

CHALLENGES TO VOCATIONAL EDUCATION

DURING THE DECADE AHEAD

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From having been a well-established, secure, and even static field vocational education has become, during the past few years and particularly with the funding of the Vocational Education Act of 1963, a dynamic field. It is full of challenges which both stimulate and threaten those who are established in it, attract others who have previously had little interest in it, and require that others give serious thought to these challenges and to ways of meeting them, however desirous they may be of not seeming to climb on a bandwagon or to join a gravy train. The invitation to prepare a paper on important issues in vocational education during the decade ahead is therefore itself a challenge.

It should be clear, however, that I write as an outsider looking in, as a vocational psychologist and vocational guidance specialist who has had many and frequent contacts with vocational and technical education without ever having had this as his primary concern. Among the most recent experiences which contribute to the thinking back of this paper are participation in one of the Advanced Research Seminars in Vocational Education organized under the auspices of the Office of Education, committee meetings in Washington on the guidelines for the use of research funds in vocational education under the Act of 1963, meetings at the state and county level in several Eastern states on current developments in vocational education, and a recent meeting organized by a committee in my own institution on our role, as a graduate school of education, in vocational and technical education

(parts of this paper are based on a paper prepared for that meeting). If these thoughts are helpful to others engaging in similar study this is naturally a source of personal satisfaction.

Three Challenges

Vocational education today faces three major challenges. One of these it understands and welcomes, although those who are responsible for this field of education are not unanimous in their responses to it. The second is, along with the first, recognized by the Vocational Education Act of 1963 and by many of the more thoughtful leaders in vocational education, but tends to be overtly or covertly rejected by large numbers of vocational educators. The third is recognized largely by certain manpower specialists and by some observers of the social scene and is not, today, even admitted as a concern of vocational education by most educators. These three challenges are, respectively, 1) the demand for increasing numbers and percentages of skilled and technical workers, 2) the vocational education, i.e., the education for work, of those who become semi-skilled workers, and, 3) avocational education for those in whose lives work is likely to play a declining role temporally and psychologically.

Skilled and Technical Occupations

It has been frequently pointed out that the industrial revolution has, in its more mature forms, moved to eliminate the semi-skilled jobs which it first created in such great numbers, and to bring about a demand, instead, for increasing numbers of skilled workers. As industrial change proceeds in its automated form, it creates demands for increased skill and increased technical knowledge in these skilled workers. A new category of worker has, in the opinion of some, emerged: the technician. He is more able, more highly trained, than the skilled worker, but less so, and less responsible,

than the technologically trained professional..

This increased emphasis on skill has been interpreted by many vocational educators as justification for their programs, and the increased funds are viewed by them as funds for the expansion and improvement in various minor ways of what they are already doing. More money is taken to mean more of the same for larger numbers of people.

Opposed to this point of view, however, is one which stresses the level of education needed in order to master the knowledge and to to acquire the skills called for by the more highly skilled and technical occupation of the decade ahead. In his chapter in the 64th Yearbook of the National Society for the Study of Education (Barlow, 1965), Ginzberg urges that because of this increase in required skill level all students capable of completing an academic program in high school be encouraged to do so, postponing vocational and technical education until the post-high-school years. In the same volume Haskew and Tumlin take a somewhat similar position, proposing that the common school become what they call preparatory rather than finishing, leaving what they label employment training for the post-high-school years. These latter writers do, it is true, advocate a curriculum which is not strictly academic in its nature, and not vocational in the traditional sense, but one which is permeated with a work orientation which they propose as a redefinition of vocational education at that level.

I would like to propose another characteristic of vocational education in the secondary school, another objective which it should seek to attain along with the development of readiness to work. This is that vocational education in the secondary school should be exploratory. A better way of putting it would be that secondary education should, in developing a readiness to work, enable a pupil to find out about his abilities and interests and how they may enable him to fit into the world of work, and should give him an orientation

to occupations and to careers which will provide a basis for making occupational decisions when and as they need to be made. While doing this his education should, in ^{Haslow} Haslow and Tumlin's sense, be preparatory. It should help him to acquire the basic skills (communicative, computational, and social) which will enable him to function in society, and to acquire the special vocational training which he will seek in a technical institute, in the armed forces, or in industry.

