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ABSTRACT

Vocational educators must look critically at the innovations and changing technology contributing to reindustrialization and must determine their role in training workers with skills necessary to obtain jobs in changing occupations. Included among the areas in which vocational educators must develop new programs are business and industry, energy production, agriculture, construction, industrial maintenance, electronic communications, and health care and support services. As the federal role in vocational education diminishes, vocational education must seek new national leadership. While it is clear that changes will be seen in vocational leadership, it is difficult to predict the source or direction of the change. One thing that can be predicted, however, is the fact that in the future vocational students will be older and will have greater aptitudes and abilities. In addition, increasing numbers of women and handicapped people will enter the ranks of vocational students. Increased demands for more highly skilled workers will increase the need for relevant competency-based vocational instruction. Consequently, vocational administrators must do more to relate their programs to the training needs of business and industry. Furthermore, vocational educators must turn to research to find more efficient delivery systems and must give more consideration to long-range implications in their planning efforts. (MN)

Occasional Paper No. 85

A NATIONAL PROSPECTUS ON VOCATIONAL EDUCATION: ITS IMPACT ON RESEARCH AND LEADERSHIP DEVELOPMENT

By

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PREFACE

Vocational education is facing new and challenging issues surrounding the reauthorization of the "Vocational Education Act of 1963." Reauthorization will shape the nature of vocational education for the remainder of this century and beyond. Dr. Charles O. Hopkins, President of the American Vocational Association, gave a presentation about the critical events that make up part of the context of the reauthorization. This Occasional Paper contains his presentation as well as his responses to questions asked following the presentation.

Dr. Hopkins earned a B.S. in agricultural education, an M.S. in agricultural economics, and an Ed.D. in higher education and agricultural education from Oklahoma State University. He was a high school vocational agriculture teacher for six years. He then was a research assistant at the Department of Agricultural Economics and the Oklahoma Research Coordinating Unit at Oklahoma State University. In 1969, he moved to the Oklahoma State Department of Vocational and Technical Education as Coordinator of Planning. Currently, he serves as the Assistant State Director of Vocational and Technical Education, Supportive Services. He was elected President of the American Vocational Association in 1981.

It is with a great deal of pleasure that the National Center for Research in Vocational Education, The Ohio State University, presents this paper entitled "A National Prospectus on Vocational Education: Its Impact on Research and Leadership Development."

Robert E. Taylor
Executive Director
National Center for Research
in Vocational Education

A NATIONAL PROSPECTUS ON VOCATIONAL EDUCATION: ITS IMPACT ON RESEARCH AND LEADERSHIP DEVELOPMENT

Introduction

I would like to begin this presentation by setting the stage for the challenge that we in vocational education, or for that matter, we as a nation, are facing. The scenario for our economy is not very bright. Currently, we have a national unemployment rate of about 9 percent, and in many sectors it is considerably higher. Interest rates remain high, the balance of trade is at a deficit, and productivity is down. Projected budget deficits for 1983 range from $100 billion to $150 billion. Major industrial sectors, such as the automotive and housing industries, are in dangerous straits. Not to be overlooked is the declining federal role in elementary and secondary education,as well as in other social programs.

We must also consider the economic situation at the state level. The energy-resource states appear to have a very good economic base. This tends to obscure the national picture, however, as these states are in the minority. Most states are facing very high unemployment rates and very poor economic conditions.

Another especially important consideration in the challenge to vocational education is what is happening in the industrial sector. We observe that many industries are reindustrializing by adopting high technology to increase productivity and to regain a competitive edge in international markets. Even as these technological advances are being made, however, this nation is already critically short of skilled workers for the high-technology industries.

Business and Industry

What are we likely to see as we look more closely at the business and industrial world? We know that electronic and computer technology is affecting almost everything with which we come into contact. The automobile and aircraft industries are already incorporating much more electronic and computer equipment. The business world will probably become dominated by electronic and computer gadgetry. It may not be unrealistic to say that money, as we now know it, is on the way out. In the near future, purchases may be selected, a computer card then inserted into a machine, and our account verified anyplace in the world and charged with the purchases. Disturbing as such a revolution may seem, it is a very real possibility. The metal trade exemplifies this advanced technology with its use of computer-controlled lathes, welders, presses, milling machines—all a part of the microelectronics revolution. Wherever we look in the employment field, we will find that field affected by electronic and computer technology.

