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ABSTRACT

A small-sample exploratory investigation is reported that attempted to develop some initial insights regarding the uses of manpower and labor market data in new planning, the needs for new types and forms of data, the nature of program changes generated, and the needs for further research and development. Planning models and program change data were solicited from 76 selected institutions through a structured personal letter and a seven-point Likert scale with 24 possible policy initiatives. Seven institutions were then selected as representative of varied uses of labor market data in planning. Analyses of these institutions' data uses, program changes, and planning models constitute a section of this report entitled Policy Initiatives Utilizing Labor Market Data. That section is preceded by a section called Institutional Attributes containing statistical profiles of the several types of institutions in the sample and which tests the hypothesis that these schools are representative of most American colleges and universities. The bulk of the report is a section called Site Visits, followed by a section entitled Site Visit Theme Analysis. Site visits are reported for Alma College, Central Michigan University, Colorado Mountain College, University of Oregon, St. Cloud University, Washington Technical Institute, and Willamette University. Appended are excerpts from the Minnesota Higher Education Coordinating Board, the Montana Commission of Postsecondary Education, and the University of Wisconsin system. (LBH)

FINAL REPORT

Utilization of Manpower and Labor Market Data in College and University Planning: An Exploratory Study

National Institute of Education Project Number

G-77-0032

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INTRODUCTION

Recent developments in higher education give rise to a different and more intensive type of planning in some institutions. Significant in this new thrust is the utilization of expanded manpower and labor market data in decision making processes related to program development.

A confluence of developments generates the new planning. Demands by corporations for greater specificity in training is resulting in attempts by liberal arts colleges and departments to develop programs with labor market currency. Students, generally, are becoming more career-minded (Astin, 1975). Lower birth rates in the 1960's reduced demand for teachers in the 1970's and education schools and departments are diversifying offerings to include training for noncredentialed markets. This same demographic factor will constrict demand from the basic demand sector of colleges and universities as the smaller high school graduating classes begin to come on line in 1978. Colleges and universities are gearing up for this change by planning to tap new markets, e.g., older students, part-time students, minorities, returning students, deferred admissions. These developments are transpiring in a time when the children from the very large families of the 1950's are beginning to graduate from college and are attempting to find labor market participation in an economy which is less expansionary than in previous years.

Planning as utilized in some institutions has potential for increasing operations efficiency and lessening the anxieties and frustrations of students and graduates which are related to labor market participation but the planning itself must be highly efficient. This is a challenge when forecasting is involved as it is in the new planning models. The quality of both the manpower and labor market data used in such planning, and its applications, thus becomes central.

This was a small sample exploratory investigation which attempted to develop some initial insights regarding the uses of manpower and labor market data in the new planning, the needs for new types and forms of data, the nature of program changes generated and the needs for further research and development.

Objectives

The objectives of the study were as follows:

1. To identify and describe the nature and extent of uses of manpower and labor market data in a small sample of institutions characterized by advanced planning operations
2. To identify and describe program changes generated by uses of such data
3. To identify expressed needs for new types and forms of data
4. To identify some needs and directions for further research and development in this area.

Previous Research

Halstead (1974), Finch and Smith (1974) and Kincenski and Soss (1974) all developed models and reference data representative of research useful in state and area planning in higher education. Basic model elements in these and similar studies are demand

indices based on least squares analysis of market behavior over time frames and multiplier variables for linear forecasting. Meeth (1974) completed research on methods to increase productivity and operations efficiency in small liberal arts colleges and developed models from the resulting data for use by colleges in planning operations. The models utilize applications of induced course load matrices, student flow and program productivity indices over a time frame. The research was completed under the auspices of the Council for the Advancement of Small Colleges. A basic assumption of the models is that demand behavior responds to manpower and labor market information.

The Bureau of Labor Statistics (1975) and Radner, Miller, Atkins and Balderston (1975) completed demand and supply research representative of efforts in this area. The latter team developed stochastic forecasting models useful for area planning where demographic changes are rapid. Authors of both studies raised questions about the nature and extent of uses of manpower and labor market data and models at the institutional level, noting that the flow of data was largely a priori in nature with less than enough known about how institutions were using it to plan programs or counsel students or what new data were needed. The Carnegie Commission on Higher Education sponsored the latter study and the authors emphasized strongly the need for expanded market research and planning at the institutional level and expanded uses of data in improved planning of aspects of internal resource use.

The present study seemed to constitute a logical step in efforts to promote such an expansion. Hopefully, it can stimulate

and offer direction for further research and information flow which, theoretically, will enable institutions to develop and expand capabilities in this area.

PROCEDURES

A sample of 76 institutions was generated through a nominations procedure designed to identify colleges and universities utilizing advanced planning and making good use of labor market data in the process. The nominating panel included experts and specialists from the Professional Institute of the American Management Association, The Society for College and University Planning, The Council for the Advancement of Small Colleges and the Western Interstate Commission on Higher Education.

Planning models were solicited from the institutions together with data on institutional attributes, changes generated by the program and needs for new labor market data to improve the program. Planning models consisted of descriptions of the planning process, manuals developed for internal use to guide the planning and data displays generated by the planning process. Program change data included lists of programs initiated, programs phased out and programs expanded. Planners at the schools were asked to suggest new knowledge needed to enhance their programs.

The data and materials were solicited through a structured personal letter and a seven point Likert scale developed and tested for face and content validity with the expert panel described above. The scale included 24 possible policy initiatives for planning of this sort and officials at the schools, usually the chief planner or some other presidential designate, were asked to rate the amount

of emphasis accorded a given policy initiative and to rate how valuable they had found this initiative to be in their planning efforts.

Seven institutions were selected after the data had been analyzed as representative of the varied uses of labor market data in planning and as representatives of excellent uses of this data. These institutions were visited and observed with interviews carried out with key persons in the planning operations.

Aggregated small sample statistics were used to describe data uses, program changes and planning models. These analyses constitute a section of the report entitled Policy Initiatives Utilizing Labor Market Data. This section is preceded by a section which contains statistical profiles of the several types of institutions in the sample and which tests the hypothesis that these schools are representative of most American colleges and universities. This section is entitled Institutional Attributes. The bulk of the report is given over to a section entitled Site Visits. This is followed by a section entitled Site Visit Theme Analysis and a final section entitled Summary and Needs for Further Study.

FINDINGS

Institutional Attributes

One hundred and ten colleges and universities were nominated for the study. Eighty-eight had made a concerted effort to deal with the challenges in question over a period of three or more years, and 76 of these were able to supply complete sets of data requested. The sample included 12 public four-year, 23 public two-year, 36 private four-year and 5 private two-year institutions.

Means and standard deviations were computed for enrollment, faculty-student ratios, number of programs and number of departments. These together with a distribution of accrediting associations were used to describe the typical institution in a sample. A sixth piece of data was also included in the analyses: A composite SAT score which was developed by equating ACT scores to SAT scores where applicable, through the use of a table of concordance developed by Chase and Barritt (1966) and by combining SAT-V and SAT-M scores into a composite according to procedures developed by the College Entrance Examination Board (1975).

The typical public four-year college in the sample enrolled 7822 students, had a faculty/student ratio of 17:1, an average SAT composite of 509 and was accredited by the North Central Association of Colleges and Schools. They were all regional universities serving a defined service area of their states. Most were adding general programs and reducing the scale of operations in teacher education. The typical school operated 19 departments and 46 degree programs.

The typical private four-year college was a prototype of the small liberal arts college. It enrolled 1315 students, had a SAT composite of 501, and operated 15 departments and 19 degree programs. The typical school was accredited by the North Central Association.

Public two-year colleges had a mean enrollment of 8381 students and accreditation leadership was shared by the North Central Association and the Southern Association of Schools and Colleges. These schools as a group had a faculty/student ratio of 22:1 and operated 17 departments and 46 degree programs. SAT and ACT scores for the most part were not included for these institutions and were not analyzed.

Private two-year colleges enrolled 1540 students, had a faculty/student ratio of 11:1, a SAT composite of 491 and operated 13 departments and 9 degree programs. Most emphasized transfer programs, which accounts, perhaps, for the lower than usual number of degree programs.

