Approved 3-14-90
Date

MINUTES OF THE Senate COMMITTEE ON Labor, Industry and Small Business.

The meeting was called to order by Senator Alicia Salisbury at
Chairperson

1:30 a.m./p.m. on February 27, 19 90 in room 527-S of the Capitol.

All members were present except:
Senators Feleciano, Sallee, Oleen, Strick and Martin

Committee staff present:
Jerry Ann Donaldson, Kansas Legislative Research Department
Gordon Self, Revisor of Statutes Office
Phil Lowe, Secretary to Committee

Conferees appearing before the committee:
Charles Warren, President of Kansas Inc.
Charles Krider, Kansas University, Associate Director IPPBR
Ferman Marsh, Assistant Commissioner of Education
Jim Edwards, Kansas Chamber of Commerce and Industry
David DePue, Executive Director Kansas Council Vocational Education
Kevin Robertson, Kansas Association of Vocational Technical Schools
Connie Hubbell, Chairman, State Board of Education
Chuck Carlsen, President, Johnson County Community College
Norman Wilks, Kansas Association School Board
Bill Berry, Manhattan ATVS

The meeting was called to order by the Chairman, Senator Salisbury, at 1:35 p.m.. She said the purpose of the meeting was to have hearings on SB 698 concerning the Kansas existing industry training act.

The first conferee, Charles Warren, President of Kansas Inc., said SB 698 was introduced at their request and creates the Kansas Existing Industry Training Program Act. The bill provides a vehicle to increase the availability of funding to provide training for existing industries. Mr. Warren distributed copies of his written testimony (Attachment I).

Charles Krider, Director of Business Research Institute for Public Policy and Business Research University of Kansas, presented the members of the committee with copies of his testimony (Attachment II), and also a copy of a recent study conducted at the Institute for Public Policy and Business Research entitled "Work Force Training: The Challenge for Kansas". (Attachment III). He stated that the proposed legislation addresses the needs of the current work force for retraining and does not compete with nor duplicate the efforts of KIT/KIR programs. The needs of many existing businesses are not being met as those firms do not qualify for KIT/KIR aid because they are not expanding at the specified rate.

The next conferee, Ferman Marsh, Assistant Commissioner of Education, explained some of the training programs as they exist. He stated the Department of Education works closely with KIT and KIR, and with the Department of Commerce and Department of Human Resources in their training programs. He noted that they are attempting to meet the needs of business and industry in Kansas through an economic development course approval process. SB 698 gives the Department the opportunity to expand the adult training to go into partnership with business and industries through their post secondary institutions and offer training tailored to meet the needs of requesting companies.

Jim Edwards, Kansas Chamber of Commerce and Industry, in his testimony said their organization endorses the concepts of SB 698. (Attachment IV).

David L. DePue, Executive Director, Kansas Council on Vocational Education, appeared in support of SB 698 and said this legislation is a very appropriate use of economic development funds. (Attachment V). He stated that SB 698 is important for three reasons: (1) Eighty percent of the jobs in Kansas are in existing businesses with fewer than 10 workers; (2) SB 698 would help many of the targeted populations, the single parent and the displaced homemaker, as well as, the limited English speaking and minority worker; (3) This legislation would provide an appropriate match for federal funds, therefore, doubling the impact on Kansans.

Kevin Robertson, Director of Governmental Affairs, Kansas Association of Area Vocational-Technical Schools, stated that SB 698 addresses the dilemna which currently exists for AVT school administrators - the more successful they are in promoting their schools to deliver customized training, the more money they will lose. Under the present system of reimbursement for AVT schools providing customized training to business and industry, the school does not receive funding confirmation until after the training has been provided - if at all. Since funding is not guaranteed, it makes customized training a risky business. If state aid is not approved, the AVT school is left with only the 15 percent tuition paid for by the student to defray the cost of the program. (Attachment VI).

Connie Hubbell, Chairman of the State Board of Education, stated that SB 698 provides an excellent opportunity for community colleges and area vocational schools/area vocational-technical schools to respond to the needs of business and industry. (Attachment VII).

Chuck Carlson expressed the support of the Kansas Association of Community Colleges for SB 698. (Attachment VIII).

Norman D. Wilks, Labor Relations Specialist, Kansas Association of School Boards, noted that their association expresses its support for SB 698 provided the funding continues to come from the Economic Development Initiatives Fund and not from the State General Fund. (Attachment IX).

Bill Berry, Director of the Manhattan Area Vocational-Technical School, apeared before the committee and listed several reasons why they support SB 698. His written testimony is (Attachment X).

Dr. Krider suggested an amendment on page 3, line 2, by deleting the words "and expanding". He stated the intent of the bill was "existing Kansas business" without the requirements of the expansion.

Staff briefed committee on SB 699 which would amend the Administrative Procedures Act concerning the Public Employees Relations Board. The bill was requested by Merrill Werts, a member of the Public Employees Relations Board.

The meeting was adjourned at 2:30 p.m.

The committee will meet again Wednesday, February 28, 1990.

GUEST LIST

COMMITTEE: Labor, Industry and Small Business DATE: 2-27-90

NAME	ADDRESS	ORGANIZATION
Scott Hesselt	Topeka	Kansas Inc.
Nora Wilks	Topeka	KASB
Charles Warren	Topeka	Kansas Inc.
Chanel Iciaan	~~Ke~~ Lawrence	KU
Stacie Cooper	Lawrence	IPPBR - KU
Don Doesken	Topeka	staff Atty KOHR
Terman Marsh	Topeka	St. Dept. Ed.
Connie Hancock	Topeka	St. Board of Ed
Kay Gilley	Topeka	K-NEA
Ken Baker	Topeka	Ks. Assn of Private Career Schools
Bernie Koch	Wichita	Wichita Chamber
D. WAYNE ZIMMERMAN	TOPEKA	KDOC
David A. Hawley	Wichita	Ks. Ass. for Small Business
Kevin Robertson	Topeka	Ks. Assn of AVI Schools
Bill Berry	Manhattan	Manhattan Vo-Tech
Bill Thompson	Topeka	KDOC
Jim Edwards	Topeka	KCCI

TESTIMONY ON S.B. 698

by

Charles R. Warren
President
Kansas Inc.

Senate Committee on Labor, Industry & Small Business

February 27, 1990

Madame Chairperson, members of the committee, my name is Charles Warren and I am President of Kansas Inc. I am here in support of S.B. 698 which would create the Kansas Existing Industry Training Program Act.

S.B. 698 addresses a significant unmet need identified in our report on Workforce Training authored by Charles Krider of the University of Kansas: training of existing workers, particularly those in smaller companies.

The Kansas Inc. report was presented to our Board of Directors. At the January 1990 meeting, the Board adopted the following policy position: "recommends that the appropriate legislative committees consider the policy options on workforce training . . . to develop and implement a more responsive training and retraining system." The Board of Directors has not had the opportunity to review S.B. 698. It has not taken a position on this specific bill. I should also point out that the funding stipulated in the Bill is not included in the Governor's Budget. In fact, this bill was prepared only a few weeks ago. This bill provides a vehicle for the Committee to discuss the options presented in our report to increase the availability of training for existing industries.

One of the most important factors in the growth of business and industry throughout the country is the availability of skilled employees. This is particularly important for Kansas as it faces greater and greater challenges from other states and other countries. Jim Schwarzenberger, vice-president of WI/SE Partnership for Growth stated in the Wichita Eagle on February 25, that, "'This is the issue of the 90's.'" This program is designed to address these challenges and to provide an opportunity for our community colleges and vocational technical schools to develop and market a training program which can help insure a strong workforce.

Approximately seventy-five percent of Kansas businesses employ less then 10 individuals. This percentage is even nearer 90% in the rural areas of the state. It is this significant category of businesses whose employees are not receiving the type of training which they need to successfully compete. Most small companies do not have formal in-house training which is typically available in

Attachment I
2-27-90

larger businesses. As well, they do not have the capital resources to purchase training services from private vocational institutions or equipment manufacturers.

This program does not duplicate existing state training activities. The Kansas Industrial Training (KIT) and Retraining programs (KIR) are designed to help attract new industry to the State and to assist larger companies which are expanding, introducing new or existing technologies, or restructuring. Both are designed to help a very specific group of businesses and are, therefore, unable to address the concerns of these smaller, typically rural businesses.

The training needs of these businesses are, quite often, different then those of a larger business which may be introducing sophisticated technologies. They, on occasion, may require advanced technical training but most often they need upgrades in basic technical and academic skills. These requirements, nevertheless, are essential to the continued viability of the small business community. This training also provides a strong foundation from which a small company may grow and increase its contribution to the community's long term prosperity. As Ron Fundis, professor at Fort Hays State University, stated in this Sunday's edition of the Wichita Eagle: "... small industries [employing less then 10 persons] are where a rural region's job hopes lie..." (See attached article)

Community colleges and vocational technical schools have been attempting to address these needs and concerns but are hampered by a lack of funding. This program would further the mission of these institutions by allowing them to effectively reach out to their local businesses and offer assistance. The local involvement by the community, college and vocational institution will help ensure the successful implementation of this program because it is these institutions which are most aware of their communities' needs.

Senate Bill 698 suggests a new focus to existing state training programs. I hope the committee will consider this and other options presented in our report as it continues its efforts to ensure that the Kansas workforce maintains the standard of excellence for which we are justifiably proud.

Rural leaders devise strategy to help workers resist city's lure

By Mike Berry
Eagle Western Kansas bureau

HAYS — Kansas job experts don't expect the flow of young workers from the country to the cities to abate during the '90s. But rural leaders hope strategies such as custom job training will minimize migration and capitalize on older, more established workers being left behind.

"The work force, like capital, will flow to the point of greatest return," said Glenn Fondoble. Well-trained people go where the better paying jobs are. And most of those jobs are in Kansas' urban areas.

In the past five years, Fondoble has watched 11,684 workers, or nearly 3.9 percent of the work force, leave the 62 western Kansas counties he supervises for the state's Division of Employment. That was accompanied by the loss of 8,030 jobs, or 2.8 percent of available jobs, many in the oil field and construction industries.

In the same time, the state's work force grew by 6 percent and jobs increased by 7.5 percent.

"How are you going to keep them down on the farm?" mused Ron Fundis, a sociology professor at Fort Hays State University. "You're not ... if the jobs are not here."

Fundis

But even when a supply of jobs is available, there can be problems.

For example, Fondoble said the problem isn't finding well-educated job applicants in rural areas: 95 percent of applicants at a new plant to manufacture auto radio antennas in Hays had high school diplomas, and more than 40 percent had some kind of post-secondary schooling.

"The problems we have are with lack of experience," Fondoble said. "There's not a whole lot of manufacturing" in rural areas.

But Eddie Estes, president of the Western Kansas Manufacturers Association, sees that changing. "I can see some needs down the road for more highly skilled workers, many in agricultural-related industry, in short-line manufacturing: machinists, lathe operators and so on," Estes said.

Such jobs are largely responsible for making southwest Kansas' labor numbers look so much better than those of northwest Kansas. From 1984 to 1987, southwest Kansas added 1,550 manufacturing jobs; northwest Kansas lost 1,100.

Jim DeMarco served 4½ years as Ellis County's director of economic development. Now he's looking for a job himself.

DeMarco said it's crucial that vocational-technical schools, community colleges and universities such as Fort Hays State University provide the kind of hands-on training needed to fill the experience gap of rural Kansans looking for work in the '90s.

"Some academics view a technology-oriented curriculum as demeaning," DeMarco said. "Today's employers want more meat and potatoes than gourmet sauces."

Pittsburg State University, with its technical-training programs, is not worried about being labeled "a super vo-tech school," he said.

After years of economic struggle in southeast Kansas, that approach has started paying off, said a cautiously optimistic Richard Hay, director of Pittsburg State's Institute for Economic Development. The focus now is on creating small manufacturing jobs to replace lost railroad and mining jobs, a task that Hay says will be helped by finally getting a modern state highway through the region. "At least by the second half of the '90s, we should start seeing some significant upturn in employment," he said.

He agreed with DeMarco that the emphasis should be on "technology transfer" — taking theoretical concepts and putting them to work improving productivity.

"Customized training is a vogue word right now," said Melvin Corn, director of the Liberal Vocational Technical School. "We're not getting a lot of requests from industry for specific courses ... but I see us doing more of that down the road."

Fondoble said Fort Hays State had added some custom courses, such as a lathe operator's program, that workers need for specific jobs. By not requiring a lot of prerequisites, the classroom is accessible.

Corn expects to be retraining a lot of older workers, since it is estimated that 80 percent of all people who will be working in Kansas in the year 2000 already are in the labor force. By then, only 15 percent of jobs will be unskilled labor, he said, pointing out that the knowledge pool required to keep up with technology is changing every 4½ years.

Fundis said the state Department of Commerce can get involved by allowing rural businesses with fewer than 10 employees to pool workers for training courses financed by state grants. Eighty-nine percent of western Kansas firms have fewer than 10 workers, and those small industries are where a rural region's job hopes lie, Fundis said.

Such state-aided grants for training and retraining can be crucial, Fundis said, noting, "You have to remember that half of the kids don't go to any kind of post-secondary school." Many of them quickly move away if they find themselves in a dead-end, minimum-wage jobs without a future, he said.

TESTIMONY ON SB 698

KANSAS EXISTING INDUSTRY TRAINING ACT

presented to

Committee on Labor, Industry and Small Business

February 27, 1990

presented by

Dr. Charles Krider

Professor, School of Business

and

Director of Business Research

Institute for Public Policy and Business Research

University of Kansas

Attachment II
2-27-90

INTRODUCTION

Kansas has recognized several strategic elements for economic development: human capital, infrastructure, capital markets, entrepreneurial environment, technology, quality of life and institutional responsiveness/capacity. Traditionally, Kansas has been strong in human capital and, consequently, this area has not received priority attention in the economic development initiatives passed by the legislature since 1986.

Training and retraining are vital parts of any effort to improve the state's human capital. A well trained work force makes the state more competitive by increasing productivity, allowing firms to lower costs of products, improve product quality , and increase sales.

PROBLEM

Our research at the Institute for Public Policy and Business Research indicates that Kansas firms perceive (and expect in the future) a moderate to severe gap between the skills of newly hired employees and the skill levels required by the firms. Skill requirements are rising and will continue to do so. Current employees will need retraining to cope with the rapid technological changes occurring in the work place.

A shortage of traditional new workers (white males) will also require Kansas to retrain existing workers, and to bring non-traditional workers such as women and minorities into the work force in occupations requiring technical skills.

Adult education will become a critical issue as 75% of the work force has already graduated from the secondary education

system. Those adults already in the work force and those seeking to enter will need to acquire or upgrade their academic and technical skills. The current education system faces serious challenges in meeting the training needs of adults who return in increasing numbers every year.

According to the recent study conducted at the Institute for Public Policy and Business Research entitled "Work Force Training: The Challenge for Kansas", less than half of the firms surveyed had used technical or vocational training within the last five years and reported that adequate training to meet their needs could not be found and that such training was too expensive. This suggests that customized training is needed.

Customized training is designed and tailored specifically to meet the needs of a particular client. Eighty-two percent of all the firms surveyed agreed that customized training is more cost effective than other forms of training. However, the overall level of promotion of such training by community colleges and area vocational technical schools is low. Sixty-five percent of community colleges and seventy percent of AVTS have never promoted customized training programs. These institutions, for the most part, do not have well organized mechanisms for marketing customized training and many actually choose not to aggressively market them due to a lack of funding. These same institutions are willing to provide such training programs if the support exists. Similarly, there is a willingness on the part of business to participate in the development and improvement of training programs. Mechanisms to encourage meaningful participation need to

be developed to facilitate business commitment and partnership in postsecondary technical education programs. State leadership and assistance are needed.