The notion that secondary education should be, at least in part, exploratory is not novel. It was at the heart of the junior high school movement, but was lost sight of as junior high schools became strictly preparatory for high school or for vocational school. The problem was that the concept of exploration was never made operational in the classroom, in the shop, in activities, or in employment. Even cooperative employment programs have had either a training emphasis or, much more rarely as at Antioch College, a liberal educational objective. But the need for exploratory use of school and college courses and of part-time and summer employment has been stressed by studies of vocational maturity in the ninth grade (Super and Overstreet, 1960) and by numerous case studies (e.g., Marjorie Miller in Super, 1957, pp. 92-100).

Vocational exploration denotes the process of experiencing work and vocationally related activities in ways which increase understanding of the nature of occupations and of one's own work-related aptitudes, abilities, and interests. It has been found, for example (Hoffman, 1958), that blind persons who have performed manual chores at home do better in workshop training, independently of manual dexterity: they are better oriented to the industrial task, even though the task itself is different, as a result of having made beds, emptied wastebaskets, put up screens, etc. That teachers of vocationally relevant subjects have too often failed to make their subjects exploratory is partly the result of the subject-matter specialist's interest in mastery rather than in orientation, partly a result of ignorance as to how to create

exploratory attitudes in boys and girls whose curiosity has not been aroused.

The proper use of exploratory experiences would, I believe, provide a partial answer to the need pointed out by Ginzberg (Barlow, 1965; 34), to provide "appropriate curricular differences" for the $\frac{1}{4}$ to $\frac{1}{3}$ of our high school pupils who cannot apparently benefit from an academic program. They need something more concrete, more realistic, than academic subjects verbally taught. Vocational activities can be made to savor of the adult, the real, the outside, world. The exploratory use of courses and activities would provide that pervasive but ill-defined element sought by Haskew and Tumlin (Barlow, 1965; 83) which orients pupils to work without seeking to train them for work.

A first task, then, in the field of vocational education is to devise ways in which vocational exploration can take place during the secondary school years. One can thus lay the foundations for future vocational decisions, as well as make concrete and real what would otherwise be, to some, an abstract and hence unreal experience. This is a task which calls for the cooperation of experts in vocational development, in counseling, in curriculum and instruction, and in vocational education, unshackled by either academic or trade traditions. If it is well carried out the pupils who are capable of skilled and technical training will be able to move ahead to appropriate post-high-school education and training, and the minority who are not able to do this will have an orientation to work and to occupations which will be helpful in pursuing the varied career of a semi-skilled worker.

A second task, therefore, in education for the skilled trades and for technical occupations below the professional level, is to expand and improve post-high-school education in these fields. Here it seems important to make the distinction between education and training, for there is considerable validity in Ginzberg's (Barlow, 1965; 21) point that much training takes place on the job more realistically and more economically than in schools.

Especially in an age of rapid technological change does this seem important, despite the difficulties which face the curriculum maker and the syllabus developer who attempt to distill, from the specific jobs, the elements which legitimately constitute formal education for a trade. Closely related to this problem is that of identifying and describing jobs in a rapidly changing field: the job title of electronics technician, for example, is one which includes a great range of skill levels and of duties.

I have put this task in curricular and job analysis terms, but it needs also to be viewed in fiscal and in sociological terms. Under the former heading come the problems of financing and establishing or converting a sufficient number of well-located post-high-school institutes. Under the latter heading are the problems of creating a readiness on the part of the public to accept the postponement of what Haskew and Tumlin call "finishing" education until grades 13 and 14. California's experience suggests that, as affluence increases, and as appropriate industrial opportunities justify it, this can be done. But it may be worth noting also that some observers in California have pointed to a tendency for the post-high-school institutions to become increasingly academic and for vocational education to retreat to the secondary school. Whether this is evidence of a weakness in the basic idea of post-secondary vocational education or in the attempt to implement the basic idea is not now clear, but I suspect it is the latter.

The Semi-Skilled

Barlow's chapter in the NSSE Yearbook (Barlow, 1965: 5 and 13) makes two statements which reflect a contradiction inherent in vocational education as it has developed in this country. He states, on the one hand, that "the contemporary program of vocational education encompasses the vocational needs of 85 percent of the persons who enter and work in the nation's labor force", if one excepts those preparing for the professions. He later states that

"education in general has failed to help the disadvantaged youth, and vocational education has largely eliminated the group by imposing selective devices".