The profiles that emerged from these analyses are those of a typical regional university, small liberal arts college, private junior college and somewhat large community college. The faculty/student ratios, and number of departments and degree programs are also typical, and the quality of students enrolled seems slightly high according to national means for SAT composites. This index was compiled on 1975 entering freshmen data (College Entrance Examination Board, 1975, pp. 31-32) and is probably lower at this writing since many schools have experienced slight declines on national test score averages.

Policy Initiatives Utilizing Labor Market Data

The presidents of the institutions in the sample, or their designates (mostly the latter) completed a rating scale which requested an assessment of the degree of emphasis given to various operations components (policy initiatives) considered potentially valuable by the panel of experts on the subject. A second scale requested a rating of the value these initiatives proved to have for the institutions. Both scales provided for ratings of 1-7 and had a mean of 4.0. The scales were tested for face and content validity by use of the panel which consisted of the officials from organizations and agencies described on page 4. Theoretically, labor market data can be pressed into service in a variety of ways

in planning: expansion of high demand programs, tapping new markets, revision of the curriculum, and more.

Table 1 contains the ratings and standard deviations for both emphasis and value accorded the 20 of the 24 policy initiatives the sample used. Four initiatives were not used by all institutions in the sample and were not included in the analyses. Seventeen of the 20 initiatives had rating scores at or above the mean of the emphasis rating scale. The initiatives suggested by the expert panel ranged from expansion of traditional efforts such as more admissions contacts and academic programs to the new techniques of market analysis and planning from labor market data. The standard deviations in the table indicate a moderate amount of variation across all items.

Policy initiatives receiving the highest ratings were expansions of traditional efforts. A great deal of emphasis had been placed on using labor market data in expanding business, health sciences and other programs and on providing more internship opportunities for these and other programs. The institutions had increased the staff and scope of placement operations, studied the skills demanded of graduates and kept tabs on their placement rates. They had utilized federal labor market data and data from local labor market surveys in their program planning but had made only a limited use of state labor market data, possibly because its availability was on a limited basis. The institutions also stepped up their contacts with prospective students and conducted studies of projections of student markets generally and the possibilities of new student markets: older students, women and minorities. Finch and Smith (1974) discuss these markets as viable alternatives to

Table 1

Means and Standard Deviations of Emphasis and Value Ratings of Policy Initiatives Utilizing Labor Market Data

Policy Initiatives	Emphasis		Value	
	Mean	S.D.	Mean	S.D.
Expanded Internship Opportunities	5.42	1.31	5.82	1.21
Expanded Business Offerings	5.59	1.68	5.84	1.56
Expanded Admissions Contacts	5.27	1.58	5.50	1.61
Expanded Career Planning Centers	5.37	1.78	5.85	1.41
Expanded Health Sciences Offerings	5.26	1.93	5.46	1.83
Offered Other New Programs	5.26	2.38	5.46	1.51
Expanded Placement Opportunities	5.05	1.94	5.56	1.86
Expanded Number of Program Brochures	4.87	1.58	5.85	1.53
Studied Placement Rates of Graduates	4.79	1.81	5.56	1.75
Expanded Labor Market Data in Brochures	4.79	1.70	5.01	1.66
Studied Skills Demanded of Graduates	4.78	1.64	3.53	1.53
Utilized More Federal Labor Market Data to Plan	4.58	1.80	4.66	1.70
Expanded Admissions Contacts: Older Students	4.49	1.74	4.95	1.61
Discussed Program With Faculty	4.41	1.65	5.39	1.70
Conducted Area Surveys on Demand for Graduates	4.31	1.71	5.23	1.83
Conducted Student Market Studies	4.29	1.74	4.98	1.51
Conducted Analyses of New Student Markets	4.14	1.87	4.98	1.90
Utilized State Labor Market Data in Planning	3.24	1.92	4.21	1.93
Modified Liberal Arts Core of College	3.23	1.89	4.36	1.91
Conducted Market Segmentation Studies	3.05	1.90	5.60	1.76

Note: Ratings were on a scale of 1-7 for both emphasis and value of policy initiatives related to the operations components

the shrinking 18-22 year old market. They had done little with the new techniques of market segmentation and none had conducted market position studies. Modification of the liberal arts curriculum received a weak rating which placed this initiative next to last in the rankings on emphasis. Faculties are often reluctant to make changes in the traditional liberal arts programs. The initiative received a very high rating on value, however: those who tried it liked it. The opposite was true of studies of skills demanded by employers of graduates of the institutions.

By and large the efforts and policy initiatives of the institutions parallel the suggestions of theorists such as Froomkin (1976) and Finch and Smith (1974) on the best ways to deal with the twin phenomena involved: tight labor markets (and career minded students) and falling birth rates which drove down sizes of high school classes. Increased placement of students in the business sector seems absolutely necessary in this situation and more knowledge and sophistication about the labor market must be afforded young people, hence the emphasis here on business programs, internships, career centers and the like. Students must be encourated and taught to be more mobile, write good vitas, carry off good interviews, and all the rest, it seems, if increased placement in the business sector and increased placement, generally, is to become a reality.

These data were subjected to a two-way analysis of variance to ascertain the degree of significance of the differences generated by type of school (two-year/four-year) and control of school (public/private). A .05 level of confidence was applied to the F ratios. The differences and their sources are listed below.

Differences	Sources
Expanded Internship Opportunities	Control: Private over public
Expanded Health Science Offerings	Type: Two-year over four-year
Expanded Career Planning Centers	Type: Four-year over two-year
Offered Other New Programs	Interaction: All over two-year
Expanded Placement Opportunities	Type: Four-year over two-year
Conducted Market Segmentation Studies	Type: Four-year over two-year

Most differences were generated by type of college with four-year colleges showing an edge over two-year schools in expanding career planning and placement operations and conducting market segmentation studies regardless of the control of the institution. Two-year colleges showed an edge in expanding health science offerings. Private schools had expanded internship opportunities with more vigor than had public institutions regardless of type and three of the categories of institutions had offered new programs with a greater vigor than had the fourth: two-year private colleges. An interaction variance was the source in this case.

An interesting finding here is the greater emphasis by private colleges on internship expansion. This is borne out by material from the site visits which is discussed later in this report. The private schools visited had recently begun to offer internships for a large number of programs. Many program officers noted that it enhanced placement to some extent. Successful interns were often hired at their intern firms.

The numbers of programs developed was instructive. In addition to the business and health sciences programs developed by most of the sample, 61 programs had been developed in other subject areas.

Eighteen dealt in some way with public service; the rest represented a broad spectrum of local, regional and national needs.

Programs Generated or Expanded

Table 2 lists the programs and frequencies as outcomes of increased utilization of labor market data on the campuses. The most striking finding here is the large number of schools initiating or expanding business and health sciences programs.

Table 2

New or Expanded Programs Generated by Labor Market Data Utilization

Program	Frequency
Business	74
Health Sciences	74
Human Services and Social Work	8
Gerontology	4
Fire protection and services	4
Engineering	2
Paralegal studies	2
Environmental Sciences	2
Marine Sciences	2
Recreation	1
Public Services	1
Bilingual Education	1
Indian Studies	1
Occupational Safety	1
Interior Design	1
Special Education	1
Solar Energy	1

Again, this finding parallels the theories of analysts such as Froomkin (1976) who suggest that with a reduction in traditional fields such as teaching, with an oversupply in government fields and with a tax squeeze in many communities aggravating both problems, college graduates must more and more penetrate the business sector to assure placement. These analysts also point out that the federal budget generates more and more of the increases in new job opportunities and that many of the jobs now being generated are in the health sciences.

The other programs generated reflect the temper of the times and wisdom officials have gleaned from perusal of their labor market data. Gerontology reflects the aging of the population, environmental sciences its concern for natural resources and solar energy its concern that they are rapidly being diminished.

Types of Labor Market Data

Table 3 lists the types of labor market data utilized by the officials in their planning and the frequencies of use of these data. Local surveys and use of the federal document: Occupational Outlook Handbook were mentioned most frequently as key documents and data sources for planning. The site visits discussed later in this report revealed an increasing use of state sponsored computer information centers as sources of labor market data for planning. These have been included under the heading of state labor department surveys.