Energy Sources

Energy sources are another factor that will have a major impact on our nation's future. We will enjoy the advantages of the fossil fuel era for a few more years, but what will we do when it is over and these sources are no longer available? When we convert to energy sources such as solar, water, wind, hydrogen, synthetic fuels, or nuclear energy, all our transporation and power-generating systems will have to change too. Limited energy resources will also require the

production of lighter, more efficient, cars and aircraft and, for that matter, improvement in all modes of transportation. We will need different metals, alloys, or synthetics to manufacture these products. We may see mass transportation systems restored in this country as the energy crunch renews itself.

Agriculture

Technology and energy sources will definitely affect agriculture in terms of both input and output. Alcohol production for use as fuel will become economically feasible. The costs of agricultural products will inevitably rise.

We know that there are fewer farmers each year and that they must produce more food for a greater number of persons. Computer technology will have a daily impact on farm productivity as farmers check genetic and production records, costs, and markets.

Agriculture has become highly mechanized, and requires a high capital investment. It is not uncommon to find a fifty thousand dollar tractor with a computer-operated combine. Can we expect our farmers to rely on unskilled drivers or mechanics to operate or repair this equipment?

Without being critical of the vocational agriculture programs being taught currently in schools, we should ask if the curricula are meeting the training needs of production agriculture. With today's technology, we should observe a greater number of specialized training programs, and these will definitely have to be developed or expanded to meet the changing needs of agriculture.

Construction

The heavy construction industry shold enjoy real growth in the future. Business and industry are reindustrializing, and this should result in plant modifications or entire new buildings. Also, power-generating plants are on the drawing boards or are being constructed in the fossil fuel resource areas of this country. Those areas tend to be sparsely populated states where there will be a shortage of appropriately skilled workers. Where the construction workers will come from and who is going to train them are questions yet to be answered.

Industrial Maintenance

Perhaps one of the most rapidly expanding and crucial needs for workers exists in the industrial maintenance area. A companion to new technology and reindustrialization, this employment need is difficult to meet. The total field of industrial maintenance embraces skill areas such as (1) electrical, (2) electronics, (3) mechanical, (4) pneumatics, (5) hydraulics, and (6) instrumentation skills—or a combination of these such as electro-mechanical skills. Almost every industry today utilizes some type of very sophisticated control center requiring continual maintenance.

Electronic Communications

Electronic data processing is advancing so rapidly that we fear purchasing a machine today because tomorrow it will be obsolete. What is happening in this field is fascinating. It is now conceivable to have a paperless office, with audio and visual communications transmitted instantaneously to or from anyplace in the world. Electronic communication's potential for information handling, particularly if coupled with laser technology, tests the imagination. The technologies may be expected to have similar effects on the media and printing industries.

Health Care and Support Services

The health care industry has also benefited from technological advancement. We often forget that our space programs have been major contributors to medical innovation, and that much of the technology developed through the space programs is yet to be implemented. We are acutely aware, however, that the good health of employees is an economic asset to businesses and industries. Efforts to increase productivity have already proven that a healthy employee is a more productive employee, and that replacing a trained individual because of failing health is costly to the company.

As more and more women work, we are likely to see greater emphasis placed on providing support services, particularly child-care facilities and services.

Vocational Education's National Leadership Dilemma

A diminishing federal role in vocational education will mean that we are likely to see a new governance structure develop in states as the federal government turns the programs back to the states to implement and administer. Either this new governance structure or vocational and technical education will drop by the wayside, if states do not have the commitment or the resources to administer these programs. This is a serious problem, because we do not know from where the leadership will come to ensure that the training this nation needs for economic survival will be provided. Will this leadership come from our professional associations, such as the American Vocational Association, the American Association of Junior and Community Colleges, or the National Governor's Association? In the short run, it is doubtful that any of these would be effective in developing state delivery systems without a federal presence in vocational and technical education.

It is possible that we will see national leadership for vocational and technical education emerge from higher education. There will still be a federal role in higher education if the new federalism goes into effect. Financially, too, higher education will be in a better position to fund programs because of its tuition, grants, loans foundations, and other income-generating sources. The demand for higher-level skills will be the greatest our country has known. However, higher-education institutions have historically been less flexible in their program offerings than vocational and technical schools. Their mission has been different and will most likely remain essentially different.

We will see change in vocational education leadership, but to predict the source of its emergence or the direction it will take is a difficult task.