SUPPORT FOR SB 698

The proposed legislation addresses the needs of the current work force for retraining. As part of the state's cohesive economic development strategy, SB 698 targets existing industries and the retraining requirements of their workers. It neither competes with nor duplicates the efforts of KIT/KIR programs. The needs of many existing businesses are not being meet as those firms do not qualify for KIT/KIR aid because they are not expanding at the specified rate. This is especially true for small businesses located in rural counties. To promote human capital investment by small and medium-sized firms (the backbone of the Kansas economy), these firms need access to external funding sources to help support training costs. Without this support, small and medium sized firms will not remain competitive.

While SB 698 encompasses a broad definition of training programs and also includes expanding businesses, the emphasis should be on customized training and existing industries.

WORK FORCE TRAINING:
THE CHALLENGE FOR KANSAS

EXECUTIVE REPORT

by

INSTITUTE FOR PUBLIC POLICY AND BUSINESS RESEARCH
UNIVERSITY OF KANSAS

to

KANSAS INC.
Capitol Towers Building
400 S.W. 8th Street, Suite 113
Topeka, Kansas 66603
(913) 296-1460

December 1, 1989

Attachment III
2-27-90

Kansas Inc. is a public-private partnership created by the 1986 Kansas Legislature. The organization, through objective research and analysis, seeks to provide the Kansas leaders and decision-makers with policy direction that can improve the economic competitiveness of Kansas. Kansas Inc. serves as advisor to the Cabinet and Legislature, analyzing the State's tax, regulatory, and economic development policies. It conducts research and recommends actions to produce a growing Kansas.

A Board of Directors of 15 members directs the activity of Kansas Inc. The Board is Co-chaired by Governor Mike Hayden and Mr. Eric Jager of Kansas City. Board composition is defined by statute and contains a majority of private sector membership from the following industries: oil and gas, financial; aviation; agriculture; and, a value-added manufacturing firm. Additional membership comes from labor, the Board of Regents, the Commanding General of the Kansas Cavalry, the Secretary of the Department of Commerce, and holders of the four Legislative Leadership posts. Kansas Inc. is funded two/thirds by the State of Kansas and one/third through private sector investment.

This study was undertaken by Kansas Inc. in recognition of the importance of the Kansas workforce to the continued growth and vitality of the state. This importance will be even greater in the coming decade as we adjust to the new economic challenges. □

CONTENTS

ACKNOWLEDGEMENTS-

This research study was funded by Kansas Inc. and the Kansas State Department of Education. Dr. Charles Krider, Director of Business Research with the Institute for Public Policy and Business Research at the University of Kansas, was the project director.

We would also like to express appreciation to the survey respondents from the Kansas business community, the advisory committee members for vocational programs, the community colleges, areas vocational technical schools and other vocational institutions, and the Kansas State Department of Education. We appreciate the willingness of over 600 businesses in Kansas to be interviewed. We would also like to recognize that the nineteen community colleges and sixteen AVTS', Washburn University, Pittsburg State University and the Kansas College of Technology gave generously of their time for interviews. Special thanks to the Kansas Department of Human Resources for their assistance with the Business Survey.

We would like to recognize the members of the advisory committee for this study, who provided valuable suggestions and insights for the study. They are:

Bud Anderson, Personnel Manager, Hallmark Cards, Inc.;
Denise Apt, Education Aide, Office of the Governor;
Bill Barry, Director, Manhattan Area Vocational Technical School;
Fred Braun, President, Zephyr Products;
David DePue, Executive Director, Kansas Council of Vocational Education;
Representative Diane Gjerstad, Wichita
Richard Hedges, President, Fort Scott Community College;
Steve Jack, Job Training Coordinator, Kansas Department of Commerce;
Ferman Marsh, Assistant Commissioner, Vocational Education, Kansas State Department of Education;
Senator Alicia Salisbury, Topeka;
Charles Warren, President, Kansas, Inc.; and
Rita Wolf, Director, Research and Analysis, Kansas Department of Human Resources.

We would like to thank the members of the research team: Ron Ash, Associate professor of Business; M. Elizabeth Stella, Research Associate; Genna M. Ott, Research Associate; and, Stuart Michelson, Jim Smith, Jordan Yochim and Anne Foley, all research assistants.

Special thanks to Linda Bennett whose compilation of this report contributed greatly to its quality. We also wish to thank Steven Maynard-Moody, Larry Hoyle, Arlene Slocum, Karen Ye and John Luthold for their assistance with the conducting and processing of the Business Survey.

The findings and views presented in this report are those of the authors and do not necessarily reflect those of Kansas, Inc., the Kansas Department of Education, the Advisory Committee, or the University of Kansas. □

INTRODUCTION -

WORKFORCE TRAINING: THE CHALLENGE FOR KANSAS

The future of Kansas depends on an educated and skilled workforce

The availability of a well educated, skilled work force is crucial for Kansas' economic development in the 1990's. The most important incentive the state can offer companies to affect their location or expansion decisions is a trained work force to meet their current needs and a training system that is responsive to needs for work force training and retraining. Firms will be more likely to locate or expand in Kansas if a sufficient number of employees with the appropriate skills are available. Consequently, a major policy objective for Kansas should be to ensure that the technical training system remains a competitive advantage for economic development in the 1990's. The purpose of this report is to assess the strengths and weaknesses of that system and to identify policy options to ensure that the training and retraining needs of business will be met in the next decade.

The education challenge in Kansas, and in the United States, is substantial. Basic academic skill training must be emphasized at the primary and secondary education levels (K through 12) so new entrants to the labor force arrive with adequate reading, computation, communication, and problem solving skills. The education system has not given as much attention to secondary (high school) students who do not plan to pursue a four-year baccalaureate program. Not all jobs require a four-year university degree, but more jobs in the 1990's will require higher skill levels in reading, writing, computation, problem solving and other basic academic skills, as well as higher levels of technical skills. Thus, the state and its educational institutions that provide basic academic and technical training must focus on meeting the needs of this population if Kansas' work force is to meet the needs of business in the 1990's.

Because 75 percent of the work force has already graduated from the secondary education system, adult education has also become a critical issue. Those already in the work force or adults seeking to enter the work force need to acquire or upgrade academic and technical skills. The technical and vocational education system was designed to address the needs of secondary and postsecondary students (those seeking additional training immediately after high school graduation). It was not designed to meet the needs of large numbers of adult learners. Thus, the system faces serious challenges in meeting the training needs of adults who return in increasing numbers every year.

This report focuses on postsecondary technical education that is primarily offered through community colleges and area vocational technical schools. These are the public education institutions that are increasingly required to meet the needs of postsecondary and adult students who need training and retraining. Their training needs go beyond technical skill training. Increasing numbers of postsecondary students and adults also need training and retraining to improve reading, computation, communication, and other basic academic skills.

The demands on the technical education system will increase in the 1990's for several reasons: 1. Demographic changes indicate that the growth in the labor force will slow and labor shortages, not unemployment, will be the major concern. 2. The composition of the labor supply will change as most of the growth will come from minorities and women. 3. The skill requirements of business have been increasing because of technological advances. 4. Changes in management practices indicate that workers will have a greater responsibility for how their work is performed and for the quality of their work. 5. International competition, particularly from Japan and Europe, will continue, and this competition will increase the importance of technical education in the state's economic development efforts.

One of Kansas' major strengths is its work force. Kansas ranks higher than the national average in work force quality. The quality of the work force is due in part to the quality of educational institutions and the use of technical training institutions to maintain a competitive work force. A strong educational system that is responsive to business' needs is critical in maintaining the state's ability to offer industry a well trained work force. Thus, the key question is what should the state do over the next few years to position the training system for the 1990's? The major

goals of this study were to:

1. Develop a database describing the current training system that could underpin policy development;

2. Propose policy options.

To achieve these goals, six broad areas of research were undertaken:

1. An analysis of the changes in the world, U.S., and Kansas economic environment and labor supply and the implications for technical training (Chapter 2).

2. A survey of Kansas businesses assessed training-retraining needs and determined how those needs were being met by institutional training-retraining providers (Chapter 3).

3. A survey of institutional training-retraining providers assessed how effectively the state's human capital needs are met. This included on-site visits, surveys, and examination of statistics collected for all state supported educational institutions that provide vocational and technical training (Chapter 4).

4. A survey of vocational-technical institutions' advisory committees assessed how business advisors impact the system (Chapter 5).

5. The Job Training Partnership Act (JTPA) and Carl Perkins Act in Kansas were examined to determine ways that federal funding could be utilized to enhance existing state training programs and benefit state economic development plans. Literature reviews and interviews provided information for this analysis (Chapter 6).

6. An assessment of other states' training-retraining programs examined strategies used to strengthen the impact training has upon state economic development. Information was collected through on-site visits to key states and review of literature describing state programs (Chapter 7).

Based upon the results of the research, policy options (Chapter 8) are proposed. These policy options do not attempt to identify specific areas of skill shortages or to identify what particular training programs should be expanded. Rather, the policy options focus upon improvements in the system that, if implemented, would enable the state to address skill shortages on a continuing basis throughout the 1990's. The policy options address the following major areas:

1. Training Programs - integration of basic academic skill training with technical skill training, competency based training;

2. Funding - modernize funding systems to provide incentives for competency based training and encourages program development and expansion in areas having greatest economic development impact;

3. Customized Training - encourage mechanisms that enable community colleges and AVTS' to respond more effectively to the growing need for customized training;

4. System Coordination - encourage program coordination between secondary and postsecondary institutions in the form of credit transfer and program planning, and encourage program coordination between different types of postsecondary institutions so a well-coordinated system develops;

5. Business Role - encourage business-technical education partnerships to ensure meaningful business input in such important areas as defining competency levels for training, faculty development, equipment decisions, training program focus and content. □

BACKGROUND:

THE VOCATIONAL-TECHNICAL TRAINING CHALLENGE

The vo-tech training system in Kansas must adjust to changes in the economy

Human capital is a key element of Kansas' economic strategy. Kansas has recognized several strategic elements for economic development: human capital, infrastructure, capital markets, entrepreneurial enviornment, technology, quality of life and institutional responsiveness/capacity. Traditionally, Kansas has been strong in human capital and, consequently, this area has not received priority attention in the economic development initiatives passed by the legislature since 1986. There were more serious deficiencies in the other economic development elements that required immediate attention. The opportunity now exists to address the human capital component of the state's economic development strategy so that this current strength will not erode in the 1990's.

Training and retraining is a vital part of any effort to improve the state's human capital. A well trained work force makes the state more competitive by increasing productivity, allowing firms to lower costs of products, improve product quality, and increase sales. Training and retraining increases the basic academic and technical skills of workers, and provides a flexible work force that is more adaptable to changes occurring in the work place.

The vocational-technical training system in Kansas, and other states, must adjust to changes that are occurring in the U.S. economy, particularly in manufacturing and services. First, products and processes are changing rapidly in an era of innovation based on science and technology.[1] Experts predict a shift from homogeneous product, assembly-line mass production to customized, job batch, human-capital-intensive processes.[2] Second, increasing internationalization of the U.S. economy and intense global competition places a high premium on productivity growth.[3] Third, in the context of a relative, though not absolute, decline in manufacturing employment, remaining manufacturing jobs require greater skills and higher levels of basic education and training.

This chapter will identify and explore the following changes in the economic environment and their implications for technical training: 1) the emergence of a world economy; 2) the impact of rapid changes in technology; 3) changes in management style and management expectation of employees; 4) the shift from goods to services; and 5) changes in labor supply. The basic conclusion is that the skill requirements of business are increasing at a time when demographic changes insure increasing shortages of labor.

Emergence of a World Economy

While there still may be local markets for some goods and services, there is only one economy: the global economy. Kansas' firms must compete on cost and quality both nationally and internationally. Internationalization is changing the very nature of political and business institutions, economic policy making, and even how day-to-day business is conducted. The United States, like other high-wage nations, will be forced to concentrate on management systems, technology, human resources development, and an alignment of regulatory pressures with businesses' ability to operate efficiently.

Impact of Technology

Developments in science, technology, and industrial organization are rapidly changing the structure of the international economy. Developments include:

1. the introduction of new products and process in the microelectronics industry which are changing methods of industrial production. An important example of this is information storage and processing;

2. the establishment of high-speed global communications network enabling instantaneous worldwide communication, thereby integrating markets and enabling centralized management of globally dispersed industries;

3. the establishment of new patterns of industrial organization allowing new producer/supplier relationships such as just-in- time inventory systems;

4. the development of new advanced materials replacing traditional raw materials, due to the materials' hardness, resilience, and durability;

5. bioengineering advances promising better health and freedom from disease and birth defects, and the potential for an oversupply of agricultural commodities.

Kansas' firms must rapidly update processes and products. Internationalization and technological change enables Japanese manufacturers to bring new products to market more quickly than Kansas' manufacturers (and in many cases with higher quality and lower costs) thereby gaining market share. The state has already taken steps to assist Kansas manufacturers to become more competitive by establishing the Kansas Technology Enterprise Corporation (KTEC) to foster innovation in existing and developing businesses.

Change in Management Style and Expectations

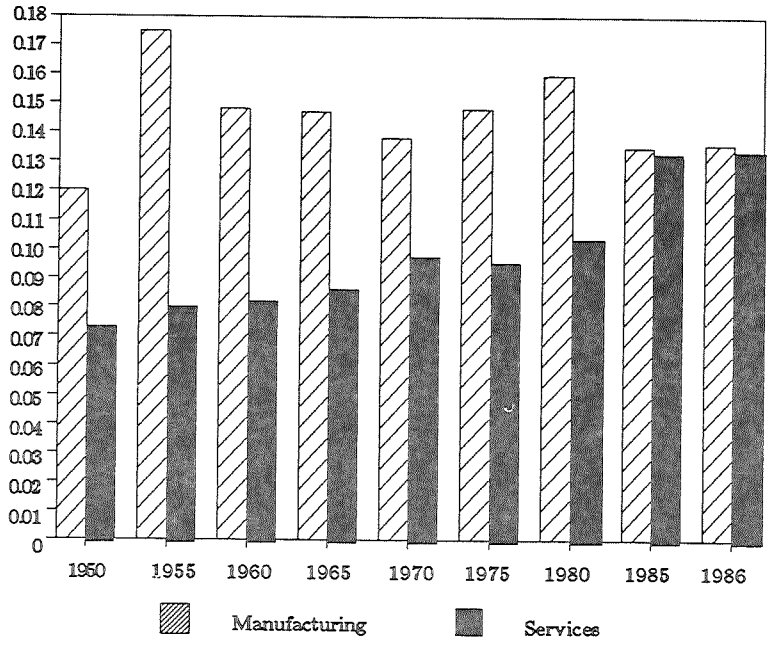
Skilled employees, skillful management, and innovation must be combined to improve productivity and quality in the work place. The United States has had a management system that emphasized two parts - sophisticated equipment and processes - and neglected the third - workers. In the traditional mass production system, technology was stable and allowed long production runs. Workers needed few skills since their tasks were so narrow, often broken down into the smallest possible activity. Management assumed that workers needed to be forced to work and closely supervised.

