems, who's going to be around to help solve these problems tomorrow?

In my presentation I have used ecology as a vehicle to demonstrate how career changes are emergnig in all fields. You who are interested in our growth must accept the fact that intelligent career selections are essential for national growth.

DISCUSSION - MODERATORS' REPORTS

Panel I

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DIRECTOR, RESEARCH COORDINATING UNIT, PA. DEPARTMENT OF EDUCATION, HARRISBURG, PA.

Since three of the four panel members from Group I had already made formal presentations, we began the session with the fourth panelist Mr. Robert Schnieder from the Pennsylvania Civil Service Commission, who made a brief presentation on his impressions or reactions to the topic at hand. Mr. Schnieder spoke of the desire and efforts of the Civil Service Commission to follow a competency based evaluation program. However, realistically, he pointed out that the assessment of competency is not an easy task. In many instances, competencies are achieved in informal settings or as a result of other job experiences. The absence of instrumentation or effective criteria for competency assessment is a major difficulty. As a result from necessity, the Civil Service Commission must resort to more formal requirements based in part on competency but also in part on formal education and similar requirements.

We also briefly discussed the problems encountered by government agencies and industry in terms of locating people to fulfill specific employment needs. Frequently, these needs, especially for government, are for a limited number of staff dispursed over a wide geographic area. Because of this, these agencies may initiate their own training program in a central location from which the employees are distributed. A role for schools in fulfilling these kinds of needs is difficult, especially without a close liaison with government and industry.

In response to a request, Don Evans elaborated on legal and liability problems that need be considered in establishing and operating an extensive cooperative education program. He also reviewed how they handled those situations.

The issue was brought up relative to the funding or support for the various educational programs. It was pointed out by Mr. Ken Moody that the contents of the programs should be a greater consideration than the means of support. However, realistically and historically, the agency providing the funds has a major say in terms of the content or philosophy of the program.

Perhaps what is most needed are programs that explore the cooperative funding arrangement where various levels of government and industry share in the selection of content, funding, administration and evaluation of those programs.

It was brought up that the community college system in Pennsylvania is an example of cooperative funding from local, state and federal levels as well as from the individual student. Perhaps what is most needed are contributions from industry in more areas than scholarship programs.

Panel II

GEORGE LOVE

ASSISTANT COMMISSIONER FOR BASIC EDUCATION,
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Stanley Cohen, the first speaker, emphasized that all of the issues raised by previous speakers existed in Philadelphia. He said that more emphasis was needed on the elementary and middle school levels. He also mentioned that students must be provided with marketable skills, although Skill Centers are not the answer to career education. Students, parents, and the business world need to be sold on the career education concept. There must be a greater articulation in grades kindergarten through 14, and the career education concept must be integrated within all of the curriculum. Additional funds are required to truly integrate career education in a school system.

Mr. Michael Pilot said that it is necessary for a school district to be aware of manpower demands and available manpower changes in order to be certain that children receive the appropriate education. Since an oversupply of college graduates exists, four years of college are not really needed for most of the positions that are presently being filled by college graduates. The employers are taking advantage by utilizing these men with the oversupply of training rather than taking employes with less training. There is presently a shortage of skilled workers. Schools must give students a knowledge of the vast range of opportunities that are available. The technology of today demands a specialist as opposed to the master mechanic. Future Department of Labor publications must be directed toward lower grade levels as opposed to secondary students and college freshmen.

The third panelist, Dr. Richard Richardson, said that faculty readiness is a problem, especially in his school where faculty are only at the theoretical and practical level of instruction. There are two groups of teachers at opposite ends of the scale. Improved communication between groups must occur. Goals and behavioral objectives for teaching staff must be established.

The fourth panelist, Mr. Thomas Walsh, described the composition of the United States Chamber of Commerce which consists of 1,100 trade associations, 2,700 local chambers of commerce, and 45,000 business firms. Some individual members are also involved, making a total of approximately five million people. The organization is a legislative lobbying body. Mr. Walsh was not sure that people believe or understand what career education is, that it is from kindergarten through the Ph. D. People are also not clear on the differentiation of career education and vocational education, if there is any difference. He said that funding should not be a problem, but simply involve a reallocation of resources. Certainly a massive amount of money is not needed to do what needs to be done. He is hopeful that some existing local funds may be used for career education without dependence on state and federal funding.

During the discussion period, the following issues were identified.

1. Staff training is needed. But what is the best training model that has been developed?

2. If education through the career concept does what it is supposed to do, will it be necessary for industry to be involved in training and retraining people?

3. Is there a possibility for funding relief by cooperative programs using employer equipment and facilities?

4. Should we educate individuals for manpower needs or provide education for life? The answer is that we should do both.

5. There is a need for local bimonthly or quarterly meetings of the same kinds of people present at this conference. These meetings should last for at least four hours and should be held in the area vocational-technical schools. Business people should play an important role in these conferences.

Panel III

MICHAEL CIVARELLA

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Interaction between panelists and group participants produced the following observations:

1. Funds earmarked for vocational education are inadequate when compared to funds for higher education. Therefore, vocational educators must develop an effective lobby if they are to plead their case for necessary and appropriate funding.

2. The wide acceptance of career education is a manifestation of society's displeasure with the present educational system. Career education, as an infusion strategy, can help to restore society's faith in its schools.

3. Job availability tends to influence the types of training programs unions will support. It is essential, therefore, that schools work closely with unions and other industrial groups. If, for instance, unions assess that there is an oversupply of workers in a particular skill area, it is unlikely that these unions will support the development of identical or similar programs in the vocational-technical school.

4. Since career education has been conceived as a "lifetime" concept, it should place more emphasis on continuing education and the career problems of adults than it presently does.

5. In the planning and development of training and preparation programs, unions and schools must work closely together to insure that students pursuing such programs in the vocational-technical schools will not have to repeat these courses or experiences as a prerequisite to union acceptance.

6. Schools must realize that they cannot train all students for all programs or jobs. Their lack of facilities, faculty, and expertise in some career areas would tend to negate the accomplishment of this goal. The variety of industries and their respective products suggests the need for schools and industries to work together in the areas of training and preparation rather than separately.

7. Advisory and/or Craft Councils should be formed which include representatives from business, labor, industry, and schools for the purpose of program planning and school-work articulation. Practicing craftsmen should be involved in curriculum development as well as staff development.

Questions for Further Study

The panelists and group participants proposed that subsequent seminars may want to address the following questions:

1. What can be done to sustain the joint-involvement of business, industry, labor and education in the area of career education?

2. What strategies might be employed to acquire the necessary Time and Manpower to pursue career education goals?

3. In their enthusiasm to implement career education, what precautions should schools take to protect the teaching and promotion of the cultural-aesthetic qualities of life?

4. How might union apprenticeship programs be better integrated with career education programs at both the secondary and post-secondary levels?

5. How can schools protect the freedom of individual choice while still being concerned with Manpower needs?