Table 3

Sources of Labor Market Data

Source	Frequency
Local or Institutional Surveys and Studies	72
Occupational Outlook Handbook	68
State Surveys: Labor Departments and Other	60
Chamber of Commerce Surveys	4
City and County Planning Studies	4
Corporation Planning Documents	4
Occupational Manpower and Training Needs	2
State Board/Commission Studies	2
Upjohn Institute Projections	2
Regional Higher Education Compact Studies	1
State Development District Studies	1
National Alliance of Businessmen	1
Tomorrow's Manpower Needs	1
City and County Tax and Finance Offices	1
Board of Trade Studies	1

Local and institutional studies include studies by the community college advisory boards, needs studies by various departments and needs studies required by state boards and commissions such as those in Minnesota, Montana and Michigan (see Appendix).

Planning Approaches

Table 4 lists the planning approaches utilized by the institutions in the sample. As noted in the research procedures, copies of planning documents, policy statements and planning models were solicited from the officials and a large number were received. The findings here indicate that a variety of planning approaches were

utilized and that only a few (28) utilized the comprehensive programs now marketed by such organizations as the National Center for Higher Education Management Systems.

Significantly, however, the aspects of planning related to labor market data such as studies of graduate demand and placement histories were included by many in their planning operations.

Table 4

Planning Approaches and Operations

Approach/Operation Utilized	Frequency
Planning Committees	67
Planning Offices	47*
Policy Documents for Planning Procedures	55
Projections of Demands for Graduates of Programs	67
Studies of Placement Histories of Graduates	48
Student Enrollment Projections	71
Cost Projections	70
Studies of Program Duplication in Other Schools	28*
Commercial Planning Systems	26

*Differences between public and private schools significant at .05 level of confidence upon application of X^2

Discrepancies were apparent in the use of planning offices and in the use of studies of duplication of programs in other schools. These discrepancies were significant at a .05 level of confidence upon application of Chi Square. This finding reflects the influence of state board and state commission policy no doubt: Several states require planning offices and several also require data on program duplication with all program proposals submitted for review and approval.

SITE VISITS

The following pages contain reports of site visits to seven institutions. The material was drawn from interviews with key people in the planning process on the campuses of the institutions. An attempt was made to capture and portray the essence of the spirit of those who are using labor market data in the many and various ways to shape new programs, advise and counsel students and plot the courses for future development of the institutions.

Labor market data was indeed being pressed into service in many and varied ways. Selection of the seven institutions to be visited proceeded from the premise that the most active institutions, as indicated by the quantity and quality of planning materials forwarded in response to the request for such, should be considered and that representatives from liberal arts colleges, regional state universities and community colleges should be included. It was also decided that the variety of uses of data should be explored as much as possible. The final sample reflects the application of these criteria.

Alma College was selected under this criteria as an example of a small, excellent liberal arts college which is planning vigorously and which uses labor market data in this planning in a sophisticated way. Alma also is making a concerted effort to meld liberal and career education and has the most extensive system for involving young people in the study of labor market data and materials of any liberal arts college in the sample.

Central Michigan University was selected as an example of a regional state university which is surveying growth industries in

the state and elsewhere and responding accordingly; both through programs for young people and through an imaginative effort in continuing education for adults. Central's new Institute for Career and Personal Development is tapping the in-service and continuing adult market through 38 centers in 16 states.

Colorado Mountain College was selected as the community college in the visitation sample for its creative efforts to respond to labor market and personal development demands in the largest community college district in the country (where square mileage is concerned) and surely one of the most diverse when economy and life-styles are taken under consideration. Colorado Mountain sprawls over five counties, encompasses 4000 square miles and plans programs for ranchers, miners, mine owners, ski resort owners and workers, skiiers themselves, and more.

The University of Oregon's Career Information System was studied as an effort of a university and state to bring college and university instruction closer to labor market demands by concentrating on delivery of labor market information to students and prospective students and delivery of the same information to program planners at state colleges and universities. Twelve labor data analysts work constantly to update a state-wide computer-based system of labor market information which is available via remote terminals to every Oregon high school and college student and to every planner in colleges and universities in the state.

St. Cloud State University of Minnesota was chosen as an example of a regional state university responding to the stipulations of a state coordinating board that all programs submitted by colleges and universities in the state system have comprehensive

reviews of projected supply and demand data for graduates of the proposed program. It was also selected as an example of energetic partnerships between institutions and corporate and industrial demands for college trained manpower. Its programs in engineering photography and quantitative management information systems are at the cutting edge in these fields and were developed from labor market data generated by Minnesota business and industry.

Washington Technical Institute was developed from scratch on labor market data. Its first president was a manpower commissioner for a large metropolitan area and the labor market data and uses of same are perhaps the most sophisticated in the sample. Placement feedback loops and resource allocation formulas drive the planning at Tech. As a result, all of its 60 programs boast an 85-87 percent rate of placement of graduates.

Willamette University was selected as the liberal arts university for the sample. This is a small private university with an excellent reputation and it is leading the way, in cooperation with the American Association of Colleges, and the Northwest Area Foundation, in the drive to fit young people for careers while maintaining the integrity of the liberal arts. Willamette's new programs in communications, public administration, and American Studies together with its vigorous use of the Oregon Career Information System and its extensive labor market library are examples of a remarkable effort.

The efforts of each institution are described in the order listed above. Data on enrollment, faculty, plant and other institutional attributes are used to develop a sense of place. Methods

used to generate, collect, deliver and analyze labor market data in planning are discussed along with a description of the new programs, schools departments and institutes which have evolved from this planning. Generative aspects of this planning are given careful attention in the descriptions. As noted in the introduction to the study, concern for the well-being of the institutions, their students and their faculty drives this enterprise on. This concern takes different forms according to the campuses on which one might find himself. A concerted effort has been made to capture the essence of this concern as a context in which to consider the total effort involved.

A theme analysis concludes the case descriptions. Here the most prevalent uses of labor market data and the most prevalent procedures for using it are delineated along with a delineation of themes in program development and planning.

Central Michigan University

Central Michigan University is located in the farm service community of Mount Pleasant. It began as a state teachers college and followed the usual evolutionary path to university status: liberal arts additions and finally additions of business, health sciences, engineering and other professional schools.

The school had an opening fall enrollment in 1976 of 16,000 or more, its highest ever. A visitor in late August of 1977 learned that the budget provides for the same level of enrollment for that year and that all hands were waiting to see if indeed the record enrollment would be matched. Central, like many other state regional universities, is administered by a central trustee board

and enrollment formulas determine its budget. If the enrollments for given years are lower than previous years, budget requests for subsequent years are modified accordingly. Program planning for job-conscious students in such a context requires a rather intensive and sophisticated use of labor market data. High demand programs mean high enrollments which translate into adequate budgets and resources.

Central has schools of arts and sciences, education, engineering, business, fine and applied arts and health physical education and recreation. Officials comment on the latter unit by noting that recreation is the second biggest industry in the state and that the recreation faculty has been one of the more active on campus in efforts to look at labor market projections and plan programs accordingly.

Central has 750 tenure track faculty plus another 250 or so part-time teachers. Its faculty/student ratio is 18:1 and it graduates about 4500 students annually. It utilizes a unique formula for crediting units with work performed and this apparatus serves as an important impetus to planning. Students do not register in a department or a school. Rather, they register in courses at the university. The credit hours generated (CHGs) are then credited to the department which offered the instruction. If a department or school has a large number of CHGs, it maintains budget, faculty and other resources. If its CHGs drop, it loses budget, faculty and other resources.

Predictably, because of population shifts and concern for jobs, both the School of Arts and Sciences and the School of Education have experienced drops in CHGs in the last few years. The

School of Education, for example, generated 105,000 credit hours in 1974 but only 80,000 or so in 1976. According to the dean of this unit, faculty losses have been handled through retirements and resignations for other jobs plus the transfers of other faculty to administrative offices for part of their loads. A few teach lower level liberal arts, business and engineering courses.

Predictably, too, the School of Business and the School of Engineering have increased enrollments. It is increases such as these plus a rather large increase in continuing education enrollments which have enabled the institution to ring up record enrollments when its two major schools are losing enrollment. The institution is budgeted, specifically, on CHGs rather than student headcount and last year it generated over 500,000 for two semesters.

To have a new program approved, departments must submit proposals and the deans and vice presidents along with the program review committee are interested in both the quality and the exhaustive nature of the labor market data used for forecasts of demand for graduates of the proposed program. The federal volumes: Occupational Outlook Handbook and Manpower Needs of the Future along with a rather voluminous body of data from the Michigan Department of Labor seem to be the mainstays in this planning.

