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ABSTRACT

Public education has become interested recently in the vocational system for the wrong reasons and is approaching it from the wrong perspective. Vocational education is not a separate discipline. Rather, it is an approach to the disciplines and the learning processes which, properly used, could reconstruct the American educational system for greater relevance of general education. Much of today's social unrest is the result of a steady decrease in the availability of jobs for the unskilled and a simultaneous increase in the number of young people who are totally unprepared for skilled employment. The blame belongs to the schools and colleges, for their failure to prepare students for today's world of work. Today's students are career-oriented. A liberal education is not enough. A redefinition of vocational education is needed to encompass the career theme. An educational program can, at one and the same time and at all levels, prepare students not only for better lives but also for better occupations. The current initial general education, then specialization, is inappropriate. The intertwining of liberal and vocational elements in an educational program should be integrated throughout the entire educational experience. Some Ford Foundation-assisted pilot programs to help achieve this end are described in this paper. (MF)

THE FORD FOUNDATION

Making Education Relevant

by MARVIN J. FELDMAN

The following is adapted from a paper by Marvin J. Feldman, program officer, the Ford Foundation, prepared for the Governor's Conference on Education, State of New Jersey, Rutgers University, April 2, 1966.

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A note on Foundation-assisted programs in vocational education will be found on page 12.

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BECAUSE I believe in the American public school system, and because I am proud of American education for not recognizing a class system or elitism, I am going to be critical. My criticism is that public education has become interested recently in the vocational system for what I think are the wrong reasons, and is approaching it from the wrong perspective.

My thesis is that vocational education is not a separate discipline and cannot be treated in the same way we approach mathematics, English, or the physical sciences. It is, rather, an approach to the disciplines and the learning process which, properly used, could reconstruct the American educational system for greater relevance of general education and a renascence of liberal-arts studies.

In what follows, I am going to ignore the other forces which shape learning — the home environment, the society of the street, and so on — and focus only on the schools. This is not because I believe the other forces have no influence on learning, but because I believe the schools have the greatest influence, and to a large degree can determine the ultimate effect of the other forces.

Concern for vocational education always rises during periods of crisis. There is little doubt that much of today's social unrest is the result of a steady decrease in the availability of jobs for the unskilled, and a simultaneous increase in the number of young people who are totally unprepared to meet the demands of skilled employment in our technological age.

The roster of reasons is familiar: the advance of automation on all fronts — business, industry, and agriculture; the disappearance of whole occupational categories; the increase of technical content in many surviving occupations; and the obsolescence of skills within occupational categories.

Jobs now require more mental capability, fewer physical skills, a higher educational attainment at the entry level, and greater versatility or adaptability in the worker over his productive lifetime.

These all tend to sharpen the line between idleness and employment, dependence and

independence, hopelessness and fulfillment. The trouble with the analysis, however, is that it places the blame on the job, the market, society, everywhere but where the responsibility mainly lies — in schools and colleges.

The primary reason that there are more unskilled competing for fewer jobs within their capabilities is that the schools have failed to prepare them for today's world of work. Some other culprits might be denounced — failure of the apprenticeship system because of high cost to industry, obsolete content, and restrictive union practices — but the primary responsibility for insuring that young people are prepared to function productively in adult life lies with the educational system, from kindergarten through college.

What has gone wrong? On one level, the deficiencies are fairly clear: failure to bring outmoded training facilities into line with on-the-job working conditions; failure to provide effective vocational guidance to a large enough group of students; failure to make changes in training content itself to meet new needs in the job market.

Seeds of Trouble

But there is a broader and more subtle deficiency, which pervades the educational system. It goes back to the time when general studies and vocational studies were conceived as separate tracks leading to separate life-goals — the former a preparation for liberal or professional higher education and the latter for those who lacked either the means or the skills for the former. It also goes back to the time when vocational education — manual training, they called it then — was used first to school delinquents, and acquired a lasting stigma as an inferior form of instruction.

Since then the vocational track has been assigned the role of taking over education at the point where the pupil is rejected by the general program.