People To Be Served

We can predict some things about the students that we are to serve in the future. Changing technology will require vocational educators to change their curricula and to reach a student population that will have greater aptitudes and abilities than the population vocational educators have previously trained. The communication and mathematical skills needed by tomorrow's work force will cause vocational and technical education to recruit and train more students from the upper academic ranks, instead of the lower or middle ranks. There will of course be a need to train persons for all levels of the employment ladder, but vocational and technical education will not meet the technological requirements in the employment sector if they fail to attract and train those with high aptitudes and abilities.

We know that we have more women entering the work force. If this were not true, some states would already face a shortage of workers. Our economy increasingly requires that both the husband and wife work for economic survival. Displaced homemakers compose one of the prime training groups that has entered the work force.

It would be a mistake to think that we can forget the handicapped. This nation's educators are learning more about this population each year. Industry is finding that handicapped persons are productive workers. With this knowledge, vocational and technical educators will have a greater demand placed on them to train the handicapped to enter the work force. With all the knowledge we have gained about the handicapped, there is still much to be done to provide the support necessary to train and employ that population.

We will also be training an older population. Their demands and needs will be new to many vocational educators. Additionally, vocational education institutions may be training and retraining the same population two to four times as job requirements change with technology.

Instructional Delivery

Business and industry are already insisting on the need for vocational education to become more job relevant and competency based. We as vocational educators cannot afford to ignore these requests. We must provide our students with the competencies required to do jobs—jobs at all levels of career ladders.

Greater articulation must occur between levels of training. Utilizing the competency approach will allow this to happen. Now not only must we have competency-based instruction, but we must also implement performance testing. We also must develop an evaluation system for instructional programs, using the competency-based approach. Subjective evaluation founded on professional judgment will no longer suffice if we are to keep abreast of the innovative concepts available to us today and in the future.

Licensing will be required for many occupations in such areas as generation of energy or power, health care, child care, and transportation, as well as in other occupational areas.

Instruction in noninstitutional settings will increasingly be needed. Cable television and other electronic media advancements are making this a practical approach. Are we, as educators, prepared for these challenges?

Economic and Industrial Development

Vocational and technical education are two of the greatest tools available for economic and industrial development. Our training system in place today may have its faults, but it is the only organized, in-place system of training available to this nation. To waste this vital resource would be a mistake this country cannot afford. Vocational and technical education must establish working relationships with business and industry to assist with economic recovery. We must be able to develop and deliver training programs unique to individual business or industry needs. This means developing the capability to assess the training needs of a company and to design customized curricula and methods of delivery within very short time frames.

One notion that should be dismissed is that training provided through the Comprehensive Employment and Training Act (CETA) is the way to meet the future training needs of this country. We must do a better job of obviating this general attitude so that the investment in the employment and training programs that are targeted to the "at-risk population" will meet

business and industry needs for employees. All the criticism for inadequately serving the "at-risk population," however, should not be directed at the federal government. We as educators, in my opinion, have often been guilty of not wanting to serve these populations, and this is especially true of those involved in the conduct of secondary public schools.

Another problem is that administrators of public secondary schools have not related their school programs to the training needs of business and industry. This is not to say that secondary school vocational and technical training programs do not provide relevant training to the secondary population. Rather, it is indicative that they do not address the role or responsibility, in most instances, for training the noncompulsory population. Area vocational and technical schools and technical institutes have been established, however, and many of them do serve a diverse population, as well as provide training for business and industry. It may nevertheless become necessary to redefine the roles of both secondary and postsecondary institutions in order to meet the future training needs of our nation.

Apprenticeship programs with industry should be strengthened. Apprenticeship or cooperative, on-the-job training programs are feasible approaches to meeting many training needs. Cooperative arrangements with business and industry for the use of equipment may be the most practical strategy for training in high-technology areas, the cost to education for capital outlay is often prohibitive.

The economy can be stimulated by vocational and technical education in another way. Displaced workers are a population that needs our attention during the reindustrialization process. Not only are we observing more workers being displaced, but we can also predict that there will be more career changes due to changes in technology. To increase employment is to increase the productivity of the nation and also to lower the national budget deficit. It is projected that a 1 percent increase or decrease in the unemployment rate affects the budget deficit by $25 billion. Therefore, we must keep our nation working. While governments of developing countries are realizing that investment in skill training is essential and are building vocational schools, our country is phasing out the federal role. We should ask why the World Bank thinks it important to lend money to some of these countries to develop their human resources, yet our own country places little value on this type of investment.