Program continuation or phase-out is largely determined by uses of labor market data of a different kind. Regardless of the excellence in planning operations, the proof of the pudding for the new program is more and more the success of graduates in obtaining employment. If there is indeed a demand for graduates in the program, feedback from placement efforts filter down through the student information system and CHGs go up. If placement feedback

indicates that opportunities are less than expected, CHGs go down. If they dip too far below expectation, the program is dropped or, more likely, merged with another. State college and university officials everywhere, it seems, are reluctant to part with programs completely after having nursed them through the rather lengthy review process required by state boards and commissions.

Labor market data in program brochures is regarded as important by the various program directors a visitor encounters on the Central campus. Total number of persons employed in the field, number employed in Michigan, descriptions of work and anticipated annual hires for the next five years or so are all examples of data which have found their way into Central program brochures. These brochures are available at the career planning centers for both the university and the various schools. They also find their way into high schools in the service region through career days, high school nights, guidance suite reading material and the like.

Again, it is in the interest of planners at every level to utilize labor market data in an efficient way in program planning and in dealing with students. The institution operates on formula-based budgetary procedures and the responsibility for meeting the requirements of these formulas rests with people at the program, department and school level.

Central planning does obtain at Central Michigan. The school uses a five year rolling plan approach to planning replete with periodic descriptions of the economic, educational and social trends for the nation prepared by economists and sociologists from the faulty who have been commissioned to develop these reports. These scholars also pull from these data a series of assumptions to guide

all planning on the campus. The reports and forms for annual projections and a rolling forward of the plan are forwarded by the Provost to all academic units and reviewed upon their completion and return. After negotiations and revisions - usually downward - of the plans and needed funds, a master budget is prepared and sent to the trustee board. After approval here the budget is forwarded to the state commission.

The planning system followed was developed by the National Association of Business Officers (NACUBO) and is currently being used by upwards of a thousand colleges and universities. It is easily understood by all personnel on the campus, it seems, and promotes communication on shared values and goals. The computer capabilities required are not overwhelming as in the case of some of the new systems.

Central was in the third year of planning cycles in 1977. The present plan had, of course dropped a year and added a year. Last year's plan included operational plans and budgets for 1976 and projected plans and budgets to 1981. The 1977 plan included plans and budgets for 1977 with projections to 1982. Under such a system, everybody plans every year and correction mechanisms are built in. If exogenous factors have intruded and labor market data rendered inaccurate in the process, the new program envisioned two years ago in the plan can be altered. One does not have to wait for a time five years or ten years hence to make the adjustment.

Central was the first university in the nation to have a collective bargaining unit for its faculty. Predictably, the formula budgeting and planning of the school have come under close scrutiny by the bargaining unit and agreements hammered out by labor

and management regarding procedures. One key contract clause stipulates that faculty positions will be shifted from a program, department or school when faculty student ratios and student credit hours generated fall below a certain point and fail to recover in two years. The figure in the present contract is 70 percent of the FTE and SCH for which the unit was budgeted.

Predictably, and as noted above, business, health sciences, engineering and technology programs have expanded at a rapid rate. These are high demand programs almost everywhere. Placement feedback, career center information, magazine and newspaper articles, television commentary, media reports of the College Placement Council were all mentioned as key sources of information which shaped student decisions about major fields at Central.

Remarkable programs Central has started from scratch in response to a careful study of labor market data are therapeutic recreation, commercial recreation, the Institute for Personal and Career Development. The first two were in response to a perceived demand for recreation specialists in the health fields and the need to penetrate the growing commercial recreation field in Michigan. As noted above, data indicates that recreation is Michigan's second biggest industry. Labor market data for manpower needs for this program came from the Michigan Department of Labor and the state and national associations for campgrounds, resorts, ski lodges, hunting and fishing equipment manufacturers and others in this vein. The program combines recreation courses designed to fit young people for these posts along with management courses designed to have them take supervisory responsibilities. Central has had a school and community recreation program for many years but has noted a

slowing of placements due to declining school enrollments and the reluctance of many communities to increase taxes to support added recreation. Penetration of the booming commercial sector seemed both desirable and necessary in this context.

The Institute for Personal and Career Development has been installed in the recently closed campus laboratory school, an indication of the temper of the times. It began in 1973 and now enrolls 2500 FTE students in 38 instructional centers in Michigan, on military installations and near government agencies. The latter military and government operations are located in 16 states and the Azores. With an Azores operation and recent development of instructional centers in Honolulu, the school can truly say that the sun never sets on continuing education classes of Central Michigan University.

The Institute has been empowered by the trustees to offer bachelors and masters degrees and, most important, to set up an Institute Curriculum Committee to approve courses and workshops for in-service development of personnel in a variety of situations. The importance of this move cannot be overemphasized. The bane of continuing education operations is slow turn-around-time, the 18-20 months needed to shepherd a program or course from the request stages of an industry or agency through the faculty committees and senates and onto the field. Central has cut this lag time to three weeks for courses and six months for programs. Industries and agencies requesting instruction are assured of a swift response.

The Institute offers management courses for budding supervisors at the far-flung Chrysler, Ford and General Motors installations, in-service refresher courses for the Michigan Medical Technologists

Association, work for Head Start teachers in several states and more. Housewives seeking to reenter the labor market can receive counseling and previous college experience can be transferred and added to through the center. The director has dean's status and reports to the Provost of the university. The Institute is experimenting with self-study learning packets much in the vein of Empire State College and other university without walls operations. For intensive utilization of labor market data and response to a growing adult student market, the Institute would seem to have few peers.

Central is an example of uses of labor market data in a built-in system of supply and demand planning. The numerous switches and gates in the formula-based system of budgeting and resource allocations eliminate the need for urging the use of labor market data in planning. It is in the best interest of all hands to find it and use it in the most imaginative way possible. This seems to be the thrust on all fronts at the school and indicators of viability show that the thrust is in the right direction.

Alma College

Alma College is a private liberal arts college located in the central Michigan town of Alma. Opening fall enrollment for 1976 was 1150 and the college was preparing for the same number of students when visited in August of 1977. The college employs 72 faculty members and the faculty/student ratio is 16:1. It occupies a completely rebuilt campus as a result of a 25 year building plan which provided for the razing and replacement of all 50 buildings on the campus. The beauty and efficiency of the new plant would be hard to match in similar institutions. Officials from Phi Beta Kappa inspected

Alma last spring and hopes are high that a chapter will soon become a reality.

Alma officials are keenly aware of both the changing numbers of college age youth and the changing preferences of these young people as related to college and jobs. It has a planning committee which has devoted considerable time and effort to the long-range implications of this phenomenon. It has also developed policy and initiated programs to deal with it. The basic thrust of these efforts center around the central theme of integrating the liberal arts with career training. The planners are convinced that the traditional learnings and values of liberal arts education will not be sacrificed by the new emphasis on careers and that it will in all probability be strengthened.

The key initiatives in this new thrust have been an expansion of programs and staff in a department of business, addition of interdisciplinary courses with labor market currency which are labeled "programs of emphasis," expansion of internships and the development of a career planning center of a remarkable nature.

The college offers 20 major programs and 10 programs of emphasis. All are bachelor level programs with the major programs following the usual liberal arts college pattern, ranging alphabetically from art to sociology. Unusual for this list is the inclusion of both a business and an economics program. The school also has an education department.

Programs of Emphasis are built around a series of courses designed for labor market currency and are so designated on the transcript of the student. They include such course sequences as environmental studies, public service and library science. The

college is considering the re-institution of the minor on an elective basis, having eliminated it as a requirement a decade or so ago. It had found that many students were developing double majors in the hope of greater labor market currency for their degrees and the officials considered this destructive of breadth in the liberal arts experience.

The college has initiated a program of continuing education which serves older students in the area. This is a small program which involves about 100 students and 10 courses. The latter are mainly management courses for city and corporation workers, in-service education courses and freshman courses for housewives. The latter might become full-time students at Alma in the years to come and take up some of the slack of truncated applicant pools. Time will tell.

The new programs were planned with labor market projections from a variety of sources. These include the Bureau of Labor Statistics materials such as the Occupational Outlook Handbook, Manpower Needs for the Future and others. The Michigan Department of Labor distributes an impressive array of materials which are based on federal data and which have been focused for the Michigan labor market. The programs are well received by the students. The business programs must now be rationed due to over-subscription both in the major; business administration and the programs of emphasis; marketing and finance.