The traditional mass production system has given way to a more flexible production system. Rapid technological changes have created a new production system that is characterized by short runs of relatively few products. This system requires workers to take initiative and solve problems. The worker must consider not only the machine at the work place, but also the preceding and following parts of the process. This requires information and with information goes responsibility. To handle the responsibility, workers need flexible training in many tasks and are often required to work in teams or "work groups." In short, a workers' job provides information about what is going on "out there," what place their position occupies within the system, and allows the independent thought necessary to take action in response to unusual events.

The Japanese and some U.S. companies have established systems that depend on high quality human resources, and require a high degree of employee involvement. Taking a cue from noted quality expert W. Edwards Deming, business thinking has begun to evolve. It is not sufficient to find and hire good people to work in a firm. Businesses constantly require new information and new skills to deal with new methods of production and changes in the work place. Investment in people through education and training is a prerequisite for long- term planning and survival.

Figure 1

PROPORTION OF KANSAS PERSONAL INCOME
by industry - percentage share



Changes in the U.S. and Kansas Economy

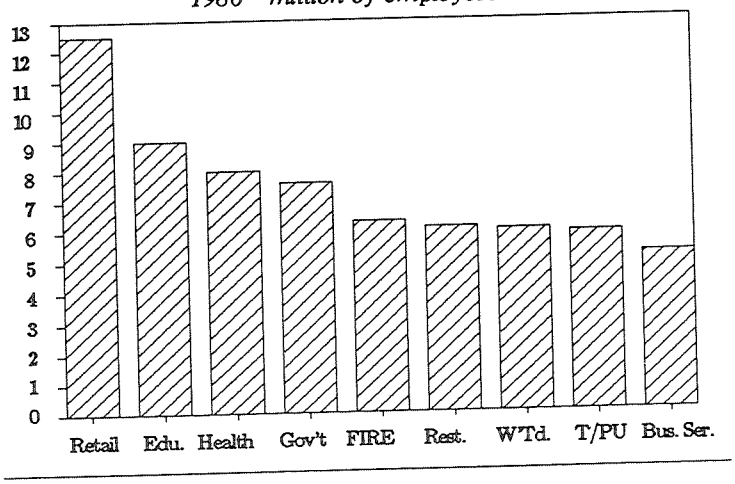
Services have also become a more significant part of the economic pie as Kansas' economy has modernized.

2-7

Figure 2

NINE LARGEST SERVICE INDUSTRIES

1986 - million of employees



Services have provided an increasing portion of personal income in Kansas (Figure 1).[4] Services also employ many millions of Americans (Figure 2). The proportion of manufacturing employment to employed workers has fallen from 25 percent in 1950 to 17 percent of the U.S. total.[5] At the high-point of the American age, 26 percent of all personal income was derived from manufacturing; now it is 15 percent.[6] Services, once less than ten percent of personal income, now exceed manufacturing.

Manufacturing will remain a significant element of the U.S. economy. In 1947, manufacturing accounted for roughly 22 percent of GNP; it still does.[7] Part of the reason for this success despite lower employment overall has been increases in manufacturing productivity through the 1950s and 1960s, as well as the later 1980s. However, for the United States, and for a less-intense manufacturing state such as Kansas, to rely on manufacturing as a major provider of jobs would not be wise. Further increases in productivity in the manufacturing sector will come at the expense of total proportional employment. Indeed, noted business author Peter Drucker predicts that by 2010, industrial workers will compose no more than 5 or 10 percent of the American work force, following the path begun in the nineteenth century by agricultural workers.[8]

New jobs have been provided primarily by the service sector. While the "labor" part of much of business is increasingly easy to automate, the jobs which require imagination, learning ability, or interpersonal interaction are not. Subsequently, these jobs are an increasing fraction of total employment.

In 1950, the service sector (excluding finance, retail, transportation, and public utilities) accounted for approximately 9 percent of employed civilians, by 1970 for 15 percent, and by 1988, 22 percent.[9] The service- producing sector, including finance, retail, transportation and public utilities, now accounts for 70 percent of American employment, up from 45 percent in 1950. By 1988, the service sector in Kansas employed 18 percent of workers, service-producing industries (includes transportation and public utilities, wholesale and retail trade, finance, services, government), 49 percent, and manufacturing, 15 percent.[10]

Many of the new jobs fall into unfamiliar categories. This is particularly true where information as a commodity is playing an increasingly important role, by changing production processes and management approaches. Awkward terms such as "para-professional" are used to designate these new, unfamiliar roles.

Changes in Labor Supply

An examination of changes in the work force through the remainder of the century revealed that several key changes are occurring. First, the growth rate of the labor supply will slow for the U.S. (Table 1), and for Kansas (Table 2). This is the result of a decline in new entrants into the work force. New entrants into Kansas' work force - those of ages 15-24 - peaked in 1980 (19 percent of the Kansas

Table 1

U.S. LABOR FORCE, 1950-2000

(in millions)

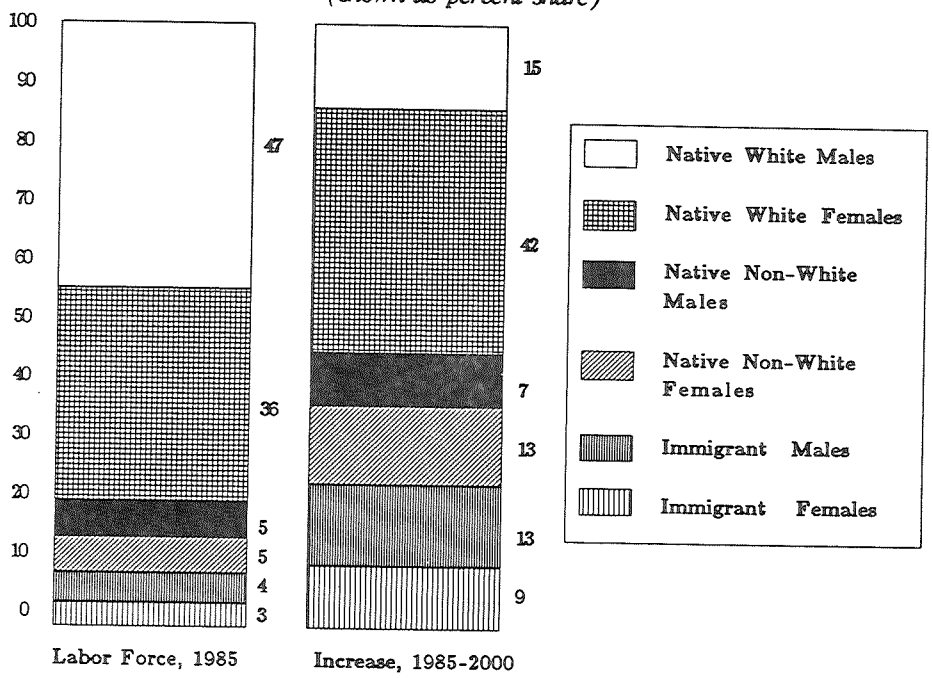
Year	Labor Force	Gains from Previous Period
1950	62.2	9.5
1960	69.6	7.4
1970	82.8	13.2
1980	106.8	24.1
1990	124.6	18.0
2000	140.5	15.6

3-8

Figure 3

NEW ENTRANTS TO LABOR FORCE

(shown as percent share)



population) and will decline to below 14 percent of the Kansas population by the year 2000 (Table 3). Similar trends will also occur for the U.S. work force. Already small manufacturers report they are having difficulty filling job openings. Table 4 shows they are having more difficulty filling skilled labor and mid- to senior-level executive positions and less difficulty filling unskilled labor and clerical positions.

To fill labor shortages caused by the decline in white male entrants into the work force, businesses are turning to other, previously neglected populations for new entrants. There is a growing participation of women in the work force. Two-thirds of labor growth in the U.S. over the last two decades has been due to women, and this growth will continue (Table 5). Table 6 shows that women's participation in the Kansas work force has grown and is projected to grow to 47.5 percent of the total work force by the year 2000.

Minorities will also become a larger share of new entrants into the U.S. labor force. Non-whites will make up 29 percent of new entrants between now and the end of the century (Table 7). While projections of minority participation are not available for Kansas, Table 8 shows that minorities' participation has increased in Kansas.

Women and minorities will make up 62 percent of the work force by 2000. Immigrants, women and minorities will account for 85 percent of the U.S. labor force by 2000. Figure 3 shows that in 1985, native white males comprised the largest proportion of the labor force, and the native white females group was the second largest. White males will comprise only 15 percent of the net additions to the labor force between 1985 and 2000.

Depending upon women and minorities to fill jobs raises serious training issues. Women and minorities have composed a disproportionate share of those with poorer quality education and skill-training. There are major problems in the American educational system. Every year in the United States, one million young people drop out of high school. In some inner cities, this can approach 50 percent of all young people. Of the 2.4 million who graduate each year, perhaps as many as one quarter cannot read or write at the eighth grade level - the "functionally literate" level. Indeed, most seventeen year old persons cannot summarize a newspaper article, write a good letter requesting a job, solve real life math problems, or follow a bus schedule.[11]

But what about new entrants over the next several decades? The Hudson Institute projects that more than three-quarters of the nation's new workers will have limited verbal and writing skills - that is their reading vocabulary will not exceed 6,000 words, their reading rate will not exceed 215 words per minute, and their writing ability will not exceed writing compound sentences. Indeed, the Hudson Institute estimates that only 22 percent of new employees will be able to function at a level higher than this.[12]

3-9

The Bureau of Labor Statistics estimates that, during the 1980s, some 2.3 million workers were displaced each year. Approximately 30 percent of the displaced workers lacked the most basic skills - reading, writing and arithmetic. As a result, about one-third of them never found new jobs. Others found jobs, but at much lower pay.[13]

At the other end of the spectrum there are also problems among highly trained workers, particularly scientists and engineers. The actual percentage of students who choose to enter these fields has remained roughly constant. In the past thirty years, only four percent of all 22-year old persons acquiring bachelor degrees chose science or engineering, according to the National Science Foundation.[14]

How does Kansas compare with the rest of the United States on the basis of educational achievement? One can sum up Kansas' relationship to nine states most similar to Kansas (North Dakota, South Dakota, Nebraska, Colorado, Oklahoma, Missouri, Iowa, Indiana, and North Carolina) as exceptional. The percentage of adults 25-64 in the United States who have completed high school is 66.5 percent. In Kansas, it is 73.3 percent. Most states comparable to Kansas rank roughly equal to or below Kansas (Table 9). Kansas also compares well with the nine comparison states in percentage of adults with one to three years of college. The percentage of adults in the United States age 25-64 who have completed between one and three years of college is 31.9 percent. In Kansas, that figure is 34.2 percent. All other states except Colorado and North Dakota rank below. For adults aged 25-64 in the United States who have four or more years of college, the U.S. average is 16.2 percent. In Kansas, it is 17 percent.

When ranking states by the educational attainment of populations over the age of 25, Kansas ranked fourth in the nation in the percentage who completed high school (Table 10). This exceeded all nine comparison states. Kansas also ranked thirteenth in the nation in quality of available work force. Available work force is measured by the percentage of adults over 25 years with a high school education and with four year of college education; the number of engineers and scientists as a percentage of the civilian labor force; the ratio of employed adults to total adult population; and the ratio of workers employed in advanced technologies to total employed workers. For the comparison states, only Colorado exceeded Kansas in this category.

Table 2

KANSAS TOTAL EMPLOYMENT, 1950-2000

Year	Labor Force (thousands)	% Gain From Previous Period
1950	724	X
1960	828	14
1970	885	7
1980	1131	28
1990	1338	18
2000	1470	10

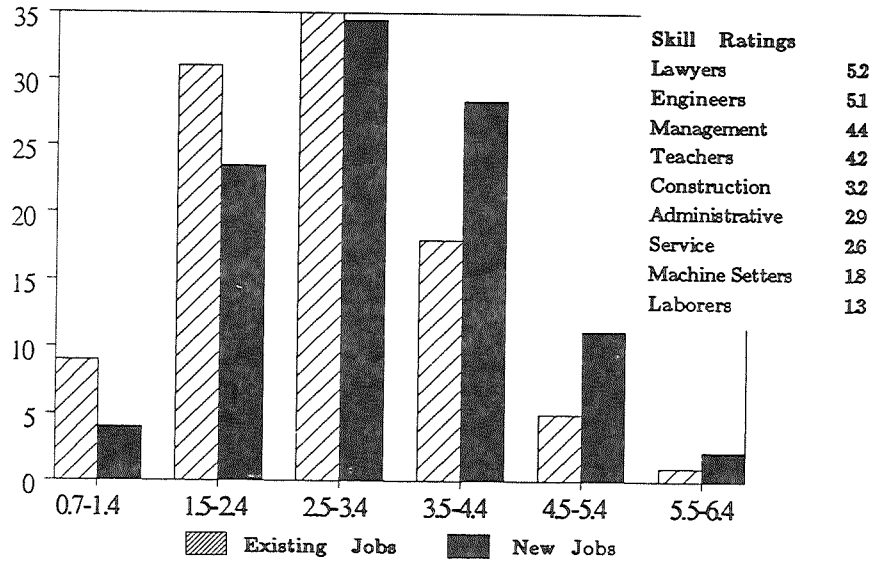
Change in Labor Demand

In 1980, approximately 7.1 percent of the U.S. civilian labor force was unemployed. At this same time, approximately 4 percent of the Kansas civilian labor force was unemployed.[15] Moreover, the participation rate - that is, the number of people in the labor force divided by the total population - has been increasing in Kansas. In 1970, 58.2 percent of all Kansans were in the labor force. In 1980, this had increased to 63.8 percent.[16] The Kansas Business Review published figures for employment in Kansas for high technology workers. Between 1970 and 1980, there were increases in the number of high technology workers employed. The number of computer personnel employed rose 442.9 percent, and the number of scientists rose 60.5 percent. Employment projected from 1980 to 1990 predicts increases of 49.7 percent for engineers and 64.3 percent for computer personnel.[17]

Important challenges in the quality of labor face the nation. More than half of all jobs created before the end of this century will require post- secondary education; nearly one-third will require college graduates (compared with 22 percent today).[18] Most new jobs will require more education (Table 11). A closer look at skills required for employment at the end of the century shows a direct correlation between level of skills required and the rate of growth of employment in the occupation. The faster growing jobs require much higher math, language, and reasoning capabilities than slower growing and declining jobs.[19] When language, reasoning and mathematics skill requirements

Figure 4

SKILLED JOB RATINGS
(shown by percent of jobs in respective skill ratings)



are averaged, 4 percent of the new jobs in 2000 will be filled by workers with the lowest level skills, compared to 9 percent of jobs requiring such low skills today (Figure 4). In 2000, 41 percent of the new jobs will require skills ranked in one of the top three categories compared to the current 24 percent (Figure 4).

Looking at employment projections for specific labor groups, the most notable growth in Kansas will occur in the areas of skilled crafts, managers and officials, clerical and sales workers (Table 12). The most notable decline will occur for farmers and farm workers.

Until recently, workers with limited academic skills could still succeed in America. Many jobs simply required motions of a regularized process or a repetitive interaction with machines. Today, workers are increasingly required to have reading, computation, and problem-solving skills. The economy of the future will not produce or sustain high-wage, low-skill jobs. The individuals with good jobs in the future will be those who are well-trained, well-educated, and can be productive in a high-skill, service economy. The state that prepares its work force for this future will be more successful in maintaining a high- productivity, high-wage economy.