National Defense

At the 1981 American Vocational Association meeting in Atlanta, military representatives informed us that one out of three graduating seniors would be needed to meet the demand for military personnel by 1990. Our nation's defense capability requires individuals with the aptitudes and abilities to operate and repair advanced technological weaponry. Can we find persons and deliver the training for the technological levels required?

Facility and Equipment Utilization

Vocational and technical education may have to be more flexible in conducting training. Training on a shift basis may be one way to utilize facilities and equipment in institutional or industrial settings. Schools must make the most efficient use of their training facilities to reduce the cost of capital investment. A machine-tool laboratory capable of training to production standards may cost in excess of $3 million and cannot be left idle for two-thirds of every day.

Implications

The problem areas I have just reviewed are critical ones that I believe must be addressed in our delivery of human resource development in our nation. I realize that many of these problem

areas are not very new to you. I feel, however, that these issues are going to play very important roles in how vocational and technical education are to be delivered.

Research

What does all this mean for educational research? Education has often been as guilty as business and industry or government in hesitating to invest in research. We have witnessed a period in which all sectors have invested less and less in research and development activities. But the way this country established itself as a leader in agriculture, medicine, manufacturing, and other advanced technological spheres was through research and development.

I believe that new knowledge in education is essential—new knowledge about delivery systems and about how to involve business and industry to a greater degree in training. We need new and better assessment systems that can match students more accurately with the competencies that jobs require. Efficient and speedy mechanisms must be devised to develop and update instructional materials so they will be job relevant, competency based, and media supported. We must find ways to shorten the training time for both industry and individual training needs.

Business and industry must invest in vocational and technical training. They use high technology, but they generally do not know how to develop the required training. Both education and industry can benefit by a commingling of resources. Knowledge transfer systems must be devised that allow vocational educators to utilize research findings that, for various reasons, have not been implemented. The lack of an effective system for determining labor needs continues to be a thorn in the side of vocational planners. Methods that allow states to forecast training needs more accurately are going to be absolutely essential. With the computer technology available, we should be able to develop data profiles for every school's service area within a state. We could then instantly assess what training is needed and what is available to serve the service area, with aggregation to any level desired.

The impact of governance structures on vocational and technical education should be researched. Reliable program evaluation systems that measure curriculum content, acquired student competencies, and quality instructional support should be developed.

When resources get tight, we tend to withdraw support from those things that do not have immediate and visible results. When there are opportunities to develop pooled resources and consortiums, we as agencies drop out because we say that we no longer have the resources. What a mistake!

Leadership

Both education and the private sector are aware that new management concepts are an essential part of their operations. What should we be doing to develop the leadership to implement these new concepts?

We have gone through a period when managers were taught to think primarily in terms of short-run effects. This has hurt our ability to view the long-range implications that have resulted from the short-run decisions. Today, this way of thinking is reversing itself. Autocratic managers are no longer effective, nor will they survive in educational or private sector decision making. Today's managers should be open, people oriented, deeply involved in long-range planning activities, and concerned primarily with managing the performances of their staff. There are many tools available to managers or administrators to assist with these functions. A knowledge of the following should be within the range of their capabilities:

- Resource management
- Causal analysis
- Assessment utilization (personnel and industry)
- Performance appraisal systems
- Quality circles
- Management teams
- Incentive or bonus systems
- Goal and objective setting
- Cost-benefit analysis
- Communication systems
- Technology transfer systems

We as vocational leaders must change our laissez-faire attitudes about vocational education. We should be representing vocational education as more than just training for entry-level jobs. We should develop programs that prepare persons to enter the work force at whatever level at which they choose to drop out of formal training. This means we will need to design training programs from the most basic to the most highly skilled technical level, and we will have to accept that the institutional settings in which such programs are offered are not important.

We must develop a new mentality in which vocational education is more than just another education program. Vocational and technical education should be represented as those parts of the education system that prepare people to enter the labor market with employment skills. We need to show that vocational and technical education are tools to assist with technology transfer—the transfer of knowledge and skills for the job into the classroom and laboratory and then, enhanced by training, back to the job. Vocational and technical education are the best educational resources available for economic and industrial development. Instruction in the operation of and policy formation for business and/or industry should be a part of the formal training of our leaders of tomorrow.