Today's rallying cry for vocational education arises from the recognition and the fear that our educational system, especially in the cities, may break down through the public schools' inability to cope with an increasingly

heterogeneous student input. Further enthusiasm comes from the fact that additional training is one way of providing the higher skills required in today's world, from the concomitant thrust toward universal higher education, and the challenge of meeting the needs of a much more diverse student population in post-secondary education than ever before.

Vocational education has not lacked Federal assistance. The Smith-Hughes Act, various New Deal legislative actions and amendments, the National Defense Education Act, the Vocational Act of 1963, and the antipoverty legislation of the last three years have increased annual Federal appropriations to approximately two-thirds of a billion dollars. Unfortunately, most of this money has been earmarked either for the achievement of short-term goals or for training programs outside the regular educational system, such as manpower development and training programs, Opportunity Industrialization centers, Office of Economic Opportunity feeder systems, the Neighborhood Youth Corps programs, and various forms of skill centers. So the dichotomy is perpetuated.

Verbal Emphasis

But if we accept the proposition that the proper role of vocational education is to be custodian of those who fail to make the grade in some more general and somehow better system, we evade the real test, which is to improve the entire process of education. That such improvement is needed is clearly underlined by the fact that the two-track system itself has been augmented in many school systems with a third — a watered-down general curriculum.

There are many ways to describe students in our public schools. One way is: those who plan and do complete four or more years of college, those who plan and do complete two years or more of a community college, those who do not complete any program in formal education beyond the high school, and those who do not graduate from high school. We are all too ready to assume that the difference between these types is some kind of native intelligence. The really striking difference

among them is probably only the degree of their ability to verbalize — a skill which is understood and rewarded by our public school system. The point is that some children who are less verbally gifted and who do not look at things from an abstract point of view — the ones who do badly in the conventional general course — can learn the content of general education through the very techniques of vocational education. These children can learn and they can learn more quickly, if presented with the material in concrete, not abstract, form, and if allowed to demonstrate it manipulatively, not verbally.

Concern for vocational education has rarely been focused on its proper place and process within the educational system. This has served to distort its objectives, cloud its potential, and multiply its problems. Most important is that its displacement has deprived the educational system of a whole host of alternative techniques and methods with which to reinforce learning generally and better meet the needs of all students.

Career Interests

If there is one thing that we have learned in recent years, it is that today's students are career-oriented. They look to the schools to supply them with the kind of education that will enable them to participate in and contribute to our work-directed society. Their motivation to learn depends heavily on convincing and continuing evidence that this is the kind of education they are receiving. This is particularly true of the youngsters we label "deprived" today and who are considered grist for the general mill, but it is also true of many others. The "deprived" are not the only ones who seek assurance they are not wasting their time in school, or who are emerging from today's educational system unprepared or ill-prepared for productive life.

If we are to meet our educational responsibilities to space-age youth, we can no longer tolerate an educational system that in large part ignores the world of work; where occupational studies are considered inferior to general studies; and where youngsters in the vocational track do not receive the academic

training necessary for entry into college and those in college-preparatory programs are denied a vocational experience which relates their learning to reality.

A good first step is to redefine vocational education at least in part as that aspect of an educational experience which helps a person discover, define, and refine his talents, and to use them in working toward a career. This definition sees vocational education embracing, but not confined to, development of manual skills; it sees such skills used not merely to prepare for tasks, but as alternatives or supplements to verbal skills in the entire learning process. The definition requires, regardless of the educational level, an opportunity to learn and demonstrate learning in non-verbal ways, learning the relation between the educational program and the purpose and nature of work, developing a faculty for continuing growth, and the ability to work with, not merely alongside, others.

Alternatives in Action

Consider an elementary-school pupil with reading difficulties. The conventional school system would supply him with another text, a special teacher, and in effect an intensification of the abstract stimuli he already has trouble with. A systematic, integrated program on the other hand would use the concepts of vocational education and, as an alternative to another book, offer to let him work in a graphic-arts laboratory with type and simple printing presses — where instead of reading a page of printed material he would be printing one. Youngsters who have trouble with numbers might work in a woodshop, learning the concepts of measurement and numbers in a concrete setting — perhaps even fabricating their own number rods for "new math" exercises.