Implications for Kansas Economic Development

To summarize, changes are underway in Kansas and the U.S. that have important implications for the Kansas economy: 1. Skill requirements are rising and will continue to do so. A more complex world demands more complex skills. 2. Change is occurring more quickly. Because of rapid technological change, technical skills become outdated more quickly. The work force must be committed to life long learning to be able to adapt to this change. To be flexible, the work force must have a good foundation in basic skills, must know how to learn, must communicate effectively, think creatively, and solve problems.
3. A shortage of traditional new workers (white males) will require Kansas to retrain existing workers, and to bring non- traditional workers such as women and minorities into the work force in occupations requiring technical skills. 4. Because work force shortages are predicted nationwide, a state's competitiveness will be determined in part by the policies it adopts to deal with the shortage, particularly for skilled employees.

Kansas can meet the demands of restructuring its economy to be more competitive internationally by lowering wages (and therefore lowering real income) or by initiating a major effort to improve management and production systems, stimulate innovations in advanced technologies, revise outdated public policies that hamper international competition, and above all, upgrade the skills of workers through better education, labor adjustment policies, and job training.

Improving the quality of education (raising the math, language, and reasoning skill levels of entry-level workers) and retraining (giving older workers new, more marketable skills) should be at the center of any economic development plan for the state of Kansas. Evaluating Kansas' ability to do this through its vocational-technical education system is the focus of this report. □

3-11

Table 3

AGE GROUP AS A PERCENT OF THE KANSAS POPULATION
(1960-2020)

Age Group	1960	1970	1980	1990	2000	2010	2020
15-24	13.31	18.06	19.06	13.62	14.53	13.99	12.33
25-44	24.99	22.30	26.41	32.24	29.29	25.89	26.62
45-54	10.88	11.00	9.79	9.66	13.75	15.50	11.47
55-64	8.93	9.42	9.56	8.28	8.45	12.25	14.01
65 +	11.03	11.85	12.96	12.95	12.69	13.01	16.77
Total*	2,179	2,247	2,364	2,497	2,601	2,699	2,780

* Total Population in thousands

Table 4

SMALL MANUFACTURERS REPORT OF WORKFORCE SHORTAGES
DEGREE OF DIFFICULTY FILLING POSITION

Position	Very difficult	Fairly difficult	Not too difficult	Not difficult	Have no jobs of this type	No response
Unskilled labor	4%	23%	42%	19%	8%	4%
Skilled labor	35%	28%	18%	0%	5%	4%
Clerical workers	4%	27%	50%	15%	0%	4%
Mid-level executives	8%	34%	26%	5%	18%	9%
Senior-level executives	17%	22%	14%	4%	34%	9%

Table 5

THE CHANGING ROLE OF WOMEN IN THE WORKFORCE
(numbers in thousands, except for percent)

Category	1950	1960	1970	1980	1990	2000
Women in the Workforce	18,389	23,240	31,543	45,487	57,230	66,670
Participation Rate	33.9%	37.7%	43.3%	52.5%	57.5%	61.1%
Share of Work force	29.6%	33.4%	38.1%	42.5%	45.8%	47.5%

Table 6

WOMEN IN THE LABOR FORCE AS A PERCENTAGE OF TOTAL EMPLOYED CIVILIANS

Women	1976	1980	1986	2000
U.S.	39.7%	42.4%	44.4%	47.0%
Kansas	39.1%	43.1%	44.6%	47.5%

Table 7

NON-WHITES SHARE OF THE U.S. WORKFORCE

Category	1970	1985	2000
Working Age Population (16+0)	137.1	184.1	213.7
Non-White Share	10.9%	13.6%	15.7%
Labor Force	82.8	115.5	140.4
Non-White Share	11.1%	13.1%	15.5%
Labor Force Increase (Over Previous Period)	X	32.7	25.0
Non-White Share	X	18.4%	29.0%

Table 8

MINORITIES IN THE WORKFORCE AS A PERCENTAGE OF TOTAL EMPLOYED CIVILIANS

	1970	1976	1980	1986
United States	10.7%	10.8%	11.2%	16.4%
Kansas	5.2%	4.7%	5.0%	6.8%

Table 9

COMPARATIVE POST-SECONDARY EDUCATION, ADULTS 25-64
U.S., Kansas and Comparative States

State	Median Years School	High School Completed	1 -3 Years College	4 or More Years College
Colorado	12.8	78.6	44.1	23.0
KANSAS	12.6	73.3	34.2	17.0
United States	12.5	66.5	31.9	16.2
Nebraska	12.6	73.4	32.8	15.5
Oklahoma	12.5	66.0	31.2	15.1
North Dakota	12.5	66.4	35.1	14.8
South Dakota	12.5	67.9	31.7	14.0
Iowa	12.5	71.5	28.6	13.9
Missouri	12.4	63.5	27.2	13.9
North Carolina	12.2	54.8	27.0	13.2
Indiana	12.4	66.4	24.6	12.5

Table 10

COMPARATIVE STATE RANKINGS, POPULATION OVER 25
Completed High School 1984 and 1985/Available Workforce 1986-1987

State	% of Population 25 and over who have completed High School		Available Workforce *	
	1984	1985	1986	1987
Colorado	6	6	9	6
KANSAS	7	4	16	13
Missouri	29	29	21	17
Indiana	33	30	34	25
Iowa	13	8	39	26
Nebraska	2	10	32	27
Oklahoma	26	22	33	29
North Dakota	12	9	37	38
North Carolina	43	41	29	39
South Dakota	18	17	38	40

* Available workforce - Percent of adults over 25 with a high school education, and with four years college education; number of engineers and scientists as a percent of civilian labor force; ratio of employed adults to total adult population; and ratio of workers employed in advanced technology industries to total employed workers.

Table 11

REQUIRED SCHOOLING FOR CURRENT AND NEW JOBS

Category	Current Jobs	New Jobs
Total	100%	100%
8 Years or Less	6%	4%
1-3 Years of High School	12%	10%
4 Years of High School	40%	35%
1-3 Years of College	20%	22%
4 Years of College or More	22%	30%
Median Years of School	12.8	13.5

Table 12

KANSAS EMPLOYMENT PROJECTIONS

Category	1982	1990	Percent Change
Clerical	186,670	235,030	25.91%
Service	214,850	258,950	20.53%
Professional,Technical	156,080	197,670	26.65%
Skilled Crafts	109,810	142,100	29.41%
Managers and Officials	89,450	113,070	26.41%
Sales Force	60,850	75,050	23.34%
Farmers / Farm Workers	66,480	61,940	-6.83%

3-15

TECHNICAL AND VOCATIONAL TRAINING FROM THE PERSPECTIVE OF KANSAS BUSINESSES

Businesses need efficient training programs to meet their future work force needs

Introduction

Traditionally, Kansas has been strong in human capital. Because of this tradition, developing the state's human capital, particularly in the areas of increasing labor force participation rates and in providing skill training and retraining, has not received priority attention in the state's economic development initiatives. Thus, the state lacks an up-do-date strategy for developing the current and future skilled work force. However, before such a strategy can be developed, the needs of business and industry must be defined. National surveys of business and industry indicate skill requirements are rising and will continue to do so. Because of rapid technological change, technical skills become outdated more quickly, requiring the work force to be committed to life long learning to keep pace with change. Nationally, employers are saying the work force must have a good foundation in basic academic skills, must know how to learn, must communicate effectively, think creatively, and solve problems. The demand for a more sophisticated work force coincides with decreases in the number of new traditional workers (white males), which necessitates using nontraditional workers (women, minorities) in the work force.

To determine if trends reported nationally exist in Kansas, a survey of Kansas business and industry was conducted. The purpose of the survey was to: 1. Determine how extensively Kansas employers utilize the state's technical and vocational training system and what their evaluation of the system is; 2. Determine skill areas in which Kansas' work force needs improvement; 3. Determine the level of Kansas employer's interest in customized training; 4. Determine what the technical and vocational training system needs to do to meet the training and retraining needs of the Kansas work force.

Procedures

Using a data base furnished by the State Department of Human Resources, 618 firms completed a telephone survey. The sample included businesses judged to be more likely to utilize the technical training system. Firms NOT included were firms having less than five employees and firms with certain SIC classifications (personal services, miscellaneous retail, eating and drinking places, food stores, membership organizations). The sample was over weighted for manufacturing firms. Table 13 presents a break down of firms who participated by number of employees, setting, and manufacturing/nonmanufacturing categories.

Firms were scheduled for a 30 minute telephone interview. The director of human resources or the president of the firm was interviewed in most companies. An initial phone call explained the purpose of the survey and established an appointment for a second call during which the survey was administered. A letter was sent after the first call confirming the survey appointment time listing several of the more complicated survey items for the respondent to complete prior to the appointment time.

Results

Source and Evaluation of Training

Fifty-four percent of firms surveyed intentionally employed community college and AVTS trainees. Forty-nine percent of the firms utilized technical or vocational training programs to retrain (upgrade the skills) their current employees. For those firms investing in human capital (retraining employees), professional association seminars, vendor training, and community colleges were used by most firms (Table 14). Firms more likely to obtain training for their employees included large and medium size firms, firms expecting technology impact (technology-driven firms), and firms using customized training. Small firms and firms who are not technology driven do not utilize the training system as much.

Those hiring trainees from the public technical and vocational institutions were satisfied with the skills of

those employees (Table 15). High levels of satisfaction would be expected of firms who intentionally hire trainees from these institutions, so all firms were asked to evaluate the quality of technical and vocational training from all available external sources (those listed in Table 14). On average, firms rated all sources as adequate. The only exception was training offered at local high schools which was rated midway between "needs improvement" and "adequate." Manufacturers rated training received from high schools, community colleges, private colleges/universities, and consultants/commercial trainers lower than did nonmanufacturers.

Table 13

TYPES OF FIRMS PARTICIPATING IN SURVEY

Category	Total	Manu.	Non-Manu.
Number of Firms	618	320	298
Number of Emp.			
Mean	189	174	206
Median	60	67	56
Std. Dev.	510	395	610
Low	2	3	2
High	7500	400	7500
Firm Size - %			
Small (5-49)	42.6	39.4	46.0
Medium (50-250)	39.5	42.8	35.9
Large (251+)	18.0	17.8	18.1
Setting			
No. of Counties	88	65	69
% Rural	20.4	16.2	24.9
% Mid-Size	31.2	36.3	25.8
% Urban	48.4	47.5	49.3

For the 51 percent who did not utilize the technical and vocational training system within the last five years, on-the-job training and in-house training programs were most frequently used (Table 16). Manufacturers and technology-driven firms were less likely to say that their employees did NOT need training. These types of firms reported that the lack of training designed to meet their needs was a barrier to utilizing external training sources. Technology-driven firms also utilized external training sources less because training was too expensive.

Work Force Skill Improvement

Sixty-five percent of firms surveyed reported that technology changes will increase the level of skills needed by their employees over the next five years. Because of the impact of rapid technological change, Kansas employers (like employers nationally) report gaps between the skill of newly hired and existing employees and the skill levels needed by the firm.

When asked to describe their problems in finding skilled employees, the majority of firms reported a moderate to severe gap between the skills of newly hired employees and the needs of the firm (Table 17). The problem of finding skilled employees is serious, more serious than two or three years ago, and is projected to become more severe in the near future.

On average, Kansas firms perceive (and expect in the future) moderate problems in finding skilled workers. These perceptions were analyzed for different types of firms. Probably because large firms can attract better trained employees, small and medium sized firms perceived the gap between qualification of newly hired workers and the needs of their businesses to be significantly larger than did large firms. Overall, medium sized firms perceived a greater problem with the availability of skilled employees than did large and small firms. Manufacturing firms reported a larger gap between the qualifications of newly hired workers and the firm's skill needs than did nonmanufacturing firms. Availability of skilled workers was a significantly greater problem for firms which were technology driven than for firms which were not.

To further define improvements needed in the Kansas work force, firms were asked to indicate areas in which newly hired employees and current employees needed improvement. Table 18 shows that Kansas firms,

3-17

like firms around the country, are more concerned about their employees' basic academic skills and general work skills than about their technical skills. However, when analyzed by various subgroups, improvement in technical, machine, and trade/craft skills were important for manufacturing and technology-driven firms.

Similar analysis for areas needing improvement showed that current employees will need retraining to cope with technological changes. Again, areas needing retraining were basic academic skills and general work skills (Table 19). Manufacturers and technology-driven firms predicted current employees would also need retraining in technical and microcomputer skills.

These results show that, at a time when work force skill requirements are increasing and predicted to increase further as technology changes, the work force's motivation, attitudes toward work, work habits, and goals are judged to need improvement. Thus, the next logical question is what should the training system do to ensure the work force is prepared to meet the needs of Kansas' employers.

Table 14

SOURCES OF TECHNICAL/VOCATIONAL TRAINING

Source	% of Total Sample
Professional association seminars	76
Vendors (equipment & system suppliers)	71
Community college	64
Consultants/other commercial trainers	62
Area vocational-technical school	61
State University	47
Local high school	23
Private college/university	22
Apprenticeship training	20
Private vocational technical school	17
Pittsburg State University	15
Other	13
Washburn University	10
Kansas College of Technology	10

Work Force Training Needs

Several issues must be addressed if the vocational-technical training system is to meet the training needs of Kansas business and industry. Areas of particular concern include customized training, funding, quality of programs, equipment, and instructors.

Customized Training. As reported earlier, nearly 40 percent of firms who had not used technical and vocational training for their employees reported that training that met their needs could not be found. This suggests that customized training is needed. Customized training is designed and tailored specifically to meet the needs of a particular client. The training may be designed to present specific information or teach particular skills of interest. Likewise, the training may be scheduled at times and delivered in a time frame suited to the particular needs of the client.

Thirty-six percent of firms surveyed reported using customized training in the past five years (Table 20). More large firms (62 percent) use customized training than small (21 percent) and medium sized firms (40 percent). Manufacturers used customized training more than non-manufacturers and firms in urban and mid-sized counties used it more frequently than firms in rural counties. Thus, smaller firms and firms in rural areas did not have access to customized training as much as other firms. Lack of utilization was not due to a bias against customized training. Firms which did not use customized training reported that they considered customized training to be more cost effective than other forms of training (Table 21). Lack of utilization must be due to other variables.

Promotion or marketing of customized training is one way firms find out about customized training. Since community colleges and AVTS' do not, for the most part, have well organized mechanisms for marketing customized training (and may actually choose not to aggressively market due to funding risks involved with customized training), it is not surprising that most firms reported they were not contacted over the last three years about these institutions providing customized training. Sixty-five percent reported never being contacted by community colleges and 70 percent were never contacted by AVTS' (Table 22). Also, large and medium-

sized firms were more likely to be called upon by community colleges and AVTS' than were small firms.

Sources of training which have established mechanisms for informing firms about customized training are receiving a larger share of the customized training market. Table 23 shows that consultants/commercial trainers and vendors (suppliers of equipment and systems) are sources of customized training used most frequently by the largest number of firms. Twelve percent of firms using customized training worked most frequently with community colleges, while nine percent utilized AVTS' most frequently.

Funding. Sixty-eight percent of the firms surveyed reported that they paid the total cost of employee training, 20 percent used a combination of firm and public funds, 19 percent used Job Training Partnership Act (JTPA) funds, and seven percent used Kansas Industrial Training (KIT) funds. Firms which are solely Kansas firms (those whose Kansas operations are not part of a larger non- Kansas corporation) spent a median amount of $1,000 on employee training. The median amount for Kansas plus non-Kansas owned firms was $2,000. Since the median number of employees for the entire sample (Kansas plus non-Kansas owned firms) was 60 employees, firms spent an average of $33.33 training each employee.