Summary

In order to meet the future requirements of skilled workers, it is necessary for those of us involved in occupational education to look critically at the innovations and changing technologies contributing to reindustrialization, and to determine our role in training workers with skills necessary to obtain jobs in changing occupations. Such training requires the use of task analyses and of competency-based instruction. Occupational sequencing, articulation, skill sequencing, or whatever we choose to call it, is essential but cannot take place without accurate assessment of the skills acquired through the training process.

We can expect the need to continue for persons trained at all skill and career levels in vocational and technical education. Training programs should be established to meet the needs of each of the respective levels. The greatest need for training and the levels with the best potential for expansion will be for postsecondary and adult training. Secondary programs should also be implemented, however, with the first two years devoted to prevocational or exploratory training and the last two years to specific skills, so that graduates from secondary schools will be prepared to enter their chosen occupational or career field with appropriate skill competencies. Academic challenge should be as much a requirement for occupational education students as it is for traditional college-bound students.

Changes in technology will cause business and industry to upgrade or retool equipment and processes in shorter cycles than ever experienced in history. This movement will leave many workers with obsolete or deficient job skills, making it impossible for them to compete in the

rapidly changing, highly technological job market. The nation's economic and labor needs cannot be met unless an adequate number of skilled workers can be trained to the levels that new technologies require. Every major occupational training area will see major new technological change. Teacher recruitment and upgrading will become a necessary component of vocational and technical education delivery systems.

Will vocational and technical education survive if there is not a federal role to stimulate and fund training programs? I predict that they will not survive in many states. Vocational and technical education are vital to this nation for economic recovery and can play major roles in helping achieve full employment, but cannot do so as fifty fragmented parts. These are national concerns that can only be addressed as a joint endeavor of all states, with needed assistance from the federal government.

Both politics and economics affect vocational and technical education. How can we as a country fail to realize that during a whole new revolution in technology advancement, training is a key to success? How can we ignore the relationship between a high national budget deficit and tight money or high interest rates? Can we not see that the greater the interest, the greater the number of federal dollars needed to pay the interest accrued to the deficit—that if interest is high, economic development takes place at a slower rate—that inflation cannot be controlled through unemployment? Have we forgotten that if people are unemployed, they are unable to stimulate the economy and, thereby, the national budget deficit increases—that if most states have a declining state budget, they cannot absorb the cost of some of the essentials needed for economic recovery—that the major tax breaks are going to the mega-industries and not to the needy—that national defense superiority cannot be achieved without a skilled work force to manufacture the equipment, and that well-trained military personnel are needed to operate and repair the equipment?

All federal programs are not bad. It may be more important to reduce the federal budget than to be "right," because hungry, needy, and unemployed people are not always totally rational.

We in vocational education are spending great amounts of time promoting new federal vocational education legislation to increase our funding. Yet we cannot even head off current budget cuts that will reduce federal funding levels to a projected 50 percent of current appropriations in fiscal year 1984, nor can we keep vocational education from being turned back to the states for funding. I ask you—do we have our priorities in the right order?

QUESTIONS AND ANSWERS

Charles O. Hopkins

QUESTION With federal and state resources for education being reduced, how do you think vocational programs will compete with higher education?

Vocational education will compete well with four-year degree programs in higher education if we design training programs that will challenge individuals and lead to productive careers. Postsecondary vocational programs leading to good jobs that provide future career paths continue to compete with four-year higher education degree programs. These postsecondary vocational programs are the best choice for many people, because they require only two years to complete. People are realizing that these two-year programs are attractive alternatives that allow them to move into the labor force sooner, sometimes at higher pay. These two-year programs are also attractive to displaced workers and to people wishing to retrain for new careers. The demand for training from these groups will be a powerful argument for funds to support vocational programs.

QUESTION The new federalism outlined in President Reagan's 1982 State of the Union Address calls for states to take over many social problems. How are vocational educators coping with this proposed shift of programs?

Probably not as effectively as they should. I find that most people out in the field of vocational education really do not know much about the issues. The figures state that 8 to 10 percent of the investment in vocational education comes from the federal government. Many educators think that vocational education won't miss that small amount and that the individual states will be able to absorb it. So, when you ask them about federal funds, they say: "Let's get the federal government out. The small loss of funds will not hurt us."

We need to do a better job of communicating the negative impact that reducing the federal investment will have on vocational education. Federal dollars built the area school concept and bolstered efforts to deal with the disadvantaged, handicapped, and unemployed. Also, much of the creativity and innovation that have taken place in vocational education have been a result of federal funding.