It would be more nearly correct to state that vocational education meets the needs of only those who aim at the skilled trades, and fails to meet the needs of nearly half of the boys and girls who enter high school and then the labor market as semi-skilled workers. Although the legislation is so phrased as to make these pupils its charges, vocational education has, either intentionally or unintentionally, shunted them off to general education or into the limbo of the drop-out.

The traditional stance of vocational education is that an occupation is a life work, something for which one prepares either in a specialized educational program or in an even more focussed apprenticeship, something one enters upon completion of training and pursues for the rest of one's working life. One chooses this occupation because of capacity for it and interest in it, because of opportunity to use these abilities and interests to earn a living. The craft is a matter of pride, it provides status, identity, and security.

There is a middle class bias in this conceptualization of occupations and of vocational education. For it is the middle class which knows, values, and experiences stability and commitment. The bias is fine for those who have the capacity, the interest, the sense of commitment, and the opportunity to pursue one specialized occupation. But it is not appropriate for the large numbers of young people and adults who do not have these middle class characteristics and advantages.

Career Patterns. The semi-skilled worker of the past and of the present has been shown, in a number of different studies, to be much more likely to have an unstable or multiple-trail career than are men in higher level occupations, and much less likely to have a stable or conventional

career (Miller and Form, 1951). The semi-skilled change jobs and occupations much more often than do the skilled, the clerical and sales, the executive, and the professional workers. The higher one goes on the socioeconomic scale the more stable or conventional the work history. This means that the individual is more likely to prepare for, enter, and advance in one field of work (the stable career typical of physicians), or to try one or more occupations and then settle down in a regular adult occupation (the conventional career, typical of executives). The lower the individual on the occupational ladder, the more likely he is to move around horizontally without ever climbing the ladder. The jobs that he gets and holds are often unrelated to the jobs he has held, and he tends not to hold them long. This was true in the 1920's, the period covered by Davidson and Anderson (1937), in the 1930's, the period covered by Miller and Form (1951), and it is true today as shown by the Department of Labor (1964) and by my own Career Pattern Study (unpublished data). Of course, some semi-skilled workers stay on one job, as gas station attendant, textile mill worker, or auto assembly man, for many years, but these appear to constitute a minority.

Vocational Education for Occupation or for Career? These facts, whether clearly or dimly perceived, are an apparent justification for not actually including most semi-skilled occupations in the program of vocational education, even though these occupations are included among those for which training may be provided. When the demand for training for a particular semi-skilled field, such as practical nursing and nurse's aids, is clear, the training is provided. But the focus is always on the occupation, rather than on the person who will fill it, even though it is a person who is being trained. Thus we train thousands of power sewing machine operators who work at the job for a short time only, creating vacancies for which more transient employees are to be trained. No one seems to ask, what happens to the ex-operator,

to what other occupations, if any, she shifts, how she makes these changes, and how well prepared she is to make them. It seems not to have occurred to leaders in vocational education that, for the frequently changing semi-skilled worker, education for a career-of-changing-jobs may itself constitute the most appropriate kind of vocational education.

The blindness of vocational educators to the needs of the semi-skilled worker has, of course, been the result of the nature of the legislation providing financial support. The training provided must be for an identifiable occupation, one for which workers are needed and for which a training program can be devised. This is fine for the occupations which contain some challenge, provide some status, are reasonably free of seasonal and cyclical variations in employment, and pay moderately well. In such instances training is for stable employment. But when the occupation lacks one or more of these characteristics there is no such stability. If the training to be provided had, as its objective, making the individual employable throughout a significant part of his career, the training would not necessarily have to be occupational. It could include other kinds of content needed for employability, and content relevant to a number of semi-skilled occupations in any one or combination of which the person might be employed during the succeeding years.

Another way of putting this is to say that vocational education should not be exclusively education for occupations, it should also be education for careers. It could then prepare not only for stable careers, as it now does, but also for unstable and multiple-trial careers, for the sequence of unrelated positions which many people occupy during the course of their working lives.