Clearly, investment in human capital is low. Large firms spent significantly more on training than small firms and reported using KIT funds more than medium size and small firms. Large and medium size firms used JTPA funds as well as a combination of firm and public funds to a significantly greater extent than small firms. Thus, large firms were more successful than small and medium-sized firms in accessing external funding sources to support training. To promote small and medium-sized firms (the backbone of the Kansas economy) investment in human capital, these firms need access to external funding sources to help support training costs. Without this support, small and medium-sized firms will not remain competitive. If they do not invest in their employees because of funding difficulty, they will loose their competitive edge. If they invest in employee training and do not have external funding sources similar to those obtained by large companies, they cannot compete with large companies in operating costs.

Quality of Training. Generally, firms rate the quality of technical and vocational education in Kansas as adequate. However, 22 percent reported that programs and courses needed improvement, 15 percent reported instructors needed improvement, and 25 percent reported equipment needed improvement. In addition, 83 percent of all firms agreed that it was important for community colleges and AVTS' to train using technically advanced equipment. These results suggest that providing adequate equipment for training may become an important issue as technological changes make it increasingly difficult for schools and instructors to keep up with increasingly sophisticated equipment. When asked what changes would increase the likelihood of the firm using training services from community colleges or AVTS', a large percentage of the firms reported moderate interest in receiving: 1) more information about what training programs were available; 2) state assistance in reducing the cost of training; 3) greater flexibility in scheduling of training; 4) greater relevance of training to firm's training needs, 5) more up-to-date equipment; and 6) more highly qualified instructors.

Private-Public Partnership in Meeting Work Force Training Needs

While firms reported that the state's vocational-technical training system needed to customized training to fit business training needs, needed to improve equipment, and needed to improve instructors' qualifications, firms were limited in what they were able or willing to do to help make the system more responsive to their needs. Executives of large firms, of firms who intentionally employed community college and AVTS trainees, and of manufacturing firms who were technology driven or used customized training were slightly to moderately interested in serving on advisory boards. Firms of all types had only slight interest in donating equipment for programs or donating staff time to assist with teaching courses. However, large firms and manufacturing firms were moderately interested in assisting with development of new community college and AVTS training programs. Results also indicated that firms which intentionally employed community college and AVTS trainees, were technology driven, used technical and vocational training, and/or used customized training had a significantly greater interest in working with community colleges and AVTS.' Likewise, large and medium-sized firms and firms located in mid-sized and urban counties were significantly more interested in some degree of interaction with vocational and technical education institutions.

Implications

These results indicate a willingness on the part of business to participate in the development and improvement of training programs. Mechanisms to encourage meaningful participation need to be developed to facilitate business input into the vocational and technical education system. Increased business commitment and partnership in postsecondary technical education would ensure that the system would be more market driven and responsive to work force training needs.

While firms judge the current technical education system to be adequate, signs of strain or contradiction were detected. Business and industry need training designed to meet their work force training needs. Those needs have and will continue to move toward more emphasis upon basic academic skills, work habits and attitudes, and increased technical skills. A more diversified population will need to be served. Adults will continue to utilize the system in increasing numbers to obtain basic literacy and technical skills as well as upgrade academic and technical skills. The system may be on the brink of having programs, instructors, and equipment which are unable to keep up with the pace of these changes. □

Table 15

SATISFACTION WITH TECHNICAL OR VOCATIONAL SKILLS OF TRAINED EMPLOYEES

	Level of Satisfaction:	
Intentionally Hire:	Percent Dissatisfied	Percent Satisfied
Community College	9	91
AVTS	11	89
Pittsburg State	1	99
Washburn University	8	92
Kansas College of Technology	9	91

Table 16

REASONS FIRMS DO NOT SEEK OUTSIDE TRAINING

	Percentage of Firms:
Reason:	
Do on-the-job training	88
Developed in-house training	75
Employees haven't needed training	41
Can't find training that meets needs	38
Training is too expensive	25
Other	13

3-20

Table 17

EVALUATION OF WORKFORCE QUALITY AND QUANTITY

Evaluation:	Percentage of Firms:
Moderate to severe gap between skills of newly hired employees and needs of firm	58
Moderately to extremely difficult to find skilled employees	51
Slightly to much more difficult to hire today than two to three years ago	69
Slightly to much more difficult to hire in the next two to three years	70

Table 18

SKILL IMPROVEMENTS NEEDED BY NEWLY HIRED EMPLOYEES

Area Needing Improvement	Total Group Percentage:	Percentage of Subgroups:		
		Manufact.	Non-Manuf.	Tech. Driven*
Goal setting and personal motivation	79	77	82	84
Propert attitudes toward work & work habits	77	79	75	81
Organizational effectiveness & leadership	75	73	77	79
Listening & oral communication	72	70	74	78
Problem solving	70	73	66	76
Teamwork	70	71	70	76
Adaptability/flexibility	66	63	69	71
Interpersonal relations	60	57	63	63
Comprehension/understanding	60	60	60	68
Writing	60	55	66	63
Business/management	57	53	61	62
Computation	52	54	49	58
Microcomputer	47	47	48	54
Reading	43	45	42	46
Technical	42	50	32	51
Skilled trades/crafts	40	50	30	48
Mechanical	38	46	28	43
Machine operation	37	50	22	40
General labor	31	34	27	35
Clerical	29	25	33	32
Electrical	25	32	18	31
Mainframe computer	22	21	24	27
Other	8	9	7	9

* Technology driven firms are those firms that responded that technology changes will increase the level of technical or vocational skills needed by their employees over the next five years.

3-21

Table 19

SKILL IMPROVEMENTS NEEDED BY CURRENT EMPLOYEES TO COPE WITH TECHNOLOGICAL CHANGE OVER THE NEXT FIVE YEARS

		Percentage of Subgroups:		
Area Needing Improvement:	Total Group Percentage:	Manufact.	Non-Manuf.	Tech. Driven
Goal setting and personal motivation	72	72	71	80
Propert attitudes toward work & work habits	72	70	75	79
Organizational effectiveness & leadership	71	72	40	77
Listening & oral communication	71	69	72	77
Problem solving	70	71	69	76
Teamwork	68	67	70	75
Adaptability/flexibility	68	67	68	75
Interpersonal relations	67	66	69	75
Comprehension/understanding	65	64	66	70
Writing	58	53	65	65
Business/management	56	53	60	62
Computation	56	63	48	66
Microcomputer	51	59	54	64
Reading	49	52	49	57
Technical	44	45	54	53
Skilled trades/crafts	41	56	30	49
Mechanical	40	49	34	48
Machine operation	35	47	33	46
General labor	35	31	40	39
Clerical	33	34	36	38
Electrical	30	39	25	38
Mainframe computer	8	33	27	33
Other		9	7	9

Table 20

UTILIZATION OF CUSTOMIZED TRAINING

Portion of Sample:	Percentage of Firms:	Portion of Sample:	Percentage of Firms:
Total sample	36	By Type:	
		Manufacturing	68
By Size:		Non-Manufacturing	61
Small	21		
Medium	40	By Setting:	
Large	62	Rural	28
		Mid-size	37
		Urban	38

Table 21

PERCENTAGE AGREEING THAT CUSTOMIZED TRAINING IS COST EFFECTIVE

Total sample	82
Firms using customized training	88
Firms not using customized training	78

Table 22

EXTENT OF PROMOTION OF CUSTOMIZED TRAINING BY COMMUNITY COLLEGES AND AVTS IN KANSAS

	Never	Once in Three Years	Once Per Year	Twice or More Per Year	Mean	Number
Community College	65%	10%	12%	13%	1.7	596
AVTS	70%	12%	10%	8%	1.6	594

Table 23

MOST FREQUENTLY USED SOURCE OF CUSTOMIZED TRAINING

Source:	Percentage of Firms:
Consultants/commercial trainers	25
Vendors	19
None - Developed in-house training	14
Community colleges	12
Area vocational technical schools	9
Kansas College of Technology	6
Apprenticeship training	5
Private vocational technical school	4
Other (high schools, university, etc.)	6

3-2.3

KANSAS POSTSECONDARY VOCATIONAL-TECHNICAL TRAINING SYSTEM: SURVEY OF KANSAS INSTITUTIONS THAT PROVIDE TRAINING

Business/education cooperation is the most important issue facing Kansas' training system

Introduction

Kansas' postsecondary vocational and technical training system consists of 16 area vocational and technical schools (AVTS) and 19 community colleges. Two AVTS' are located at community colleges. In addition, postsecondary vocational-technical training programs are offered at Pittsburg State University (PSU), Washburn University (WU), and Kansas College of Technology (KCT). These institutions are scattered throughout the state and each serves a specific region. Services include: 1. Providing complete training programs for secondary and postsecondary students in technical skills (this can include basic skill training in reading and math); 2. Providing adult education courses; and, 3. Providing customized training for business and industry.

To determine how the system works, how services are provided to postsecondary, adult, and business-industry clients, and how well the system meets the state's needs for a well-trained, adaptable work force, a thorough analysis of the system was done.

Procedures

Because of the size and complexity of the vocational-technical education system in Kansas, information was collected from all institutions through written surveys and on-site visits to obtain enrollment, budgetary, and curriculum statistics. Each institution was asked to complete written surveys to be returned by mail or during on-site interviews.

Results

Programs:

The 19 community colleges offer 297 training programs in 76 occupational or career areas. Some programs are offered by only one college and other programs (e.g, office education) are offered by as many as 18 colleges. The 16 AVTS' offer 439 training programs in 98 career areas. Thus, a total of 736 programs are available. This diverse range of programs provides training for most business and industry sectors.

The vocational education system offers a wide range of programs designed to train the work force for jobs in each institutions' service region. In this regard, the system is meeting its mission of providing access to opportunities to acquire skills that will lead to employment. Key points regarding programs include:

- Programs are market driven. Student demand is the greatest determinant of what is offered.
- Business and industry influence the system by providing input into curriculum.
- Programs serving the service sector have grown and now comprise 68 percent of programs offered. Less growth has occurred in manufacturing-related programs, which now comprise five percent of programs offered.
- More programs were added than dropped in five of the last six years.
- Educators think their programs are keeping pace with changing job skill requirements.
- Educators think they need to improve their programs by producing more graduates, increasing business input, and improving customized training.
- Technological changes are predicted to increase technical skills and academic skills (reading, communication, math, reasoning, problem solving) required of students.

Funding

Program Funding. Area vocational and technical schools rely on state and federal aid programs, payments by school districts on behalf of secondary students, student tuition for postsecondary students, and local resources for their support. The formula that provides funding from school districts for secondary students is driven by enrollment and measures of need which include local ability to pay (assessed valuation per pupil), percentage of low income families, and unemployment rate. The formula for postsecondary students is also enrollment driven and is prescribed by state statute. State aid is distributed to schools on the basis of postsecondary student enrollments, computed at 85 percent of the local cost per instructional hour of vocational students. (Student tuition charged is equal to 15 percent of the local cost per instructional hour.) The local cost per enrollment hour is determined separately for each institution by subtracting area vocational technical school program aid and capital outlay aid from the operating budget and dividing the result by the total number of enrollment hours.[20] Allocation of state funds is based upon actual student attendance. Amount of state funds distributed to an institution decreases if students are absent from class or drop out of a program. Thus, the amount of state aid can decrease although the cost of delivering the program (e.g., instructor salary, equipment, etc.) remains stable. This practice makes it imperative for AVTS' to keep students in class for the duration of a program and makes it impossible for them to reward and release exemplary students who achieve competency prior to the completion of training (competency-based training). Competency-based training combined with open entry/open exit, under the current funding practices, would result in decreased state aid. Eight AVTS' have no access to supplemental funding. If enrollment exceeds levels planned for in the budget process, AVTS' cannot apply for supplemental funding from the state. Instead, AVTS' must go to the local school district for additional funds.

Community colleges rely mostly on property taxes, state aid, and student tuition for support. Formulas for state aid to community colleges are linked to credit hours of enrollment. The current rate of state aid for approved vocational programs is 1.5 times higher than that of academic programs because of the recognized higher cost of vocational programs. Community colleges receive $39.375 per vocational credit hour in state aid for all vocational programs. This amount is not affected by student absences. Two community colleges which operate area vocational schools (Cowley County and Pratt Community Colleges) receive credit hour state aid at 2.0 times that of academic courses ($52.50). Community colleges are reimbursed at the academic credit hour rate ($26.25) for remedial courses. Reimbursement is limited to 18 hours of remedial training per student, with a limit of 12 hours per category (e.g., math, English, etc.).

These multiples are not based upon specific program costs. No verification of these weights based on an analysis of actual costs has been done. Based upon instructional program cost data received from Johnson County Community College, the average cost per credit hour for vocational-technical programs was $141.85 (without capital; $146.39 with capital) for FY 1987-88. Program cost per credit hour ranged from $35.48 (Business Administration) to $376.52 (Nursing). Based upon these data, the state's $39.375 covers approximately 28 percent of the $141.85 average cost per credit hour. With the state aid equal to or only slightly less than the cost of some programs (e.g., Business Administration, Paralegal, Accounting), colleges experiencing financial difficulties may feel some incentive to offer less costly programs and not add more costly, highly technical programs (e.g., Biomedical Equipment Technology, Computer Systems Technology, Metal Fabrication, Manufacturing Technology, etc.) that would benefit local industry.

Out-district state aid is paid to a community college whenever a Kansas student enrolls who lives outside the college's district. In addition to out- district state aid, the out-district student's county of residence must also pay the community college at the same rate per credit hour. State and local administrators expressed strong dissatisfaction with this method of funding, and would like it eliminated.

The vocational education capital outlay aid program funds maintenance and instructional equipment. Funds appropriated for it are distributed on the basis of State Board of Education priorities. These funds are not always available. Since 1982, funds were appropriated for only three of the last eight fiscal years. During interviews, institution administrators emphasized the need for a stable or predictable funding base to allow planning for capital improvements and equipment purchase.

Eight institutions, or about 24 percent, felt that equipment needs were being met with Carl Perkins grants, capital outlay, and local funding. However, as one institu-

3-25

tion mentioned: "...in the future with the growth of high technology and demand by industry for highly trained employees, problems will become evident. Present equipment will become obsolete at a more rapid pace, and the demand to replace present equipment will cause budgeting problems. The state will have to increase funding for equipment through larger capital outlay expenditures."

Key Findings. To summarize, key findings regarding funding include:

o State aid to AVTS' is computed at 85 percent of the local cost per instruction hour. Schools lose state aid when students are absent or drop out, even though program costs remain constant.

o Competency-based training requires an AVTS funding system that recognizes skill acquisition in addition to enrollment or attendance.

o State aid for community college vocational programs is set at a flat rate, regardless of program cost. Highly technical programs are more expensive to offer. The current funding formula makes it difficult for colleges to offer programs that serve highly technical industries that are so important to the state's economy.

o Out-district tuition creates tensions between community colleges and their neighboring counties and should be eliminated.

o Capital outlay appropriations are used for maintenance and equipment. Appropriations have been too sporadic to allow schools to do long-term planning.

o Schools believe training equipment is adequate, although they are struggling to maintain adequacy. Rapid technological changes are likely to strain the system's ability to provide adequate equipment. Funding will be a critical issue in the near future.