An interesting aspect of the new initiatives is the Career Planning and Development Center of the college. Ninety-two percent of the 350 entering freshmen arriving on campus the week after the visit of the investigator would engage in this program which is

designed to assure an intelligent approach to career choice for the Alma student, selection and preparation for a rewarding career, involvement in an internship or practicum related to this choice and intensive efforts to assure successful placement upon graduation.

The program involves an intensive and sophisticated use of labor market data. It has received funding from the Kellogg Foundation and from the U.S. Office of Education and the college has budgeted for its continuation in the long range planning documents of the planning committee. Officials at Alma see it as a key element in their efforts to merge liberal arts and an effective form of career preparation.

The program is built around career guidance by faculty and has involved extensive in-service development of faculty to be able to do this well. All students at Alma are advised by faculty. There are no teaching assistants. Freshmen coming to Alma who opt for the program are administered the Strong Interest Inventory, attend career "conventions" in natural and social sciences and the humanities, complete a personal profile of strengths and weaknesses, and begin to discuss their career learnings with their faculty adviser. Over the next four years, they will attend career exploration workshops on a variety of fields, engage in a career exploration guide designed to acquaint students with on-site career experience, browse through the Career Information Center where descriptions of 280 occupations together with information materials on Michigan corporations and agencies are housed, interact with the computer-based MOIS (Michigan Occupational Information System) which offers printouts on job descriptions and demand for 150 jobs for

college graduates, engage in a practicum or internship, have his vita forwarded to personnel officers by the placement office, sign up for placement interviews on campus and accompany a van load of seniors to placement interviews in the major metropolitan areas of Michigan.

The involvement of faculty in this enterprise is remarkable. Evaluation reports for the first 18 months indicate 50 visits from faculty to learn more about career requirements in a given corporation or agency, 90 hours of meetings and workshops, 450 interviews with students, 1800 contacts by mail with companies to receive labor data, 300 phone contacts in this respect and 280 hours of career workshops and "conventions" for students. This involvement has been worked into load in many cases and extra stipends are paid from grants for faculty in-service developments.

Alma's Career Information Center was visited 2600 times over this period by both students and faculty and students completed 400 on-campus and off-campus interviews with personnel officers. Alma graduates about 235 students each year and about 72 percent register for placement.

Alma's overall effort to merge liberal arts and career preparation seems effective. Placement rates of students were good in the past two years where other institutions have had less success. Of 234 graduates in 1976, 94 percent were either in graduate school or employed at the time the follow-up survey was made ten months after graduation.

Predictably, Alma's efforts in program development for labor market currency has affected other aspects of the institution. Coming at a time of a steady state in enrollment, the efforts

necessitated shifts in resources among academic units rather than net addition of new faculty and staff. Increased enrollments in business, public affairs and library science programs required new faculty which were added by attrition in faculty in English, history, languages and economics. No faculty were dismissed as all changes were made upon the retirement or resignation of faculty. Alma does not have collective bargaining and no prospects of such seem likely. Most faculty are small liberal arts college devotees according to most interviewees. They like the college and the students and discussions of the challenges in the years ahead seems to have convinced most that shifts and unusual efforts at program development are necessary.

Alma planners are dead serious about "being on the train when it leaves the station in 1985" as one interviewee so aptly put it in a discussion of impending shrinkage in enrollment bases due to declining birth rates. In the last 20 years, the college has seen a steady growth of community colleges and state universities in what was a rather extensive, though rural, service area. They have a legacy of competition for students and they have adjusted more swiftly than most liberal arts colleges to the inherent threat brought by the new student concern for an education with labor market currency. It is little wonder that they were nominated by many members of the nominating panel.

There is every reason to believe that they will indeed be aboard "the train" in 1985. Alma has added a staff member to the two person admissions staff and if the trustees approve a proposal pending at the visit of the investigator, they will add another. They have added a staff member to bring the public relations staff

to two professionals plus clerical help. Each program and each program of emphasis together with each minor is to have a brochure which will contain extensive labor market information and which will be updated periodically. A vice-president for development has been added and a pledge campaign to increase the endowment of $8 million should raise this amount to $15 million over the next decade if all pledges are honored. Trustee replacements over the last five years has seen a number of corporate types with wide contacts for giving, internships and employment of graduates come aboard.

Further study of liberal arts colleges taking Alma's approach seems warranted. Some colleges are taking the opposite approach: electing to maintain what they consider the "purity" of the liberal arts and electing to forego any assistance to students in career preparation past a minimal amount. It will be interesting to see how many can do this in the face of the career orientation of students and the shrinking student base. A few surely can where almost all students go on to graduate and professional schools after graduation. Theoretically, a school, like Alma, which sends less than half its graduates to graduate school immediately should have difficulty maintaining this stance. A third group of schools have opted to become widely known for one or two programs and attract students with this bent along with others impressed by this show of excellence and theorizing that other programs would be similarly affected. A comparison of the odysseys of the three types of institutions through the years and a chronicle of what happened to them as they pursued their courses seems appropriate and possibly useful to the higher education community.

The impact of Alma's extensive labor market data operations might also be studied carefully. This is especially true of the 3000 pieces of material received via requests to corporations and agencies. These materials are placed in 50 bins, each having space for 50 firms and agencies. Students may take the material and those taking last copies of a brochure or company report notify the clerk on duty and the piece is immediately re-ordered in quantity. This operation is affecting demand for curriculum in ways which are completely unclear.

Similarly, and on a much larger scale, demand is being affected by the MOIS (Michigan Occupational Information Service), the computerized job and curriculum service which is new in Michigan and new on the Alma campus. The MOIS is sponsored in nine states by the federal government under grants for pilot operations. Computer terminals are located in schools and service agencies and in at least one college: Alma. Students can receive interactive information on 105 occupations which require college training. How this is affecting curriculum demand and students themselves is not clear.

Colorado Mountain College

Colorado Mountain College (CMC) opened its winter quarter in 1978 with 600-700 students at its Glenwood Springs campus, 300-400 students at its Leadville campus and enrollments at its nine continuing education centers which indicated that the total headcount of 1976-77 - 12,429 students - would be exceeded! A visitor learns that the college district encompasses five counties, that the distance from the westernmost continuing education center at Rifle to the easternmost center at Breckenridge is comparable to driving across

the State of Maryland and that almost every sector of the American economy can be encountered in the process: farming, ranching, mining, manufacturing, recreation, service and more.

The visitor further learns that the growth of the continuing education, outreach arm of the institution, has been rapid. The division did not exist in 1967 and its first year's enrollments in 1968 did not reach 900. This was recorded for operations at three centers, however, and by 1972 centers had been opened in all five counties with some counties having multiple centers. The enrollments for that year exceeded 6000 and rapid expansion resulted in the large numbers being served at this time. The college itself opened its doors in 1967.

The college operates the usual range of Associate in Arts Programs, serving students seeking to prepare for transfer to other institutions and those who will end their education with their degrees at CMC. Accounting, business administration, agriculture, secretarial, fishery, forestry, natural resources, carpentry, construction technology, machine shop trades, ski area technology and appliance repair are programs which have found their way into the offerings of the college. Students may prepare for the General Education Diploma at the school and planners are contemplating a variety of programs to accommodate new industries and new people. Some constitute a puzzle. Petroleum company officials have requested a program of shale oil mining technology and college officials will try to respond if and when both they and the officials can agree on what this individual is. Shale oil in the Rifle area has been in the experimental and developmental stages for several years and all await the final technological breakthroughs which

will assure a competitive price for the product. College officials can then be assured of accurate job specifications and set about planning a curriculum.

The college uses the usual community college approach to program and labor market planning. Some dozen or so advisory committees attend each area or occupational cluster and make decisions on supply and demand, projections of same and other matters. Health sciences, business and farm and ranch management are examples of the committees at work.

A variety of labor market data is pressed into service in the planning process. Locally generated data plus frequent studies conducted by Job Service, the Colorado Employment Service Office, and commissioned studies by economists from the University of Colorado constitute the mainstays in this effort along with industrial studies of personnel demands and studies by town and county commissioners and supervisors.