The Elimination of Semi-Skilled Jobs. The semi-skilled worker of today is not only a person whose career is neglected by vocational education,

he is one whose career is threatened by occupational trends. It has frequently been pointed out by manpower specialists that the increasing automatization of industry and business dispenses first with the semi-skilled worker. Some of these may find their way into skilled occupations, upgraded by salvage and retrieval activities such as those of the Manpower Development and Training Act, and company programs designed to prepare workers about to be displaced for the more demanding positions made available by the newer methods and equipment. But many seem destined to find their way only into the ranks of the unemployed.

The new semi-skilled occupations to which people point, as possible outlets for the displaced semiskilled who are not upgraded into skilled and technical occupations, are in the service fields. To some extent these will undoubtedly absorb the potential semiskilled workers of the future. These young people will learn to manicure lawns and gardens, to carve mantel pieces and do custom millwork for people who do not want to buy one of the three stock mantels or prefabricated panelling, and to repair radios and television sets which owners don't want to scrap in the mass production style of today. They are already learning to repair cars in greater numbers than ever, as multiple-car-owning families increase and don't see why they should have to turn in both cars every year or even every three years. But it does not seem likely that these and other service occupations, many of which also are being automated, will increase sufficiently in numbers to provide employment for all of the displaced. What will the others do, and how will they be educated to do it?

Many observers of the contemporary scene predict a great increase in the amount and importance of leisure. The available work may be spread among more people by having them work shorter hours. Or some may do the needed work while others learn to enjoy an enforced leisure at public expense.

In either case, learning how to use leisure, and how to enable leisure activities to give meaning to life as work has so far done for most people, seems destined to assume greater importance than ever. Just as the sons of knights and lesser nobles were once apprenticed out to greater nobles to learn, as pages and squires, the noble arts of leisure, so perhaps someday vocational education will be redefined to include education for the arts of leisure. Yes, it may be said, but not under the Vocational Education Act of 1963. Agreed. But then, we must ask, do we want to be bound, in preparing leaders for the field of vocational education, by the Act of 1963, or even by the possible Act of 1973, in the same way in which the leaders of the past generations have been bound and blinded by the Act of 1958 and by its predecessors since 1917? I think the answer is clear: if the vocational education of the next generation may, to be effective, need to include avocational education, then we must prepare leaders who have some vision of the possibilities in this area and who can move in this direction if the situation requires it. Today's leaders, I would judge, are largely not equipped to do this.

Having now identified the two major problems of the vocational education of the semi-skilled, let us now consider each of them in somewhat more detail, particularly in terms of possible means of formulating and making effective their solutions.

Education for Change. Education for change implies the development of either or both of two different kinds of skills in the individual. One of these, which I believe to be the more common, denotes the training of the student in fields which are so basic that he can with their help learn whatever he needs to learn as he encounters new situations and meets new demands. This is what contemporary French educators mean when they write about "une éducation technique polyvalente". It is a polyvalent technical education,

which results in such a firm grounding in mathematics and physics or chemistry (or all three) that the product of the training can solve unfamiliar problems, develop new methods, and adapt to changing conditions, all with greater ease than if he were a narrowly trained technician. This is what Princeton, M.I.T., Columbia, and certain other institutions have been attempting to achieve in their basic engineering programs, avoiding specialization in mechanical, electrical, chemical, or other fields of engineering. The objective is a generic engineer, who can learn to function in any of these specialties, or who can achieve his own new synthesis and specialty if the field so requires.

This kind of versatility, we must recognize, is not that which can be expected of the semi-skilled worker. This kind of polyvalence (if I may perpetuate that hybrid Greek and Latin word borrowed from biology by our French colleagues in education), involves a high level of ability to think in abstractions and to translate them into a variety of concrete forms. It requires, in other words, very superior intelligence. The typical semi-skilled worker does not have that much academic ability. This kind of polyvalence is clearly not for him.

What is Versatility? There is a second kind of versatility which is a combination of intellectual and personality factors. It is intellectual, in that it involves enough knowledge and skill in the basic or tool subjects of English, Mathematics, Natural Science and Social Sciences so that new specific, lower-level knowledge and skills can be acquired and new situations can be understood and adapted to readily. It involves personality, in that such versatility requires a flexibility, an openness to change and to dealing with change, which is at least as important in the semi-skilled worker as are knowledge and skill.