Expenditures

Kansas ranked twentieth in dollars spent per capita for education and twenty-third in dollars spent per $1,000 of personal income. Audited expenditures for education increased 40.7 percent from 1983 to 1987 and vocational education expenditures at AVTS' and community colleges increased 27.6 percent. However, vocational education expenditures at AVTS' and community colleges decreased from 42.4 percent of total expenditures in 1983 to 38.4 percent in 1987.

According to administrators, equipment budgets are low. The Kansas Technology Enterprise Corporation (KTEC) equipment grant funds ($250,000) are viewed as an excellent way to provide funds for programs which have economic development impact and which support jobs in new and/or existing business and industry.

Key Findings. Key findings regarding expenditures include:

o Kansas ranks twentieth in dollars spent per capita for education.

o Vocational education expenditures as a percentage of total education expenditures have decreased in recent years.

o KTEC Equipment Grants have the potential to be an important source of funding for programs that contribute to economic development.

Enrollment

Vocational-Technical Programs. System wide, enrollment from 1983 to 1988 in vocational-technical programs increased 6.3 percent. AVTS' had large enrollments in services and strong enrollment in manufacturing-related programs. Community colleges main strength was in service related programs, with strong growth also occurring in manufacturing related programs.

A dramatic increase occurred in the number of adults enrolling at AVTS' and community colleges from 1984 to 1987 (Table 24). Adult enrollment increased dramatically across all program areas. Adult enrollment increases were particularly large in program areas where the rural economy was depressed (e.g., agriculture, construction) or where the economy as a whole showed growth (services). AVTS' had large enrollments in construction, business, and service areas. Community colleges also had large enrollments in business and health- education-social service areas.

Table 25 shows combined postsecondary and

adult enrollment by career area. Total enrollment nearly doubled from 1984-85 to 1987-88 for schools whose program enrollment data were obtained. Areas that accounted for the largest percentage of total enrollment (services) showed little change in the proportion or percentage of total enrollment. In service areas, health-education-social service programs showed the greatest change across time (135 percent). Other areas (mining, construction, manufacturing) showed large changes, but they comprised a much smaller percentage of total enrollment.

Key Findings.

Key findings about enrollment in vocational-technical programs were:

o Enrollment in vocational-technical programs has increased 63 percent from 1983 to 1988.

Table 24

AREA VOCATIONAL-TECHNICAL SCHOOL AND COMMUNITY COLLEGE ADULT ENROLLMENT

	1984-85	1987-88	% Change
AVTS	4,256	16,165	280%
Community Colleges	590	10,763	172%
Total	4,846	26,928	456%

o Programs training skills used by the service sector have the largest enrollments at AVTS' and community colleges.

o Manufacturing-related program enrollments represent a very small percentage of total enrollments. Manufacturing is a key industry in the state, yet enrollment represents only 2.8 percent of the total.

o Adult student enrollment increased dramatically across all programs, creating a significant shift in the population served by vocational education institutions.

Remedial Training

In addition to providing technical training, AVTS' and community colleges provide training in basic academic skills for under-prepared students. These courses provide students with the basic reading, writing, and computational skills necessary to develop the higher order skills needed for survival in a changing and highly technical society. Currently, AVTS' do not receive state reimbursement for remedial education courses, although two programs are currently being piloted using federal funds at Southeast Kansas AVTS and Liberal AVTS. Remedial credits do not count toward graduation. More than 3,000 students enrolled in remedial math, almost 2,500 took a remedial English course, and more than 1,400 enrolled in remedial reading. About 28 percent of all entering vocational student require remedial and developmental courses according to the survey.

Key Findings.

Because more students are entering postsecondary institutions under-prepared for the training occurring there, remedial training has become a very important issue. Key findings include:

o The number of students requiring remedial training in basic academic skills (reading, math, writing, etc.) is increasing.

o The largest proportion of under-prepared students are young. Twenty-eight percent of entering students need remedial training and over half of them are 18 to 21 years of age.

o Most institutions offer remedial training and generally encourage (but rarely require) under-prepared students to enroll in remedial courses.

o Lack of funding discourages schools from requiring remedial training.

o Eighty percent of the vocational education institutions rank entering students command of basic academic skills as fair to poor. Fifty-five percent rate exiting students as only having fair command.

o Basic literacy training for existing work force is a need that vocational education institutions are facing.

Customized Training

Customized training is designed and tailored specifically to meet specific needs of a particular client. Training that is customized is available only to the client or business contracting for the service and is not open for enrollment to the general student population. Thus, if a firm pays for its employees enrollment in regularly scheduled programs or courses (e.g., word processing), that training is not customized.

Customized training provided employees of business and industry has grown substantially. Growth in this area has been rapid for some institutions, and the need to develop training quickly enough to meet the needs of businesses has strained the system. To provide the system with the mechanism to be more responsive to the need for customized training, the State Board of Education recently approved the Department of Education's request for a Business and Industry Training Program for each institution. Under this program, schools can submit requests for customized training, be assured of quick processing by the Department of Education, and, with approval, gain state aid for all customized training. Funding is frequently obtained through supplemental funds approved by the legislature. Community colleges are assured of receiving state aid for customized training through supplemental appropriations, while AVTS' are not. AVTS' do not have access to supplemental funds, making customized training a financial burden since funding is not guaranteed.

The most frequently used customized training marketing method is a reactive one - 97 percent of the institutions responding to the survey said they respond to company requests. Only 15 institutions, or 48 percent of all institutions responding, have a business and industry coordinator position. However, often the person responsible for coordinating business and industry is also responsible for continuing education, instruction, and/or admissions.

Key Findings. Customized training is a cost effective form of training for business and industry. Vocational education institutions are struggling to provide customized training. Key findings regarding customized training include:

o Amount of customized training has increased, especially at community colleges.

o The recently approved Business and Industry Training Program provides and excellent mechanism for meeting businesses need for customized training. This program allows for efficient oversight by the Department of Education, making state aid available for approved courses.

o Few institutions have a person dedicated to organizing and promoting customized training resources at vocational education institutions. Although most recognize the need for such a position as interest in customized training increases, few have resources available for funding.

o With increased interest and demand for customized training, institutions are not always able to meet the demand due to difficulty in obtaining resources (staff, space, equipment).

Faculty Recruitment and Faculty Development

Key Findings. The key to quality vocational-technical training is well- trained faculty and instructors. Key findings regarding faculty recruitment and faculty development include:

o Seventy-seven percent of the vocational education institutions have had some difficulty attracting adequately skilled faculty and instructors, especially in disciplines where industry salary levels and/or work force shortages exist.

o Faculty development (retraining and skill upgrading) is voluntary at 73 percent of the institutions, largely because little or no funds are available to support faculty development.

o An important faculty development mechanism is summer employment in industry. Industry can play an important role in subsidizing faculty development, especially in fields experiencing rapid technological change.

Articulation Agreements

The State Board of Education has promoted articulation of students from one level of education to another. The primary motivation is a concern for the student and an interest in allowing students to progress toward educational goals. Articulation agreements between postsecon-

dary institutions exist at the community college-regent institution level and at the area vocational technical school-community college level. Although most community colleges have an articulation agreement for at least one program with an AVTS, competition for students, differences in program quality, and differences in funding formulas were cited as barriers to cooperation.

Articulation agreements also exist at the secondary-postsecondary level. Technical preparation programs help bridge secondary technical training with postsecondary training by broadening the scope of technical and academic skill training. Tech-prep programs often include courses in applied math, applied science, principles of technology, as well as specific skill training. The benefit to students is a more rigorous program linking secondary and postsecondary education.

Table 25

AVTS AND COMMUNITY COLLEGE ENROLLMENT BY CAREER AREA: POSTSECONDARY AND ADULT COMBINED

Career Area	84-85 No.	84-85 % Total Enroll.	87-88 No.	87-88 % Total Enroll.	% Change 1984-87
Agriculture	974	4.25	1,008	2.22	3
Mining	16	0.07	75	0.17	369
Construction	895	3.90	3,788	8.34	323
Manufacturing	403	1.76	1,273	2.80	216
Transp./Utilities	896	3.91	1,298	2.86	45
Retail	402	1.75	624	1.37	55
Financial/Ins.	475	2.07	363	0.80	-24
Business Services	8,510	37.10	16,829	37.07	98
Health/Ed/Soc. Serv	4,918	21.44	11,552	25.44	135
Legal Services	217	0.95	315	0.69	45
Other Services	4060	17.70	6,395	14.09	58
Public Admin.	981	4.28	1,735	3.82	77
Others	191	0.83	146	0.32	-24
Total	22,938		45,401		98
Mean	1,764		3,492		

Key Findings. Articulation agreements are important in enabling persons wishing to obtain training to move through the system without undue repetition of course work. The key findings included:

- Kansas has prepared the foundation upon which to develop a well-coordinated vocational-technical education system by establishing guidelines for articulation agreements. Attention must now focus upon encouraging more coordination across institutions to expand student access to advanced training with minimum course duplication.

- Coordination is critical at the secondary-postsecondary level as well as at all levels of postsecondary training.

- Pilot tech-prep programs are underway to broaden the scope of secondary vocational education by integrating technical, technological, and academic training.

- State leadership is needed to promote cooperation and coordination among secondary institutions who currently compete for students.

Conclusion

The vocational education schools in Kansas ranked access and cooperation with businesses as the most important issue facing them. This was followed by recruiting and attracting quality students and better funding for vocational education. For the future, these educators would like to see a better relationships with their business community. They also see the nature of the vocational student changing from the traditional student to the non-traditional adult student who seeks training to enter the work force or retraining to improve skills. Those seeking retraining to improve basic academic and/or technical skills will be served through customized training with increasing frequency. □

THE ROLE OF ADVISORY COMMITTEES IN VOCATIONAL EDUCATION

These committees are institutions' most import link to business and industry

Introduction

Every approved vocational-technical training program has a committee of technical advisors to provide input on issues pertaining to each program. In addition, some vocational education institutions also have an institution-wide advisory committee. These technical advisors are recruited from regional business and industry to meet with program faculty/instructors to ensure that programs train students to meet the needs of regional businesses. Advisory committee members should have considerable influence on vocational curriculum, since they were identified by vocational administrators and educators as the most important link between the business community and the educational institutions.[21] To determine if advisory committee members are providing this critical link, their role in advising vocational programs was evaluated.

Procedures

To determine the role and impact of advisory committees on vocational and technical training programs offered in the State of Kansas, a survey was sent to a randomly selected sample of 325 advisory committee members. Surveys were returned by 116 committee members for a 36 percent response rate.

Results

Organization and Role of Advisory Committees

Program advisory committee members are selected from persons employed in the industry in which program graduates seek employment. Committee members are generally nominated by one of four sources: current advisory committee members, school administrators, program faculty/instructors, or business and industry. About 50 percent of the committee members surveyed were nominated by faculty. Over half of the advisory committee members reported that their committee met either quarterly or semi-annually, with less than 9 percent meeting annually.

To determine major areas of responsibility, committee members were asked to rate their committee's current level of responsibility in several areas. The majority reported having some to considerable responsibility in the following areas: course/program change, course/program design, course/program review, suggest new equipment, and course/program evaluation. The majority reported having little or no responsibility for equipment fund raising, faculty evaluation, or observing teaching in progress. Most would like to see their level of responsibility increase in most areas except equipment fund raising, faculty evaluation, and observing teaching. Most wanted little or no responsibility in those three areas.

Members were asked to rate their current level of influence on decisions pertaining to several aspects of the programs they advised (Table 26). The strongest area of influence was in type of courses/programs offered. However, 18 percent reported they had little or no influence. When asked to rate the amount of influence on individual course and program content, 37 percent reported having considerable or full influence, while 29 percent reported they had little or no influence. Forty percent of the committee members reported they have little or no influence in determining equipment needs.

When asked what they think their level of influence should be in the future, the trend was toward considerable influence in most areas. The majority believe their role should be increased so they have considerable influence in courses or programs offered, program content, job placement, and equipment purchase. They also indicated that they could assist in student and faculty recruitment.

The next area of concern in the survey dealt with the current level of involvement in equipment decisions and course and program content. Thirty-two percent of program advisory committee members reported that they review more than 50 percent of all new equipment proposals (Table 27). Almost 30 percent reported they review less

than 50 percent of the new equipment proposals, and an additional 30 percent review none. New equipment proposals are rarely initiated by committee members, and committees rarely raise funds for equipment. Course/program changes are often not reviewed by advisory committees. Over half reported they did not review a majority of the proposed changes. Course/program changes were also rarely initiated by committees. Thus, committees initiated or reviewed less than half of all equipment proposals and course/program changes, but reported that their recommendations, when given, were often implemented.

Sixty-four percent of all members reported their level of involvement in program activities was about right, while 33 percent said they had too little involvement (Table 28). Community college program advisors were less satisfied with their level of involvement than AVTS advisors.

Fifty-nine percent of respondents would like to see the role of their committee increased, while 40 percent would like to see involvement stay the same (Table 29). In addition, many committee members commented that they felt their committee existed merely to fulfill a requirement. Many respondents commented that business and industry should become more involved as program advisors.

Quality of Programs

Advisory committee members evaluated the quality of the program they advised on several dimensions. Most rated the content of their program's courses and training as good (Table 30). Nineteen percent of community college committee members felt courses and training needed improvement. Instructors were rated good by the majority of members surveyed.

Adequacy of equipment was an issue that was very important to business and industry and to vocational institution administrators. Advisory committee members also reported that it was very important to train on the most technically advanced equipment. Over 75 percent of all members surveyed reported the equipment used by the program they advised was good or adequate. Again, a sizeable proportion (22 percent) of community college members said equipment needed improvement.

Quality of Students

Committee members were asked if students should be evaluated on their skill or competency level with business and industry participating in developing the standards. Ninety-two percent of the respondents favored business and industry's participation in the setting of standards. Seventy five percent of members are at least satisfied or very satisfied with the skill level of students completing the programs they advise, and only 17.4 percent were dissatisfied or very dissatisfied. When asked if committee members would hire a graduate of the program they advise, 89 percent responded yes.

To determine exactly what deficiencies exiting students have, committee members were asked to rate the degree of improvement needed in many areas. A substantial percentage (24 percent) reported no improvement needed in technical skills, while a similar percentage reported graduates need considerable improvement in writing (28 percent), listening and oral communication (22 percent), problem solving (21 percent), goal setting and motivation (29 percent), organizational effectiveness and leadership skills (22 percent), and work attitudes (25 percent). These results indicate that vocational education institutions face considerable challenges in providing students with job-related skills that go beyond technical skill training.

Summary

Program advisory committees perform a critical function in the vocational education system. These committees are the most important link that institutions have to business and industry. Key findings from the survey of committee members are:

1. Program advisory committee members are utilized primarily to review program and equipment needs. Most reported they have some or considerable influence in these areas.

2. Even though oversight of programs was reportedly their primary function, committees often do not review program changes and equipment proposals.

3. Committees would like to be utilized more effectively. They would like to be more involved and have more responsibility and influence in program design, review, and change and in equipment decisions.

4. Quality of instructors and programs was generally rated good, although 19 percent of community college

members reported that programs needed improvement.

5. Almost all committee members (87 percent) believe training should occur on the most technically advanced equipment. Over 75 percent rated training equipment adequate to good. Twenty- two percent of community college members said equipment needed improvement.

6. Advisory committees strongly favor competency-based student evaluation, with business and industry participation in defining competency standards.

7. Students exiting programs were described as having some deficiencies in technical, basic, academic, and other work- related skills (e.g., teamwork, problem solving, etc.).