The reason for this local emphasis is simple: intermittent federal studies and reports are of limited use in an area where population and industrial expansion is so rapid. At the inception of the college, for example, it was necessary to combine five counties and 4000 square miles of land to claim the 400 high school graduates and $60 million in property valuation necessary to have a community college district. The high school graduation rate is still low but the population has expanded by a factor of at least three and the assessed valuation has risen to $487 million.

Assets in the county include large coal, zinc and oil shale operations, some five or six major ski resorts (Vail, Aspen, Snowmass, Breckeridge and more) and acres and acres of condominiums, chalets,

lodges, ski slopes, discos, restaurants and more. Planners are taxed indeed to marshal the labor market projections necessary to serve the traditional community college population well and to serve the growing region. It becomes immediately evident that a different sort of planning must be obtained if continuing education in such a sprawling district is to become a viable enterprise and that this planning must be of a high quality if the startling growth of the enterprise in this instance is to be dealt with effectively.

Planning at CMC for its continuing education centers is indeed different. While continuing education center in the usual sense of the word connotes rented space in a community where classes and meetings are held after planning has been carried out at a central campus, CMC has decentralized its operations with staff and planning in the local communities where the centers are located. Instead of intermittent use during class and meeting hours, the centers are open all day and well into the night and the staff offers a variety of services to the community along with a rather full range of both day and evening classes. Each center is different. Rifle plans for ranchers and shale oil miners, Minturn for zinc miners, Eagle for ranchers and Vail exurbanites, Vail for resort dwellers and workers and so it goes. As a consequence, officials have adopted an "organic system" approach to operations. The community representatives or "reps" and their associates are the key in this approach, the intent being to have a college presence both of as well as in the community.

Most centers have two or three staff members: a "rep", a secretary and perhaps an assistant. Informality and complete familiarity and ability to advise on various aspects of the program

seem the order of the day. No callers are ever put on hold by the staff and no calls are ever transferred. Whoever answers the phone or greets a visitor is expected to explain fully every aspect of the center operation and all procedures for registration and matriculation in college programs.

In the "organic system," planning succeeds or fails on the basis of the performance of the "reps." Visibility, familiarity and informal information networks appear to assure success in virtually all of the centers and surely in the five observed by a visitor in the middle of winter. The "reps" operated out of a storefront location in two rural communities, the basement of a hotel in a town, an A-Frame chalet in a resort community and in a former school in yet another resort community. Programs differed in all communities with more courses, generally, in practical and job-related areas in the mining and ranching communities and more arts and humanities courses in resort towns. The "reps" build in these differences each quarter when they sit down to schedule the courses for next quarter and publish them in the little newspapers which go to all postal patrons in the district and which constitute the main form of marketing for the program.

"Rep" decisions about what to offer are pivotal but not forbidding. The college is a district operation with a small subsidy from the state (about 20 percent of the budget) and has considerable latitude in programming. All continuing education courses are self supporting. Students pay $18 a course and the teachers receive $270 for 30 hours of instruction. With the state subsidy, mostly local and part-time teachers, and with large enrollments in some popular classes, the centers are able to offer any small classes which

otherwise would not be possible to offer if the school was a state community college. Under these terms, "reps" are able to experiment with proposed offerings and build others into viable courses over a few quarters. If classes are too small and "don't go," they are cancelled. Both students and teachers are well aware of the contingencies involved in advance. Centers seem to average a rate of classes that "go" for a given quarter that is in the neighborhood of 65-70 percent.

This system has considerable value to program planning for the college and others like it. If labor market data indicates that a program in a given area seems necessary and desirable, much of the long wait for state board approval and much of the apprehension about the accuracy of the labor market data and the subsequent decision to gear up for a complete program can be eliminated. The college is empowered to offer a cluster of courses in an area in lieu of a full program. It can thus meet demands for instruction in the area while at the same time submitting the prospects for a full program to a full test. Booming enrollments and expressions of long term interest are the signals for follow through to the state board for permission to offer a full program. CMC is using this technique presently in attempting to come to grips with the amorphous aspects of the shale oil mining program. The Rifle center will offer the cluster of courses through the continuing education program. If shale oil mining does indeed become a reality and the industry expands as has been predicted on more than a few occasions, the shale oil mining program will become a part of the CMC catalogue with all the rights and privileges obtaining there-unto the graduates of the program. If the opposite obtains, the shale oil courses will

not appear in the Rifle newspaper one quarter and all concerned will go on to something else. The value of this approach cannot be overemphasized. Sleepless nights of program planners are caused by the thoughts that the labor market data on which decisions to begin a program are all wrong, that the outlays for capital improvement will result in some edifice which will become known as his or her "Folly," that all of the personnel engaged will have to move on and that perhaps he or she will have to join this caravan.

None of the five "reps," predictably, could describe in sequential order the events leading up to a decision to offer a program for a given quarter. Talk of an "organic" system seems real in such a context. Decisions are arrived at after conversations with many people in many places, it seems: supermarkets, classrooms, ski slopes and more; from feedback on past offerings and possible sequel courses and from reading and discussion of trends in the work place and in lifestyles. Direct requests for offerings from the business sector are honored along with requests from town and county governments.

"Reps" make a conscious effort to know many people and take time to talk on many subjects. Persons with rural backgrounds are reminded of the county agent operations in many communities: the office in the business district of town and the dispensing of coping information on a variety of subjects. "Reps" offer tips and some in-depth advice to people trying to find a particular program somewhere in the state, give tests for national testing agencies to people who would otherwise have to travel over the mountains to Denver, share labor market data with young people pondering a college career or older people pondering a change in careers and so on.

A grant from the Fund For The Improvement of Post Secondary Education now funds outreach counselors for this work and the "reps" have found that their "talk load" has increased instead of decreased as was expected. Many callers want to learn more about routes to their goals through CMC Continuing Education.

The centers also serve as bases for senior citizen centers in communities where these have been funded and as beneficiaries of volunteer services from retired persons under the RSVP program (Retired Senior Volunteer Program). An RSVPer at a rural center dandled the secretary's baby on her knee and lectured a visitor on the economics and manpower needs for moving cattle into the high country in the spring and about the future of ranching in the area generally. She had been in the community all her life and she and a friend walk two miles into town twice a week to help out at CMC and the local school. She mans a telephone lines on busy days, dispenses labor market and educational literature to callers, helps paste up the publications, helps count and box the books which have to be secured from the main campuses and transported to classes, helps ready the audio-visual equipment and supplies and helps register the students during what seems to be the most challenging week of the centers.

Both the college officials and the "reps" seemed satisfied that their localized systems of labor market data and planning are adequate. As noted earlier; community colleges can lean heavily on advisory committees and, in this case, the organic system buttresses this traditional source of labor market and planning information. The rather large volume of government and industrial planning for this region generates a third source of very valuable labor market

projections which are being pressed into service.

It would be a challenge, but not entirely impossible, to replicate much of what is going on in this district in other places. Most community colleges use advisory committees and most communities are generating planning and labor market projection data to some extent. Community-based "reps" with authority for planning for a service area in a smaller community college district might be difficult. Asnuntuck Community College of Connecticut, for example, would have to open centers in Enfield, Somers, Windsor Locks and perhaps Windsor Hill to match the coverage at CMC. All are within 20 miles of each other. The "rep" would have to live in these communities along with a staff and would have full authority to plan and offer courses. Some community and perhaps some four-year colleges can bring this about. Others would not be able to do this. Whatever, it is an unusual, and very effective way to plan, it seems, and provides what might be a most effective means of gathering and responding to the implications of local labor market data.

St. Cloud State University

St. Cloud State University is a regional state university located in upper northwest Minnesota. Opening fall enrollment figures had just been released when the visitor to the campus arrived. After ten days of classes, the total head count at St. Cloud, or SCSU as officials refer to it, was 10,783 students. This figure represented an increase of 24 students over the totals reported after ten days of classes in 1976. Quiet satisfaction was evident over this development along with the news that on-campus students had increased by 4 percent and undergraduate students had increased

by 5 percent. St. Cloud has had difficulty in both areas of enrollment over the past five years and this was an indication that their planning and resultant policy initiatives and programs were paying off.