The knowledge and skill components are, some of them, already being sufficiently stressed by the advocates of excellence in education: I need not

dwell, here, on the importance of communication and computational skills or of physics and chemistry. My emphasis on the social sciences, as basic knowledge and skill subjects for semi-skilled workers, may be made in a context different from that of the advocates of general education, but their arguments for appropriate work in the social sciences for all are particularly pertinent for semi-skilled workers.

The pattern of unstable and multiple-trial careers which is so common in that group makes especially important an understanding of the economics, the sociology, and the psychology of industry and of work. For the semi-skilled worker, dealing periodically with the need to change job, occupation, or enterprise, needs to know when to change, what to change to, and how to change. He needs to know to find, and to use, whatever resources and data may be available to help him weigh such different variables as hourly wages, average hours worked per year, seasonality and seasonal alternatives, daily and weekly schedules, fringe benefits, management and supervision, associates, physical conditions of work, variety, freedom and pace of work, locality of employment, and inherent advantages or disadvantages of housing, schooling, recreation, and transportation. For him these variables are likely to be much more significant than the nature of the work itself, which may vary from time to time and from place to place. For him the social science of work will be much more important than the technical knowledge or skill of work, even though neither he nor the developers of the curricula of vocational education have generally conceived of these topics as vocational education. They are education for work and for careers, and hence they are vocational education.

Vocational Social Science. The social sciences as traditionally taught will not, of course, constitute the curriculum of instruction in the knowledge and skills of adaptation to differing types, settings, and locations

of work. There will need to be more emphasis on the structure and functioning of occupations, of industries, and of organizations. Career patterns, the economics of obsolescence and automation, occupational trends and ways of recognizing occupational change, the functioning of the labor market, budgeting for seasonal and cyclical unemployment, the use of social security, public assistance, and retraining programs in making the transition from one job to another, the way of life associated with different industries, occupations, and regions, are all part of vocational social science. For the miner's son leaving the hills of West Virginia for the slums of Chicago or Cleveland, knowledge of urban housing, transportation, and shopping are essential vocational skills. What good does it do him to find a job if he does not know how to use public transportation to get to and from it, and how long will he keep the job if he cannot manage his living quarters in the radically different conditions of the city? Just as, in vocational rehabilitation, the blind are taught travel techniques, so in vocational education the rural inhabitant needs, at a higher conceptual level, to be taught urban living. If he does not move to the city on graduation from high school the chances are that it will be because moved there earlier, when he dropped out of school.

If the social sciences cease to become purely academic subjects and become at least in part vocational, how will they be taught in the vocational curriculum of the future? They will, we may be sure, cease to be taught largely by means of written and spoken words, by books and written assignments. Even the widely used less abstract methods of movie and television will not suffice, although they will help. There will be more and more varied use of field visits, more involvement as in organized and perhaps "made" part-time and vacation work, for exploratory purposes.

The capacity to change will be developed by experiencing change

under supervision. Instead of working on one cooperative or vacation job assignment the student will work on a sequence of such jobs, each different from its predecessor, each in a setting different from that which preceded it. The boy will be a jumper, a soda-jerk, a wrapper, a gas station attendant, in succession. With the help of his coordinator and his classmates he will consider not only the knowledge and skills needed in each of his jobs, not only the human relations and economics of each situation, but also the problems of changing and adapting from job to job and from industry to industry. When asked to change because his work is not satisfactory, the reasons, his awareness or lack of awareness of them as they developed, the steps he took or might have taken to avoid discharge or to pave the way for moving to a more suitable position, will be reviewed.

These are all done now, to some extent, in cooperative education, but they are done incidentally to training in a particular occupation. Here they will be done for their own sakes, for training in versatility, for education which will give people stability in change. Vocational education in the secondary school will be exploratory rather than preparatory, except for work in the basic skills. The exploratory experiences will prepare the semi-skilled worker for a life of change. It will also, as pointed out earlier, lay the foundation for a wise choice of specialized field in the case of future skilled and technical workers who will go on to occupational training in special institutes, in the armed forces, and in industry.