At another level, consider the premise that universal higher education is just around the corner. The trend toward a college education for all high-school graduates has risen sharply in recent years — to a point where more than half of them now at least enter either a four-year or a two-year college. Observers are

convinced that fifteen years hence schooling for everyone from age three to twenty will have become the general pattern, and education beyond the high school a necessity for most of our young people. Yet it is becoming increasingly apparent that colleges are not prepared to accommodate an influx of students who are strongly oriented toward specific career goals. Rejection and first-year attrition rates in post-secondary schools are high. A large proportion of youth — those labeled non-verbal, culturally deprived, or disadvantaged — are yearly lost to the productive process and to society.

Yet experience (in industry training programs, the armed forces, and other settings outside the formal school system) has shown that students who under conventional practices would have been deprived of a college education, succeeded when they were motivated by an occupational objective. This suggests that for many preparation for work as well as work itself is not only a means of obtaining economic security, but is an important means for the individual to develop himself and gain a positive self-image.

We need to create in our elementary and secondary schools a coordinated curriculum where vocational and general education reinforce each other; where carefully designed programs prepare youth for advanced training for such new career fields as are arising in medical technology, graphic arts, and a host of paraprofessional occupations; and where students are taught general work skills that are transferable from one occupation to another.

Under such a system, no student would be rejected outright at any stage — though he might be directed at least temporarily toward a more modest objective within the same career pattern if his performance at a given point indicated a low probability of success in his present choice. There would be no room for arbitrary standards, or for curriculum decisions based on convenience, expediency, or sources of teachers. All students would be considered potential candidates for post-secondary education and training.

Building a Program

An effective occupational and vocational education program would begin in the elementary school, where youngsters would be introduced to the concept of choice between achievement through verbal or abstract performance, and achievement through manipulation and demonstration with real objects. Both processes would be designed to achieve the same learning goals. Each unit of work in the language arts, for example, would begin with a self-directed experience in building something or in a simulated work setting, and youngsters at varying levels of readiness would be provided with achievement goals to match. Eventually all would have to verbalize or demonstrate what they have learned — but in different ways, at different times, each in accord with his own abilities and talent.

Furthermore, we can no longer pretend that it is possible to do an effective mass educational job in a single classroom, or from the viewpoint of a number of unrelated disciplines. Education is really not a series of separate little containers of knowledge, though we tend to act as if it were and thereby to establish further barriers to effective learning. A vocational objective, however, could be the vehicle to bring the containers together, to allow each student to see education in an action setting and to provide more flexible paths toward its attainment.

A prominent feature of elementary education would be continuing discussion of how man uses work to support himself, how the major types of occupation use knowledge, and of the fact that not all productivity is verbal. No effort should be spared to develop appreciation and respect for the varying talent of the individual, on the part of the pupil as well as of the school system. A major objective of elementary education should be to seek out the talent in each and show its relationship to the world of work.

In the junior- and comprehensive high-school teaching program, academic teachers would be teamed with vocational teachers representing laboratory, shop, and similar

settings. They would arrange their teaching in a coordinated curriculum each to reinforce the other and the subject matter.

The comprehensive program also would provide a new kind of industrial-arts course to be taken by all male students in junior high school. This would provide the basic manipulative skills needed in the high-school sequence, and would provide additional training in the use of demonstration as an alternative to verbal performance.

Vocational guidance would be introduced early in the middle-school years. A newly formulated guidance program would attempt to acquaint the student with the workings of industry and commerce, and help him match his talents to his career objective. It would also include an annual career-objective analysis for each student as diagnosed, discussed, predicted, and evaluated by the combined resources of man-made examinations, computer-oriented methodologies, and man- and machine-derived interpretations.

These individual employment plans, revised annually from the seventh grade onward, would enable the student to understand the relevance of school and his performance in it to his own career development. He would know where the jobs are, the types of training available, the requirements for admission and the demands that he would have to meet. Such a device would go a long way toward reducing the number of dropouts in our schools.