We also need to do a better job of communicating the direct dollars-and-cents results of the federal cutback in funding. I have a feeling that most of the states do not realize what is going to happen to them. In 1984, it will become optional for a program to go back to full state control. The 1983 federal vocational education budget is projected to be reduced by $323 million, which is about 50 percent of what it is at the present time. If another $100 million is taken away in 1984, there will not be many federal dollars flowing back to the states because there will be no federal funding for the states to take over. What will happen to the states is that they will have lost two-thirds of the educational funds that are currently coming from the federal government. More importantly, states will have a hard time replacing that funding, so shifting the sources of funding for vocational education will definintely hurt the states.

QUESTION If you were able to collect the most appropriate data to direct a state program, what would that data be?

If I could wave a magic wand and call up the most appropriate data, the three things I would look for are data on (1) the training needs that exist within a geographic area, (2) where people are likely to be employed, and (3) the supply of people to be trained. However, the basic information required is about training needs that exist within a geographic area. An essential to determining training needs is to assess the technology of an area and how that technology may change, because changing technology determines the content for programs that vocational education should implement. Unfortunately, vocational education has often been guilty of implementing programs by name, rather than by content. It is critical that educators know the kinds of jobs for which they are training, so they can design the curriculum appropriately. I think we are going to see more custom-designed curricula in the future—curriculum based on job content. This will be necessary to meet the skilled labor needs in industry.

QUESTION You made a statement that vocational education needs to recruit high-ability students for sophisticated technological jobs. There are those who argue that vocational education has not met the needs of below-average or disadvantaged students because of past efforts to recruit high-ability students. And because of this, the CETA program was developed. Whose responsibility is it to meet the needs of disadvantaged students?

All training institutions, including vocational education, have the responsibility of meeting the training needs of disadvantaged students. Although recruitment of high-ability students capable of acquiring skills for industry's technologically advanced processes will continue, vocational education will in no way discontinue serving the needs of other students. As a matter of fact, average or below-average students can also be trained for high-technology jobs. These students may take longer to master the necessary skills, but vocational education should never say no to them; that would be foolish. As long as students can learn, they can achieve and perform.

The mistake vocational educators make is that they have always tied programs to time. They design two-year training programs, put students in them, and assume that when the students exit, they will have learned all the skills in that curriculum. And, educators are held accountable for those assumptions. But, often vocational education has been turning out people who are skilled in name only. For example, when a person is given a data processing certificate, it certifies that she or he was trained in data processing. Vocational education issues that certificate, and that person may truthfully tell an employer, "I was trained in data processing." But that certificate does not say that the person knows how to operate the keyboard at the speed and accuracy needed by the employer. Vocational education is then criticized by the employer, who says, "I employed those students and they cannot perform." So, students get an A, B, C, or D on their report cards, and they receive a certificate to say they are graduates of the program, but those certificates do not qualify their skills.

On a total career continuum, a program must be designed to train everyone—it must be designed to train people with the scholastic ability to rise to the higher end of the continuum, as well as train people to work anywhere from the bottom to the top of the continuum. Depending on aptitude and ability, people are going to exit from the educational system with varying degrees of skills. Vocational education has recruited high-ability students because it is accountable for training some people for the high end of the continuum. However, vocational education also needs to measure excellence based upon whatever competencies each student can aquire, and then should let that student exit whenever he or she chooses. In such a program, at least the student would exit with a marketable skill.

QUESTION Speaking on behalf of the American Vocational Association (AVA), do you have any ideas about how to get leaders in Washington, D.C. to listen to vocational education's story?

Any time that you are lobbying as a professional association, you are viewed as lobbying from a very vested point of view. We in the AVA understand that the key to getting Washington to listen to vocational education's story is to convince the White House administration, particularly Budget Director David Stockman and those affiliated with him, of our needs. We are trying to get a team of business and industry representatives to talk about their needs—to tell what they think will happen without sound vocational education programs. There is a danger in what we're doing, however. When I represent vocational and technical education, I want to represent it ideally. But I also realize that the commitment to deliver excellence is hard to attain. We must deliver, and that really worries me because many people are not commited to delivering an excellent program. Many do not see how vocational education fits into a comprehensive high school. Many superintendents do not believe that high schools ought to get business and industry involved in the vocational program—they don't see the need. As a result, we've got to make sure that we can deliver.