There will be, let us recognize it at once, some very real problems in the development of curricula for the semi-skilled. In some instances the content and methods of instruction will be too academic, too abstract and too unreal, to challenge the interest and to maintain the efforts of the future semi-skilled worker. The content will have to be

developed, in some areas; for example, vocational economics as a specialty is non-existent. The methods will have to be developed, in other areas; for example, occupational sociology has to date been a subject only for college and graduate students, to be used by students of human behavior or by industrial managers. Opportunities for work experience for high school students have never been easy to find, unless employers have felt a real manpower shortage. But this is something which rarely happens at the semi-skilled level, the case of domestic service to the contrary notwithstanding. But these are problems which can, with imagination and motivation, at least in part be solved.

The New Leisure Class

Historically, the leisure class has consisted of the few who, because of inherited or acquired position, were spared the drudgery of work, or who, if they worked, did so at their own desire and in self-selected ways. The fact of exemption from drudgery in itself gave people a valued role, and playing the role in a way which demonstrated one's leisured status was for many a satisfactory way of achieving distinction. Leading a band of soldiers was partly occupation, partly avocation; hunting foxes, stags, and boars was purely avocation (there are better ways of ridding farms of pests than riding pell-mell across cultivated fields); gambling, dancing, and flirting were courtly activities; and those with more intellectual inclinations could, like Montesquieu, find outlets for them in philosophy and in politics, or like Lavoisier, in chemistry and in politics.

But we are experiencing, in the second half of the twentieth century, a social revolution in which only a minority of the able and educated seem likely to have the privilege of working. Only the highest level work will need to be done by humans - all production and distribution,

and many services, will be performed by automated equipment. The affluent and automated society will support the ex-workers in a life of leisure which will be acceptable because general and unavoidable. But what roles will be open to the new leisure class? What will replace the work role which still plays so important a part in organizing and in giving meaning to the lives of most men and many women? How will men achieve the status, the sense of purpose, the feeling of competence and mastery, the satisfaction of being needed, which occupations now provide them? Not, surely, but having more time for bowling or for golf, for television or for comics, superior though these may be in social desirability to fox hunting à l'Anglaise or gambling Monégasque.

Avocational Education. In due course, therefore, vocational education may phase into avocational education. Even if work is shared or made, even if everyone works a fifteen or twenty hour week, education for leisure will have to go hand-in-hand with education for work, and it seems likely even to replace it. But social inventiveness will be called for, to develop new roles in which men and women may achieve mastery and distinction, people will need to be educated to appreciate these roles, and education will need to equip people to play them with skill and satisfaction.

We cannot, and fortunately we need not, determine here and now what the content and methods of avocational education must be. We may have some good ideas, and they should work their way into the curriculum as part of general education. But the point to be made here is that we must develop a philosophy of vocational education which is not inimical to avocational education, and we must educate leaders for vocational education who will have the social vision and understanding to respond to the need when it becomes clear and real. We need vocational educators who are truly educators.

Conclusion

I have, in this paper, discussed three challenges to vocational education, three problems which appear to me to be of major significance during the decade which lies ahead. Each of these problems has several important aspects, each confronts us with certain tasks with which we must deal.

Two of the challenges are immediate. The first of these is the need to develop a secondary educational curriculum which combines solid grounding in the basic skill and content subjects with, for the non-academic students, vocational content which makes these subjects real. This vocational content should be handled in such a way that it help them to explore the world of work, leading to decisions as to post-high vocational and technical education. This last must itself be made more widely available and kept in tune with a rapidly changing economy by being preparatory and by leaving finishing training to industry itself.

The second immediate challenge is the development of a secondary education which meets the needs of future semi-skilled workers, an education which also stresses basic knowledge and skills in ways appropriate to their ability level and interests, and which equips them for careers of change and ambiguity which are typical of the semi-skilled and which will be even more common in our rapidly evolving economy.

The third and last challenge is not, perhaps, immediate, but it arises from a problem which is immanent if not imminent. This is the declining importance of work which results from the semi-automatic and automatic nature of much industrial production and recording keeping, particularly, during the years ahead, the latter. For many underemployed and unemployed there is likely to be a future of enforced leisure, supported by an affluent but automated economy. The average worker of today may be the

leisure class of tomorrow. If so, vocational education will evolve into avocational education. We need to find out what this is, and how to provide it, for people whose ability levels do not permit absorption in the ranks of the highly skilled or professional workers.

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