Such a system would require a complete and continuing inventory of the composition of the work force and employment market; a description of the skills needed to function in each occupation; and a detailed definition of performance criteria in each. This, however, would probably be the easiest requirement to meet, given adequate resources; modern electronic data processing and systems analysis already offer the equipment and methodology.

Post-Secondary Education

To implement the new vocational plan in full, community colleges and technical institutes would be available, offering programs which

articulate with — pick up from and continue in advanced form — experiences of at least the last two years of high school. Specific occupational training would lead either to an associate degree, or to a certificate of achievement in a broad range of subjects. In addition, technical institutes would work with state colleges to provide avenues toward still further training, and to assure that education is available to all — not only those with verbal abilities. The young men and women who do not continue their education beyond high school — a declining number, under this system — should be provided with a cooperative work-study program in the secondary years to prepare them for full-time employment upon graduation.

The two-year community colleges have not been very successful in designing programs in occupational education which are well related to earlier training. There are, of course, notable exceptions in California, Michigan, and Florida. In general, the ability to articulate with the secondary-school curriculum depends on the college's organizational structure. The best results have been achieved when the college functions as a part of a unified secondary system or of a county system which has its own feeder institutions.

Better Negro Education

The kind of educational system I have described has important implications for the relationship between vocational and higher education and the American Negro. It has become commonplace to observe that the United States is faced with a serious shortage of qualified manpower at the *technician level* in all professions. Meetings devoted to this problem in the past several years have produced an avalanche of materials and reports which dramatically illuminate the need in engineering, science, medicine and the social sciences for the assistance of large numbers of professional support personnel.

At the same time vast numbers of the socio-economically disadvantaged — especially Negroes — are being served by educational programs ill-related to current national occupational demands. Despite many warnings,

however, very little has been done, in attacking the problems of status, income, occupation, and living conditions of the Negro, to provide more and better technical education beyond the high school.

Rapid changes in technology, the explosion of knowledge, and problems caused by separation of liberal and vocational education have combined to create a mandate for the upgrading of courses which once had been trade, vocational, or technical, to the college level. Very few institutions which teach technical education or serve a predominantly Negro student body, however, are dedicated to a policy of teaching students how to study independently — an essential for college-level work.

Furthermore, the faculties of almost all institutions of higher education, including most of those in the South which serve a largely Negro constituency, are committed to the view that the central purpose of higher education is to produce the liberally educated man and woman.

And here lies the dilemma of higher education as the tool in the strategy of economic development for the Negro in America, for *a liberal education is not enough.*

Few would quarrel with the idea that a liberal education is essentially the same for all men at all times, but another concept in the classical definition of a good college education — preparation for a career — needs broadening.

Liberal education is more than an education for a gentleman of leisure (for whom leisure *is* a career), and should in no way foreclose technical education. An educational program can, at one and the same time — at all levels — teach youngsters not only how to prepare for better lives, but also for better occupations. The intertwining of liberal and vocational elements in an educational program seeking to expand opportunity for a major proportion of our population is both a necessity and a real possibility.

In pursuing this purpose, the two approaches need to be integrated throughout the entire educational experience. The current tendency to give a student initial general

education, then specialization, *is inappropriate on pedagogical grounds, and is at the root of the major problems in curriculum development*. Nor does it fit an educational philosophy which holds that culture and vocation cannot be separated.

American colleges have begun to learn that a larger portion of the population can profit from study on a college level than had earlier been assumed. This broader base expands considerably the number of young people of average intellectual ability who can go on to higher levels of education. The problem, however, is that this larger group contains persons of more diversified interest and in many instances less secondary-school achievement than previously was acceptable.

Some take the position that this means to accommodate the larger base is inevitably to lower the quality of higher education and to narrow the range of individual opportunity. Such an assumption is valid based only upon a narrow definition of higher education, and a rigid and simplistic view of its role and process. It ignores the concepts of flexibility, alternate programs, and multilevel goals which are implicit throughout the educational system I have described. If these are kept firmly in mind, it becomes clear that further extension of educational opportunity — both in terms of time and in terms of people — need threaten no loss of quality, but instead multiplies and broadens the pathways to higher achievement. In so doing, it offers promise of better lives and ultimately a better society in which quality of all kinds can better flourish.