St. Cloud is one of seven state universities in the Minnesota system of regional universities each developed to serve an area of the state. All except a new institution in the Minneapolis area were evolved from the old normal schools of the state and followed the familiar route to university status: teachers colleges, to state colleges, to state universities. SCSU offers 57 degree programs for undergraduates and 10 for graduate students. The latter are masters level programs, eight of which are liberal arts and the rest business and education offerings.

Officials at St. Cloud credit a state commissioner of higher education for the long range thinking and planning which enabled them to be in what they consider a sound position for the rocks and shoals most educators have said will lie ahead for schools like this. A former president who now teaches philosophy at the school was also given credit. About a decade ago, the school began to look at its future as a teacher education institution, studied the labor market demands of the area carefully and began to expand its program offerings in non-teacher education areas. Ambitions related to achieving university status were undoubtedly helpful in this respect. But the careful study of birth rates and the discussions of their meaning for teacher demand and teacher training was perhaps the most pivotal aspect of the effort to plan ahead. Everything seemed to come together in 1975 when the decline in enrollment was reversed, more business and liberal arts degrees were offered than teacher education

degrees and the legislature changed the name of the school to St. Cloud State University.

When asked to name their big growth centers at the university, officials invariably pointed to their colleges of business and industry. Their centerpiece in the latter is a respected program in photographic engineering supported heavily by funds from both the state and several corporations. The business college offers nine degree programs including the usual marketing, finance and accounting majors. Their most unusual effort where growth is concerned is their QMIS program: An acronym for Quantitative Methods and Information Systems.

Most of the engineering and business graduates are employed by the corporations and businesses in the area or in the Minneapolis-St. Paul area which is 70 miles southeast of the institution. Significantly, neither college existed at St. Cloud a decade ago. The officials noted that liberal arts enrollment was down as was education, that they were putting out more brochures and that they were including labor market information in their brochures. They were encouraging double majors and/or strong minors which coupled traditional liberal arts fields such as English, mathematics and history and they have developed a new line of offerings such as communications, public administration, criminal justice, environmental studies and urban affairs. An early education major has been added to elementary education and a comprehensive special education major has been added. Teacher education students are urged to include a special education sequence as a matter of course in their program as the word from the field is that graduates with these skills and insights might have an edge at the hiring gate because of the new

emphasis on mainstreaming handicapped children and because of the new federal grants for the handicapped under P.L. 94-142.

St. Cloud students have several opportunities for broadening experiences. The state university system operates a Common Market System which allows students to register at will on other campuses of the system and be assured of transfer of credit to the home institution. They can also register at two liberal arts colleges in the area for courses and each year about 90 study in Denmark at a St. Cloud living-learning center.

Planning at St. Cloud is rather traditional in nature. The philosophy of the president has been to encourage creativity at the program and departmental level. As a state system institution, the final aspects of planning and indeed the entire operation could be characterized as a formula driven model. As in other state university systems, the student credit hour (SCH) generated is the key element in planning. The director of institutional research must estimate the total SCH the school will generate two years ahead. The president informs the state coordinating board of these intentions and the budget is developed accordingly. Last year the school generated in excess of 350,000 SCH and received an appropriation of about $15 million. Colleges and departments which generate many SCHs gain positions and operating income while the reverse obtains for those generating few SCH. It is thus in the interest of all concerned to offer programs with labor market currency for what seems to be an increasing number of career oriented students and to point out the labor market currency of liberal arts programs in more forceful terms than has previously been the case.

While any faculty member can and is urged to develop a proposal for a new program or course, the road to final approval is long and torturous. As the former president noted, the aim is to temper all proposals in a crucible and only admit the most fit to the inner sanctum. He credits the successes of SCSU's programs to this process of survival of the fittest. To propose a program, the proposer must complete forms and narratives required by SCSU and the Minnesota Higher Education Coordinating Board (MHECB). The narrative must discuss the intended clientele for the program, its labor market currency, its effects and demands on existing programs and the added resources needed to run it. It must be approved by department chairmen, college deans, the vice president for academic affairs and the president. The latter approve only after a presentation and defense of the program has been made in the faculty senate of the university, the real crucible according to old hands on the campus. The program is then approved by the SCSU trustee board and is forwarded to MHECB for review and approval. Analysts at this agency again go over labor market currency, costs and clientele along with evidence of overlap and duplication with other programs in the system where such exists.*

Labor market data discussed during the visit included the usual forecasts for college trained manpower put out by the U.S. Bureau of Labor Statistics: Occupational Outlook Handbook, Manpower Needs for the Future and others. The Minnesota Department of Labor supplies materials and is working on an industry/occupations matrix which should be of immense value if and when it is finished. The apparatus will provide historical and projected employment of professionals in the 11 basic career clusters of the state. If, for example, one wanted to look at the employment picture of photographic

*See Appendix for policy excerpts on requirements

engineers in wholesale and retail trade, buttons could be punched and the information would become available.

An increased volume of labor market data is reaching St. Cloud students in the new thrusts. A visit to the office of public contacts made this clear. A wall-sized cabinet was opened with a flourish to reveal stacks of brochures for each of the 68 programs at the school, each with data and information on what graduates of the program do for a living and what they could reasonably expect to be doing in the future. A career planning center offers follow-up to this in the form of materials and counseling on job possibilities.

St. Cloud officials are concerned that they have not done as much as they would like in the area of continuing education and this occupies much of their thinking these days. The continuing education unit is now attached to the graduate school and offers mostly credit and non-credit courses to in-service teachers. The planners recognize that they are not on the same wave length of other bellwether institutions and are casting about for an apparatus to enable them to tap the adult student market more fully. It was not clear at all to the visitor what shape this would take. A good part of one meeting was devoted to brainstorming on this problem. The only sure prediction one can make is that something will be worked out and that the number of adult students would increase.

Thirty percent of St. Cloud's graduates went directly to graduate school last year, 20 percent became housewives or otherwise declined participation in the labor force and about half checked with the placement office about jobs. About 85 percent of these, and the figures are tentative, were placed within six months

of graduation according to officials. This is a respectable record in a tight labor market and much credit was given by all to the greatly expanded intern program at St. Cloud. Most of the 1000 or so seniors can opt for an internship, many do and many are hired at the places where they intern. The same situation was in force at the Michigan schools the visitor studied and the possibility that a new form of placement and apprenticeship is evolving is one that cannot be dismissed lightly.

St. Cloud, along with other schools in the university system, has a strong collective bargaining unit. The contract is drawn up between the MHECB and the bargaining unit (NEA) and policies flow in a formula driven manner from it. Unlike the Michigan schools in the university system, Minnesota schools have bargaining involvement in program development and other academic matters. The bargaining unit is replacing the Senate in effect where these matters are concerned, it seems. This bears careful study to note the results of and reaction of the bargaining unit to program development by formula on one hand and program elimination by formula on the other. Will the bargaining unit attempt to change the formula? There is already a clause in the contract on dismissal because of financial exigencies. Provide in some other way for displaced members of programs eliminated by formula?

So far this problem has not arisen. Few if any programs have actually been eliminated and this, curiously, seems to have been the case all along the odyssey of this traveler. Programs are "moth-balled" so to speak but seldom eliminated. St. Cloud has a formula, handed down by the MHECB, which requires the elimination from the catalogue of courses which are not offered three years in succession.

and it has another formula which reviews all courses with enrollment of less than ten students and cancels them if evidence is not presented to show that they are absolutely essential to the progress of the students involved. Theoretically, the formulas themselves will bring about the demise of programs. This remains to be seen. Meanwhile, hiring is at a virtual standstill at St. Cloud, as in most schools of this sort, and attrition is counted on to ameliorate any problems involving overstaffing. The success of this policy, too, remains to be seen.

University of Oregon

The Oregon Career Information System is a state-wide, computer-based guidance system operated from the University of Oregon. It developed from scratch in 1971 to a point in 1977 where 95 percent of the 333 public school systems and 100 percent of the 10 or so community colleges used the system and paid a fee to the consortium which operates the system for the privilege of doing so. The system offers a complete range of occupational information for 290 occupations which comprise 90 percent of the Oregon workforce. Senior college students also have access to the system and requests for manpower information are routinely handled from planners in the Oregon Commission on Higher Education and at the department and college level at Oregon colleges and universities.