8. Programs were rated as generally accessible in geographic and scheduling terms. Accessibility must be maintained, since employee access to retraining will be important over the next three to five years. Retraining needs will be driven by the substantial impact of technological change. □

Table 26

CURRENT LEVEL OF ADVISORY COMMITTEE INFLUENCE
(shown as percentage)

Area	Full or Considerable	Some	Litte or None	Don't Know
Course/Program Offerings	39	38	18	5
Program Content	37	31	29	4
Faculty Recruitment	6	11	67	16
Student Recruitment	10	29	53	8
Job Placement	21	34	39	5
Equipment Purchase	28	26	40	5

Table 27

DEGREE OF UTILIZATION OF ADVISORY COMMITTEES
(Shown as percentage)

	100%	>50%	<50%	None	Don't Know
Equipment Proposals Reviewed	10	25	29.5	29.5	9
Equipment Proposals Initiated	1	13	41	34	11
Equipment Funds Raised	1	2	17	72	9
Proposed Course Change Reviewed	15	27	38	15	5
Proposed Course Change Initiated	0	15	54	23	8
Committee Recomendations Followed or Implemented	5	45	31	4	15

Table 28

INVOLVEMENT OF ADVISORY COMMITTEE IN PROGRAM ACTIVITIES
(shown as percentage)

Involvement	Comm. Colleges	AVTS	All
Too Little	42	18	33
About Right	57	75	64
Too Active	1	7	3
Don't Know	0	0	0

Table 29

SEE A CHANGING ROLE FOR ADVISORY COMMITTEE
(shown as percentage)

	Comm. Colleges	AVTS	All
Greatly Decreased	0	2	1
Slightly Decreased	0	0	0
Stay the Same	35	48	40
Slightly Increased	45	48	46
Greatly Increased	20	2	13

Table 30

CONTENT OF COURSES/TRAINING OFFERED
(shown as percentage)

Rating Scale	Comm. Colleges	AVTS	All
Very Poor	4	0	2.5
Needs Improvement	19	9	15.5
Adequate	21	18	20
Good	50	73	59
Don't Know	6	0	3

THE JOB TRAINING PARTNERSHIP ACT

The competitiveness of Kansas depends on a strong economic development/ workforce development link

Introduction

The federal Job Training Partnership Act (JTPA) has been designed to provide employment assistance to the economically disadvantaged and the unemployed. Its primary goal is to educate and train the disadvantaged and unemployed for productive participation in the work force. Because the pool from which business and industry draws a significant portion of labor will grow slowly in the 1990's, JTPA will play an increasingly important role as states utilize all resources available to prepare the disadvantaged to meet business and industry work force requirements. Unfortunately, there are many disparities between the present educational and vocational condition of the disadvantaged and the projected needs of business and industry. Nevertheless, today's disadvantaged can overcome barriers to employment through education and training to become tomorrow's work force.

To determine how JTPA contributes to work force training and economic development in Kansas, two issues were examined: 1. The extent to which JTPA emphasizes short-term versus long- term placement of trainees - in short the extent to which JTPA invests in human capital; 2. How JTPA is coordinated with the rest of the work force training system in the state.

JTPA Background

JTPA was started in 1982. In establishing JTPA, Congress's intent was to invest in human capital and to increase employment opportunities for disadvantaged groups. States were given primary responsibility for managing the funds and services allocated and outlined in the act. Federal involvement was limited to evaluation of states' programs.[22] This approach provides states with the opportunity to use federal funds to achieve state economic development and human capital objectives. JTPA funds can be used by each SDA for remedial education, on-the-job training (OJT), customized training, classroom training (CRT), coordination projects with other social, training and education services, and a variety of special projects.

Procedures

Information concerning the state's utilization of JTPA funds was obtained through interviews with officials in each service delivery area (SDA) in Kansas, as well as an examination of Kansas state publications. Training and placement data were collected from each SDA and from the state Departments of Human Resources, Education, and Commerce. Communication with persons in other states, at the National Alliance of Business, and the National Governor's Association, as well as a literature search provided information concerning JTPA administration in other states. State overview reports were examined to collect data from SDAs outside of Kansas.

Findings

Short-Term vs. Long-Term Employment Goals

Federal evaluation of state JTPA programs have emphasized the short-term goal of job placement. This emphasis obscured the need to consider long-term goals such as earnings and long term employment opportunities. Because of the changes occurring in the work place, jobs in the 1990's that will offer long- term employment and advancement opportunities are those that will require higher skill levels. Those that hold jobs will need to have good technical skills, basic academic skills (reading, computation, communication, problem solving, etc.), and the motivation and ability to continue to learn and be trained. Thus, the strategy for long term gain in JTPA participation should be an emphasis on basic academic skills and the development of both academic and technical skill competencies.

Because of changes occurring in demographics, the labor force of the 1990's will have to rely more heavily upon the most disadvantaged portion of the labor force (e.g., minorities, women, hard core unemployed). These groups,

more than other groups, need training in basic academic skills as well as technical skills. JTPA, as part of the state's job training system, needs to focus upon and train those not served by other segments of the system - the economically disadvantaged and unemployed. JTPA should focus upon providing the economically disadvantaged with basic academic and technical skills. Once competency has been demonstrated, JTPA participants can then be referred to other parts of the training system and to employers for further training (e.g., classroom training at community colleges and AVTS' and on-the-job training)

On-the-Job Training. Most on-the-job training served adults who were not on welfare. This suggests that on-the-job training is a short term mechanism that focuses on preparing those who are essentially job ready.

Classroom Training. Classroom training is the largest segment of JTPA funded training in Kansas. There is some feeling among JTPA administrators that educational services - not JTPA - should be addressing the problems associated with the disadvantaged. They favor the short term emphasis that would use JTPA to put people to work, not through school. Because putting people to work can no longer be separated from educating people, Kansas is presently involved in the Project of the States pilot program, which is an encouraging step toward work force improvement. Because those with the most barriers to employment often possess the least number of skills, JTPA should focus on developing competencies so that employers are assured of a labor force which possesses an adequate level of basic academic and vocational skills. JTPA can insure that every participant has achieved adequate reading, computation, reasoning, and technical skills if the program uses demonstrated performance standards, not attendance records or placement quotas.

SDAs I and V (both administered by the state) are making a concerted effort to use competency-based training to improve the skill level of JTPA clients. SDAs II and V are using the educational system to provide remedial types of education for their clients. More than just a training provider, the system is used to link remedial education with practical job skills in these two SDAs.

Competency-Based Training

Competency-based training is an important element in guaranteeing that the work force is prepared to perform the jobs required by business and industry, because such training focuses on outcome rather than on process. The Kansas Department of Education is moving vocational and technical training institutions toward competency-based training and JTPA sponsored training needs to be included in this movement. One way that Kansas is moving JTPA in the direction of competency-based training is through participation in the Project of the States. The Project of the States is a national demonstration project conducted by the Center for Remediation Design and the Center for Human Resources at Brandeis University in association with select state and local Job Training Partnership Act entities.[23] Participating states include California, Connecticut, Kansas, Michigan, Nebraska, Oregon, and Washington. The Project of the States has four goals: 1. To develop criterion-referenced basic skills assessment tools and curriculum management system, using the criteria of the work place, in collaboration with the Comprehensive Adult Student Assessment System (CASAS); 2. To build and enhance the capacity of the state and local staff to provide training and technical assistance; 3. To restructure the way services are delivered to youth and adults in JTPA service delivery areas; and 4. To establish partnerships between employment and training, education and welfare which result in common identification of indicators of employability and common assessment approaches.

Development and implementation of assessment strategies which define an integrated approach to instruction between work-related skills and basic skills are needed if labor market needs are to be met. The Project of the States is based upon the belief that traditional basic skill assessment tools do not work in assessing functional literacy, because they focus on processes not outcome. The purpose of this demonstration is to develop appropriate assessment tools and a curriculum management system which can be used by the employment and training system to restructure service delivery. The program focuses upon those basic skills needed by the "generic worker," i.e., the skills needed by all entry level workers which are similar across various industries but within a specific job market.

Interagency Coordination

JTPA should not be regarded as a self-contained program but as part of the state's overall strategy to prepare workers for skilled positions. Thus, interagency coordination is needed to ensure that JTPA is part of the state's

human capital strategy and to leverage state funds to accomplish state objectives.

Coordination With KIT. New and expanding firms are eligible for KIT grants to fund training. To encourage these firms to hire disadvantaged workers, JTPA funds can be added to KIT grants. JTPA can subsidize 50 percent of a client's salary for up to six months of on-the-job (OTJ) training. The company gains financially and the disadvantaged gain access to jobs in new and expanding business, where job retention and advancement may be more likely. All five of the SDAs in Kansas reported some JTPA/KIT coordination in the past. The limited involvement of JTPA (through OJT) with new business in Kansas may in large part be due to the overwhelming task of coordinating the increasing number of Kansas Industrial Training (KIT) contracts. Kansas employs one person to perform the linkage between economic development and JTPA, while other states employ entire offices of personnel to perform this coordination.

To summarize, the overwhelming success of the KIT program has overshadowed the importance of involving the disadvantaged in Kansas as part of an economic development plan. JTPA was first designed to aid in the placement of the disadvantaged. It is therefore understandable that Kansas' SDAs emphasize placement. Most of the effort in every SDA is directed towards arranging on- the-job training for clients. The effect has been that in order to meet the needs of new and expanding businesses, KIT assists those who are job ready or nearly so; in order to link into economic development JTPA has provided assistance to the same population. The result has been that the hard-core disadvantaged are being placed in less attractive positions, or are not placed at all. Federal amendments to the JTPA may mandate a narrower targeting of JTPA clients as well as more competency-based training and educational services.

Other Government Agency Coordination. Section 102(a)(2) of the Job Training Partnership Act requires that "representatives of educational agencies (representative of all educational agencies in the service delivery area)..." must serve on the Private Industry Council for the particular SDA. While coordination occurs throughout the state, SDAs I and V, those administered by KDHR, have a higher degree of coordination between JTPA and other social service, training, and placement programs than in the other three SDAs. SDAs I and V also coordinate efforts and services more often with the Kansas Department of Education, as well as the Kansas Department of Commerce. In an effort to reduce service overlap and to create a "one-stop" situation for the client, many states are encouraging and sometimes mandating coordination between education, human resources, labor, and commerce sections of government and private services and funds.

Educational Institution Coordination. JTPA coordination with community colleges and AVTS' is important. The purpose of JTPA is to meet the training needs of the disadvantaged. More and more, those needs include the correction of basic educational deficiencies. By using community colleges and AVTS', these needs can be met. These schools are designed to provide remedial and occupational education. Rather than "reinvent the wheel," as one SDA official put it, JTPA staff should make use of these services to help the disadvantaged populations. Coordination with educational institutions opens avenues for advancement by showing clients how to develop a real career path through more advanced training opportunities.

Assessment and Tracking

Because there is a serious shortage of client tracking data in Kansas, it is difficult to determine if JTPA participants are indeed being placed in long- lasting jobs. While there is an abundance of client information available on JTPA participants, little is collected on whether employment of participants was a result of JTPA's intervention or what specific types of jobs were obtained following completion of training. All JTPA staff interviewed indicated that data collection, exchange and coordination by the various Kansas agencies involved will need to improve before placement and retention statistics are known.

Trends in Other States

The situation of JTPA in other states is varied and complex, although general trends are emerging. Almost all the states which were studied recognize the importance and necessity of incorporating disadvantaged populations into the work force. Most states are beginning to understand and address the need to assist the disadvantaged segments of the population through education and competency-based programming. Whether federal dollars are used throughout or not, most states have instigated some type of client-based, intake-to-placement approach. In other words, the client has the opportunity to proceed from initial system intake

and assessment to employment without constantly re- entering the system at each step. Most states are beginning to encourage, if not mandate, coordination between service providers to reduce the amount of service and funding overlap. Finally, all the states which were studied have developed written plans for economic development which address the strengths and weakness of state resources, including human resources.

Implications

Kansas' administration of JTPA is successful as indicated by performance reports which consistently exceed federal standards. However, discrepancies were observed between the various approaches the SDAs took in providing services; between the needs of business and the skill and education level of Kansas' disadvantaged; between the state trend towards placement and the federal trend towards preparation; and between the coordination of state as opposed to local services. If Kansas is to remain a competitive contender for its share of business and industry, economic development and work force development must be linked. The disadvantaged must be a viable part of the state's work force because they will be an important source of new employees for business and industry in the near future. If Kansas is to gain cost efficiency in delivery of training and services, it must better coordinate the efforts of the wide variety of training service providers available to it. □

INNOVATIVE PROGRAMS IN OTHER STATES

Leadership at the state-level is a key element in the development of efficient and innovative training programs

An analysis of the vocational technical training system in Kansas would not be complete without some comparison to what other states are doing. Therefore, several states were targeted to help identify options for Kansas policy, and to gather information on work force training and retraining programs. States visited were: Illinois, Michigan, California, Missouri, Nebraska and Oklahoma.

Innovative Funding Approaches

California. The Employment Training Panel (ETP) in California is a program that provides funding for retraining and is financed by unemployment insurance. ETP represents the first use of unemployment insurance funds for a purpose other than providing benefits to the unemployed. This program is different from other government retraining efforts in that it primarily focuses on experienced workers who are either unemployed or soon-to-be-displaced, rather than on training the hard-core unemployed and new entrants to the work force. Panel membership represents labor and management and has two charges: 1) to reduce unemployment insurance costs by providing funds to retrain currently employed workers who are threatened by displacement and to train employment recipients or recent "exhaustees" for existing jobs; and 2) to foster economic development by helping businesses train workers in the skills demanded by new technologies.

Several criteria exist for participation in the program. Employers are eligible if they pay the Employment Training Tax of their state Unemployment Insurance and employ persons covered by the Unemployment Insurance system. To qualify for training, new applicants for employment must be receiving unemployment insurance or have exhausted unemployment insurance benefits and remain unemployed. Current employees must need retraining to cope with technological changes in work environment, introduction of new work methods, required changes in job duties, or possible layoff should training not be instituted.

Illinois. Illinois has differential funding for vocational education courses. The community colleges' eight cost centers include: 1) baccalaureate transfer courses; 2) technology; 3) business; 4) health; 5) remedial; 6) general studies; 7) adult basic education; and 8) adult secondary education. The Illinois Board of Community Colleges calculates the actual average cost of producing a credit hour in each of the cost centers. If it costs more to produce a credit hour in technology, then there is a higher credit hour grant from the state. The actual costs of each program are used in determining the credit hour reimbursement. There is a two year lag in this process, because the determination of the credit hour cost is quite complicated and involves considerable time.

Illinois also has an economic development grant program in which the state provides $3 million to the community colleges for economic development purposes. The program funds business assistance centers to provide services for business and industry. Each recipient community college creates a business assistance center and staffs it with at least one person. Each community college is awarded a minimum grant of $30,000. Additional funds are dependent upon how many credit hours are generated in vocational education courses. The average college received approximately $60,000 per year.

Michigan. Michigan has a new program called the Michigan Training Initiative Fund (MTIF) that started operation in 1989. This program assists firms with training, but goes beyond the traditional manufacturing base that historically has been the target of training programs in Michigan. The program does not target a specific industry; service companies as well as manufacturing companies may participate. The intent is to use state funds as an incentive for companies to invest in training. MTIF uses state funds to cover the interest on bank loans that are used for company training programs. The state will pay up to the prime rate for no more than five years. This program uses an interest subsidy rather than grants because the state wants to have employers view training as a standard cost of business that the company should pay for. Moreover, the state does not have sufficient funding to give grants to firms

in all Michigan industries. The long-term objective is to have training be part of the regular budget process of firms.