Unfortunately, a priority in Washington seems to be to cut everything from the federal budget affecting education. Another opinion of the current federal administration is that skilled worker shortages can be dealt with by CETA-type legislation. The AVA must overcome that perception, but it will be a difficult process, a very difficult process.

One mistake that the AVA makes is that it tends to work only with congressional leaders, like Congressman Perkins who is already our friend. They will continue to be our friends, but they are not the people we need to convince. The AVA needs to be communicating with people who are not supporting its program, and if it does not, it is wasting its resources.

QUESTION Some portions of business and industry do not support vocational education because they feel it does not meet their needs. What is AVA doing about this?

That is another major problem the AVA faces. Vocational education has not established credibility with industry, and now, all of a sudden, it is asking industry to speak on its behalf. This is almost the first time that vocational educators have tried to convince industry that we can meet their needs. Vocational education does not have a very good track record of working directly with business and industry. Gene Bottoms, Executive Director of AVA, is having a difficult time of trying to get support from business and industry. Industry is saying, "We don't know if vocational education can deliver. It has never been here before. Why should we help vocational education?" Primarily, AVA is trying to get vocational leaders in the field to contact business and industry and have them make a case for a continuing federal involvement in vocational education.

QUESTION What is the current status on the effort to disband the U.S. Department of Education? Also, what do you think are the administration's perceptions of supporting research and development institutions?

The answer to your first question is that—we are told—this year the administration will not push hard to do away with the Department of Education. The strategy of the administration has been to zero in on one thing at a time and really work on that. This year, the administration is working on the "new federalism." With the new federalism, the administration thinks that the Department of Education will die a natural death, because if funding is reduced and all programs are transferred to the states, there would no longer be a need for a cabinet-level department. The Department of Education will then be a lot easier to eliminate.

I have not heard much about how the federal government perceives institutions of research and development (R&D). If the function of research and development is given to universities, then the positive thing I could say is that the National Center is part of higher education, which is an advantage for us in vocational education. Higher education is not being transferred back to the states, so I would gather that higher education is one of the functions that the administration will support.

There is very little being said about the capabilities of R&D activities. One of my fears is that R&D may be victim of the "cut everything out" mentality I mentioned earlier, even though a country that does not invest money in research and development is a country that is going to fall behind. As a measure of the significance of R&D investment, we should observe the emphasis placed on the agricultural programs early in our history. History shows that research and development activities are a good investment, but today even proven programs are not getting money to move forward. Consequently, we do not see much addition to the knowledge base through R&D.

In my opinion, the administration has focused on global matters rather than on specific matters of domestic importance. It would appear that the administration's major domestic concern is excessive federal spending and how to cut it—this is what I hear every place I go, and from everyone with whom I talk. I would suggest that less indiscriminate budget slashing and more evaluation of what is good and what is not good is in order.

QUESTION We have learned that legislation is being made by reconciliation. Will the new federalism work this way? Will the opportunities to influence legislation through expert testimony and hearings be limited?

Yes. From all that I hear, there is a new rule, and the reconciliation process is going to be and has been used. I guess that will continue as long as representatives and senators allow it to take place.

Vocational educators will have an opportunity to give testimony for new legislation and should be able to influence its content. However, they do not have the opportunity to influence the appropriations through the reconciliation process with expert testimony.

QUESTION If we, as a nation, are going to do an adequate job of training a skilled work force, who will pay for it? Will it be paid for by taxes if the government supports it, or by higher prices if business and industry support it?

Most businesses and industries have a social conscience—if there is profit in it. Money to fund training will have to be found if America is to compete in today's marketplace. The result will be that both taxpayers and consumers will pay for training. If business and industry from one state support training, such training will most likely be for a narrow set of interests that will not meet the needs of the nation at large. Also, one state may provide good training through state taxes, and a neighboring state may not. The neighboring state may develop economically by attracting new business and industry with lower taxes—and may take advantage of the fact that a pool of skilled labor is being trained in the state next door.

Programs aimed at meeting the skilled labor needs of both the states and the nation as a whole should be a priority, or even greater shortages of skilled labor and related economic decline will prevail. A sharing of costs to meet the needs of both the states and the nation is essential to our future. The "new federalism" will dilute the ability of states to provide training programs that meet the increasing need for skilled workers. More collaboration among education, business, and industry will be to everyone's benefit.

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