Grants in Vocational Education

The Ford Foundation has assisted a series of pilot programs with promise for nationwide application to improve vocational education — both as career-oriented training and as an approach to better education generally.

Curriculum experiments at all grade levels — from kindergarten through college — fall into two principal categories:

To make vocational-technical education more relevant to the needs of modern technological society. Stout State University received funds to test, in ten cooperating Wisconsin high schools, a new industrial-arts course which presents manual and machine skills in a context of basic industrial concepts and processes rather than as unrelated exercises; the program seeks to offer the basis for a lifetime of learning and advancement rather than narrowly task-oriented knowledge. Grants to the City College of San Francisco and Western Washington State College assisted cooperative efforts with high schools in preparing students for careers in hotel and restaurant work and the graphic arts. While the programs equip students with marketable skills, they also prepare them for more specialized advanced training at the two colleges or other two- or four-year institutions.

To end the traditional separation between vocational and academic education and make both more meaningful — and accessible — to a broader range of students. Cogswell Polytechnical College received funds for a coordinated curriculum program in ten San Francisco Bay area high schools. The program involves careful planning of academic and vocational-laboratory courses by teams of specialist teachers, so that each course closely relates to and reinforces the others. Such preoccupational programs are being assisted in five New York City high schools in business, health, and food technologies, to replace a general curriculum offered to youngsters who are neither preparing for college nor being served by the city's specialized trade high schools. In the Newton, Massachusetts, school system all high schools have been converted to fully comprehensive schools, offer-

ing vocational and technical courses to all students as electives, just as academic courses are. Thus academic students may seek vocational-technical training to broaden their educational background, while vocationally-oriented students may take academic courses for the same purpose. And in the state of New Jersey, selected elementary school classes from kindergarten through sixth grade are testing the use of vocational techniques both as an alternative approach to conventional academic subject matter and as a means of introducing children early to the concepts and processes of a technical society.

Research, development, and information activities for curriculum improvement, as well as studies of other aspects of vocational education have also been supported. The American Institute for Research conducted a comparative study of career performance of vocational-school graduates and others in similar jobs, in an effort to clarify where and how people acquire skills, relevance of vocational and technical education to employment, and the kinds of vocational training with the best payoff. It is also analyzing a spectrum of occupations to identify general and transferable skills — information important to designing more broadly effeetive vocational courses. The W. E. Upjohn Institute for Employment Research assessed the role and function of industrial advisory committees which under Federal legislation counsel schools in their vocational programs. A research and development center for vocational and technical education at the University of Wisconsin is conducting multi-disciplinary studies of requirements and trends in the job market, design and demands of current vocational programs, and the transfer of information into improved programs of education. Another center, to help the nation's fast-growing two-year junior colleges and technical institutes develop up-to-date industrial and technical curricula, has been initiated at the Wentworth Institute, Boston. And an experiment in the use of computer-assisted guidance and evaluation, to enable technical schools to broaden the range of students they can serve, is being conducted at the New York

Institute of Technology. Under another grant, the Oklahoma City school system is seeking to determine what kind of courses would motivate high school dropouts to fulfill diploma requirements and acquire marketable skills. Special one-year courses in all-academic, academic-vocational, and all-vocational subjects were offered to selected groups of 100 dropouts each, and their subsequent performance is being compared with a control group.

Programs to help meet the shortage of capable vocational-technical teachers include an in-service training and consultant program at San Francisco State College, and a five-year master's degree program at Central Michigan University, both for secondary-school teachers. At the St. Louis Junior Colleges (in cooperation with the University of Southern Illinois), and at the Mississippi State University, programs prepare career teachers for two-year junior colleges and technical institutes.

At the college level, a series of demonstration programs in cooperative work-study education are being assisted. The programs enable college students to alternate periods of academic study with actual paid work experience, in industry or other fields, which is related to their career preparation. It also helps students of limited means finance their education. The National Commission for Cooperative Education received funds to counsel institutions in cooperative education.