Innovative Customized Training Efforts

Michigan. Quik Start is a Michigan Department of Education program that uses Carl Perkins funds for a job training program. This program is operated separately from other departments, but there is close cooperation with state- funded training programs. A company will contact the business training office at a local community college. If the college cannot help the company, the college will refer them to a different community college or possibly the Quik Start program in Lansing. Eighty percent of the Quik Start funds go to community colleges. It is estimate that Quik Start funds less than 20 percent of the community colleges customized training. Most of the training in Michigan is paid for by the companies.

Missouri. The most interesting aspect of Missouri's Customized Training program is the amount of money that Missouri is spending on customized training. Based on interviews with staff at the Department of Elementary and Secondary Education and the Department of Economic Development, which jointly administer Missouri's Customized Training Program, in the upcoming year Missouri has budgeted $5 million for customized on-the-job training through the Department of Economic Development and another $5 million for classroom skill training through the Department of Elementary and Secondary Education (this does not include JTPA money for on-the-job training or local PIC money). These agencies subcontract to each other if a business' customized program utilizes both aspects of customized training. A company is eligible for Missouri's Customized Training Program if: 1) the business is new or expanding and creating new jobs in Missouri; 2) the business needs to retrain existing employees as a result of substantial new capital investment; and 3) the business needs to retrain existing employees without substantial new capital investment, but as a result of the introductions of new products or services or to upgrade quality and/or to improve productivity.

Oklahoma. The Training for Industry Program (TIP) in Oklahoma is a state- wide program that provides training for new/expanding industry. All training costs are paid by the state, as part of the state's effort to get business to locate in Oklahoma. TIP training provides both technical and basic skills training. Basic skills training is not general, rather it focuses upon actual reading and math required for the job. When management training is required, courses designed by private vendors are usually used.

Oklahoma's strength in their customized training program is in using vocational technical education as an incentive for businesses to locate in Oklahoma. Vocational education is part of the negotiation team for business recruitment. The vocational-technical system in Oklahoma can play any role in the employment picture - assessment, instruction, accessibility, and follow-up support. They are versatile.

For firms who do not qualify for the TIP program (not new or expanding), customized training is defined as industry specific training that is not open to general enrollment, with costs paid by the employer, not the employee. The state reimburses AVTS' $15 per class contact hour for each class offered under Industry Specific Training. The State Department of Vocational Technical Education uses money to provide AVTS' incentives for marketing Industry Specific Training. The state pays for one-half of the Industrial Coordinator's position at an AVTS if the school generates 600+ hours of industrial specific training. Industrial coordinators are trained and certified by the state to ensure good service to the business. Thus, 24 industrial coordinators are out in the field contacting business and recruiting customized training contracts.

Innovative and Integrated Information Systems

Michigan. On January 31, 1989, Michigan launched a pilot test of the Michigan Opportunity Card. The intent of the Opportunity Card is to make the training/education system user friendly. The Michigan Opportunity Card is a "smart" card, a wallet-sized plastic card embedded with a computer chip that stores and retrieves information. Information about a person's skill levels, employment history, aptitude test results, participation in previous programs, eligibility screening for funding and personal career goals is stored on the card. The card enables service providers to guide customers to the most appropriate programs services within the System.

A companion initiative to the Michigan Opportunity Card is the Automated Resource Directory. This directory provides easy access to information on a wide array of programs available in the job training/adult education area. The program will operate like an automatic

teller at a bank; it is actually an IBM compatible computer with information on a hard disk. Two systems will be placed in each county - one at a public location, such as a community college or JTPA office, and one at a private location, such as a shopping mall, drug store, or a union hall. The program directory will have information in four categories: 1) education; 2) job training; 3) job placement; and 4) supportive services.

Oklahoma. The Oklahoma State Department of Vocational Technical Education has a division called Supportive Services which provides data-based planning. They provide all schools with demographic data so they can provide training to fit the needs of their population and business in their area. The state also works with local community leaders, giving them demographic information and analysis of training required to help with local economic development problems and establish goals.

Innovative Curriculum Development Efforts

Illinois. Under a new Illinois plan called Education for Employment, the state will provide funding for vocational schools only if they offer programs in job areas where workers are needed. They have invited companies to look at curriculum and it has resulted in many obsolete courses being dropped.

Michigan. The Department of Education in Michigan is developing an innovative program to assess eligibility skills of high school graduates. Included will be such areas as the student's ability to solve problems, to work as a team member, or to have management skills. Ultimately, these assessments will be integrated into the Michigan Opportunity Card.

Oklahoma. The State of Oklahoma takes a strong leadership position in curriculum development. Their view is that teachers do not have the time to develop curriculum so the state has curriculum development staff working with industry experts to produce curriculum. Industry does the task analysis to identify the skills needed to do a job. The state staff then create the training materials (manuals, videos, tests, etc.). All training is competency- based, individualized, teacher facilitated-student centered, and media supported.

Interagency Coordination

Michigan. A Human Investment Fund was formed and its board appointed by the governor as a "joint venture of state agencies committed to integrating the state's job training and adult education programs into one coordinated system. The board has 14 members and includes the top person in each state agency with operational responsibilities in education or training. Thus, the Superintendent of Public Instruction, Director of the Department of Labor, and the Director of Social Services are members. There are also representatives from the SDA's, community colleges, and five business-labor-public members. A separate board above the Human Investment Fund does the technical work, while the fund board members operate at the policy level.

The board will be the driving force behind Michigan's efforts to coordinate and reshape the 70 job training and adult education programs to meet state policy objectives. The board is a strategic planning policy group; it does not operate programs. The group is chaired by the Director of the Office of Management and Budget, who reports directly to the Governor.

Conclusion

To summarize, several interesting ideas or concepts were obtained from visits to other states. While states take different approaches to meeting their work force training needs and developing an integrated delivery system, the element common to all innovative programs is that of leadership from the state. When the state is willing to try a new approach and back it with commitment - commitment through funding and commitment through high-level leadership - those approaches lead the way to innovation. While the states provided leadership, the programs often relied upon partnerships. The partnerships generated were partnerships between the private and public sectors, business and education, or management and labor. Working partnerships resulted in synergism, a cooperative action of discrete agencies such that the total effect is greater than the sum of the effects taken independently. □

POLICY OPTIONS FOR CONSIDERATION AT STATE AND LOCAL LEVELS

The future of the Kansas workforce depends on effective leadership at the state and local level

Basic Academic Skill Training

GOAL:

All students in postsecondary vocational-technical programs should acquire basic academic skills as well as technical skills.

POLICY OPTIONS:

1. Vocational-technical programs should integrate training of basic academic skills, such as reading, computation, communication, reasoning and problem solving, with technical skill training.

Rationale: The skills that employees must have are changing as the work place changes. Because the time it takes for half of a worker's skills to become obsolete is short (perhaps as short as one year), business and industry must have workers who are able and willing to learn new skills. However, many workers do not have the basic academic skills essential for acquiring more sophisticated technical skills needed to adapt to the demands of increasingly complex jobs. Employers want employees with a broad set of work place skills or at least a strong foundation of basics that enables them to learn on the job as technology and products change.

Foundations in basic academic skills should be formed at the elementary and secondary level. The importance of this for work force preparation has been abundantly documented by numerous surveys of job skill requirements and business work force needs. These surveys also document the serious deficiencies that currently exist in these areas in today's work force. State and national data clearly support the need for improved basic academic skill training. A 1989 national survey of small manufacturers conducted by the National Association of Manufacturers revealed that those surveyed were having difficulty with their employees' education and training in the following areas: ability of employees to understand math concepts (37 percent), ability to understand, read and write English (30 percent), ability to be trained in operations (25 percent), and ability to resolve problems independently (50 percent). A survey of Kansas business and industry conducted for this report revealed areas in which many firms reported employees need improvement: reading (43 percent of firms), writing (60 percent), computation (52 percent), listening and oral communication (72 percent), problem solving (70 percent), comprehension/understanding (60 percent), interpersonal relations (60 percent), teamwork (70 percent), goal- setting and personal motivation (79 percent), adaptability and flexibility (66 percent), work habits (77 percent). These results strongly support the need to integrate basic academic skill training with technical skill training.

Since 75 percent of the work force that will provide labor in the 1990's has already entered the work force, the problem extends beyond elementary- secondary education into postsecondary and adult education. If students enter the postsecondary level or adults re-enter the training system under prepared in basic academic skills, the vocational-technical programs must address the problem by incorporating training in basic academic skills in the technical skill training.

2. Students entering vocational-technical programs should be tested on basic academic skills at the time of entry and at the time of completion of their program. Certain predetermined competency levels should be demonstrated by students prior to entering a program and prior to obtaining a degree or certificate.

Rationale: About 80 percent of the institutions rated students' academic skill performance level as poor to fair upon entry in postsecondary vocational- technical programs and 54 percent rated them as only fair upon completion of programs. To ensure that instructors have students who are ready to learn, students must enter vocational-technical programs with certain prerequisite academic skills. To ensure that employers are hiring employees with reading, computational, communication, reasoning, and problem-solving skills, competency should be demonstrated before a degree or certificate is issued. By testing for and requiring basic academic skill competency for acceptance into and completion of vocational-technical pro-

grams, work force quality and adaptability will improve.

Requiring students to demonstrate competency in basic academic skills decreases the dichotomy between vocational and academic programs. High school teachers, counselors, students, and parents will recognize that vocational- technical training students must be better prepared. Requiring the students to be better prepared academically will also broaden their options for postsecondary training upon graduation from high school or at a later date when skill upgrading or career goals make re-entry into the educational or training system necessary.

3. Students who do not meet course or program prerequisites in basic academic skills, particularly reading, computing and communicating, should be placed in a remedial education program.

Rationale: Ninety-four percent of vocational education institutions offer remedial course work and 58 percent feel that students should be required to demonstrate minimum competency in basic academic skills for entry into programs. However, students who demonstrate deficiencies are strongly encouraged but not necessarily required to enroll in remedial programs. Deficiencies should be corrected before students begin training in vocational-technical programs.

AVTS' do not collect state funding for the time students spend in remedial training. The State Board of Education encourages remedial education at community colleges by allowing state reimbursement for up to 18 hours of remedial training per student. Because community colleges have a funding mechanism and academic disciplines to cover remedial training (e.g., English and math faculty), AVTS' should enroll their students in remedial courses at community colleges rather than setting up their own programs to minimize duplication of programs.

4. Adults in all Kansas communities should have access to open-entry/open- exit basic education in literacy, math, and communication.

Rationale: Adults already in the work force and those wanting to enter the work force are finding that skill requirements are increasing and that they must return for training to upgrade literacy, math and communication skills to obtain or retain jobs, or to obtain promotions. This trend will continue as technological changes and other changes in the work place force workers to adopt a strategy of life-long learning. Basic adult education in Kansas is grossly under funded, with one million dollars in federal funds and $50,000 from the state. The support needs to be increased to meet the literacy and basic academic skill needs of the adult population.

Secondary Technical Skill Training

GOAL:

Secondary vocational-technical students should learn the principles of technology, applied math, applied science, etc. in preparation for occupational training at the postsecondary level.

POLICY OPTIONS:

1. Technical Preparation Programs should be established and funded in secondary schools to provide secondary vocational-technical students with more rigorous training in principles of technology, applied math, and applied science.

Rationale: Tech-prep programs do not replace existing vocational education programs, but rather broaden the scope of vocational education by preparing students in at least one mechanical, engineering, industrial, or practical field; providing students with a high level of competence in mathematics, science, and communication through applied courses in these areas; and making students more employable. Broadening vocational-technical training at the secondary level to include basic academic skills (math, communication, etc.) provides students with skills necessary to survive in an age where rapid technological and product changes make workers skills obsolete quickly. Thus, it makes sense to provide 17 year old students with skills that will enable them to learn new technical skills quickly. Teaching narrow, job-specific skills introduces the risk that those skills will be obsolete by the time the student is 20 years old. For example, a program in North Carolina shows students the relationship between printing technologies and math and science skills. Using an offset printing press requires mathematical computations to align layers of images printed, and the composition of inks used involves chemistry. Students must also figure how many sheets of a certain size of paper can be cut from a larger sheet and must calculate the cost per page. A research project on the history and production of paper teaches them scientific information and how to develop that information into a good written form.

Technical preparation programs may soon have federal support through amendments to the Carl D. Perkins Vocational Education Act. The state has one pilot program underway that should be evaluated and expanded if it broadens the scope of training as described above. Implementation of programs should be supported by the Department of Education in the form of curriculum development, teacher training, equipment, and materials.

2. Technical Preparation programs should be coordinated with postsecondary technical programs at community colleges or AVTS' by providing acceptance of credits or advanced placement in programs.

Rationale: Tech prep programs should link the final two years of secondary education with the first two years of postsecondary education, giving students an option to obtain a two-year degree or certificate. Jobs of the future will require workers at all levels to be engaged in lifelong learning. While it is unrealistic to expect everyone to graduate from high school and then complete two to four years of postsecondary education in the traditional uninterrupted sequence, the educational system must encourage people to enter and leave according to their needs. The system must be flexible without compromising academic standards.

At one tech-prep program in North Carolina, the public schools, local community college and business community joined together to prepare students. The curricula were planned jointly by the public school system and the community college, with heavy input from the business sector. This approach makes secondary training a part of the advanced technical training system, and makes it easier for students to move toward more advanced training as the need arises.

Postsecondary Technological and Technical Skill Training

GOAL:

All students in postsecondary vocational-technical programs should demonstrate competency in technical skills and underlying principles of technology specified by business as appropriate for the particular occupation.

POLICY OPTIONS:

1. Technical courses/programs should be based upon the demonstration of competency in the principles of technology underlying a discipline or field and competency in technical skills, rather than the accumulation of credit hours or clock hours.

Rationale: The State Board of Education favors performance-based curricula and evaluation systems (competency-based training). The Department of Education has developed occupational profiles for vocational-technical programs. These profiles list skills needed for each occupation and encourages schools to use the profiles to guide instruction. This is an important step in the direction of competency-based curricula. Training and evaluation based upon performance of job skills are more responsive to business needs and produces students who are job ready.

Because rapid technological changes render workers' skills obsolete within a few years, programs should provide students with an understanding of principles of technology underlying a discipline or field as well as providing specific technical skills. Training that is directed toward a broader discipline or field rather than toward narrowly focused job-specific skills produces a work force that is more adaptable to technological- and market- induced changes in job requirements. Programs must prepare students who are ready to do jobs today and who can adapt to job requirements in the future.

While the Department of Education can encourage technical education institutions to move toward competency-based training, a change in state funding methods is needed before training can be truly competency-based. As long as state funding is based upon student clock hours at AVTS', training cannot be competency-based without creating financial difficulty for AVTS'. If a student finishes a program early or stops attending, the AVTS receives less state support, even though the cost of offering the program remains constant. Competency-based training should allow for more individualized instruction where students progress through and complete programs based upon demonstration of skills, with funding also tied to demonstration of skills. Thus, the exemplary student should be able to complete training in less time than the average student.

2. Competencies for each program/course should be based upon skills identified by business and industry that are needed today, as well as upon the development of capacities that will enable students to adapt both in the job and among similar jobs over time.