The director of the center notes that the system grew out of a belief on the part of many people in Oregon and in the federal government that career choices of Americans are too often based on information that lacks accuracy, is out of date, or is too general to apply to individual users. The bald fact, he notes in a position

paper on the subject, is that a comprehensive reliable source of occupational information is not available to most Americans and they are left to learn about occupations from advertisers, well-meaning but uninformed friends and by trial and error. College students, he notes are not too different in this respect from the ordinary man on the street.

The system is designed to replace guidance counselors as heavy delivery sources of occupational information. The planners note that to expect counselors to compile and deliver the volume of occupational information needed in an effective system is not too realistic and that this was especially so in schools where the huff and puff of testing, college applications and personal counseling precludes close attention to compiling information about a complex and dynamic labor market. Further, economists and other labor specialists, are ten times more knowledgeable about the labor market and a computer is ten times more effective as a delivery medium than are school counselors, the officials contend. The reasoning is convincing even if the figures lack documentation.

CIS, as the system is called, consists of tapes containing descriptions of jobs, employment outlook, salary and training opportunities for the 290 occupations in the system. Also included are suggestions for further reading, names and addresses of officials of clubs and organizations related to the jobs and addresses and telephone numbers of persons who work at these jobs and who have volunteered to talk to high school and college students about what they do. The material was written and is constantly updated by a staff of 12 labor market specialists. These writers utilize the federal and state materials from the labor departments and buttress

these data with a wide variety of materials from organizations in the fields involved, guilds, interviews with leaders in the field and surveys of employers.

A description of prospects for employment consists of some 300 words and represents a judgemental analysis of a specialist which is based on data from all sources. To access material, a student enters a code number from his handbook which corresponds to an occupation. A student entered the nursing code while a visitor watched and the description on the following page emerged from the typewriter on the terminal during a total elapsed time of 4 minutes. As can be seen, the description includes a wealth of information on working conditions, aptitudes, salary, employment totals and employment prospects and concludes with an invitation to the student to type in codes for printouts of schools and colleges preparing nurses, clubs and organizations promoting nursing and contact persons who will talk about their jobs.

A visitor indicated he would like to learn about training opportunities, costs and requirements for persons interested in becoming welders. Also, the names of welding guilds and contact persons to talk to about welding. Officials made an entry and the visitor found himself in a conversation with the computer and later receiving four full pages on these items. These printouts follow the material on nursing.

Students who are unsure of their occupational choices are invited to use Needle Sort at the center, a combination interest inventory and do-it-yourself computer. The entire 290 occupations stored in the computer have been arranged on cards and punched according to 20 or so attributes of the job. If the job possesses

the attribute in question, say outdoor work, a hole is punched in the top of the card, if not a notch is made where a hole would be. Students insert a knitting needle into the deck on the basis of attributes they like about a job, lift up and jobs without this attribute are eliminated by cards with notches but without holes falling to the desk. This process of elimination continues until a few cards are left whereupon students enter their code numbers into the computer and receive printouts.

The system has a capability of indicating at any moment the top ten occupations for which information was accessed by students during a given period. For the day the visitor was accessing, 3 inquiries about hotel and motel managers, 3 about registered nurses, 2 about fish and wildlife specialists and 10 about programmers for computers had been accessed. Ten references to the University of Oregon, 8 about Merritt Davis Business School, 7 about Southern Oregon State College, 4 about Oregon State University and 3 each about Lane, Clackamas and Mt. Hood Community Colleges had been printed out as answers related to training opportunities. The printouts are totals for the University of Oregon computer which serves the lower Willamette River Valley. Additional computers serve the Portland and Cascades areas.

The project officials have ample evidence, collected through evaluation of the system, regarding its effects and impact on students. Data on changes in career choices, selection of careers heretofore unknown and affirmation of original career choices indicate that the project is quite useful in career guidance. Questions about impact on demand and supply in higher education and on management functions of colleges and universities remain unanswered both

here and perhaps in the eight or nine other states operating computer-based systems. This investigator hopes to examine this impact in later research, given time and the blessings of funding from the National Institute of Education. The system is surely impacting on student choices of majors and minors, on whether to attend college at all and on where to attend if the final decision is affirmative. SCH demand in this context and the myriad formulas of state coordinating boards interface here somehow in what seems to be an invisible meaning of demand generated by the information system and supply, in a final analysis, conforming to this demand. An interesting research problem to say the least.

The Oregon officials offer program officers at colleges and universities an opportunity to read and offer suggestions for modification of any material on their fields or schools which is placed in the computer. They regard their effort as a joint venture between guilds, agencies and training units to help students make wise career choices rather than an operation of twelve persons alone.

The staff at the center is also considering ways and means to cross Oregon borders with their career descriptions. Some sort of exchange might be possible with the other states operating systems but the lack of contiguity might hamper effective integration of material. How many Oregon students will prepare for jobs in Michigan, for example? A truly national list of descriptions might not be possible but a regional system involving the far west states might be brought about if others develop systems. Time will tell. For now, however, Oregon students receive a very full analysis of what is going on in their state and what is likely to transpire in the years ahead as regards 290 different jobs. For some jobs, they

can assume that conditions which obtain in Oregon will most likely occur elsewhere as some national data are included in the larger profiles of some jobs. This data is general in nature, however, and comes nowhere near the depth and lucidity of state information.

Whatever, the visitor came away convinced that Oregon youth and adults and the Oregon economy were more fortunate than most. If indeed a procedure can be worked out to better match people with jobs, the Oregon Career Information System is surely one of the most likely apparatus to bring this about.

Washington Technical Institute

The faculty and staff were planning for 8000 or more students at Washington Technical Institute when a visitor arrived at the campus in August of 1977. This would be a ten percent increase over last year's enrollment, a 20 percent increase over the figures for 1975 and 100 percent more than came to the school in 1965 when it in fact did not exist. Fully half of these students would be part-time and most would not have come to the new campus on Connecticut Avenue in Washington, D.C. to register, having taken care of this chore by a computer terminal at their nearest extension center. Once on campus, the students would sample the fares of 60 different programs and rest assured that a major in any one would result in a 90 percent chance of employment within six months after graduation. Washington Tech utilizes more technology and manpower planning in their operations than schools in this sample and perhaps schools anywhere. They are very proud of this and officials were quick to point out the manpower background of the first president of the school and the labor market approach to their efforts.

DESC 8162

8162 REGISTERED NURSES

REGISTERED NURSES ASSIST PATIENTS WITH THEIR CARE, & FUNCTION AS A MEMBER OF THE HEALTH CARE TEAM TO ASSIST IN THE PROMOTION OF HEALTH. DUTIES VARY DEPENDING UPON WHETHER THEY WORK IN A HOSPITAL, DOCTOR'S OFFICE, PUBLIC HEALTH CLINIC, INDUSTRIAL PLANT, AS A SCHOOL NURSE, OR VARIOUS OTHER ROLES. GENERAL RESPONSIBILITIES INCLUDE THE NURSING CARE OF PATIENTS, TEACHING HEALTH CARE, INSTRUCTION OF NURSING SKILLS, ADMINISTRATION OF DRUGS, PERFORMANCE OF TREATMENTS, AND FUNCTIONING WITH PHYSICIANS AND OTHER PARA-MEDICALS IN THE HEALTH CARE TEAM TO ASSIST PATIENTS' RETURN TO HEALTH. PRESENTLY, AN EXPANDED ROLE FOR NURSES IS BEING PRACTICED WHICH ENABLES PHYSICIANS TO DELEGATE MORE COMPLEX MEDICAL PROCEDURES TO THEM. SPECIALTIES: GENERAL DUTY NURSES (DOT# 075.378-014), NURSE ANESTHETISTS (075.378-018), PRIVATE DUTY NURSES (075.378-022).

---APTITUDES: ABILITY TO COMMUNICATE BOTH VERBALLY AND IN WRITING, COORDINATION & MANUAL DEXTERITY, ABILITY TO WORK WITH PEOPLE AND AN INTEREST IN SCIENCE.

---WORK SETTING: INDOORS WITH EVENING, WEEKEND OR NIGHT SHIFT DUTY. EMPLOYERS: HOSPITALS, NURSING HOMES, PHYSICIANS, PUBLIC HEALTH FACILITIES, INDUSTRIAL PLANTS, SCHOOLS OF NURSING AND PUBLIC SCHOOLS.

---LICENSING: R.N.'S MUST COMPLETE APPROVED PROGRAM IN NURSING & PASS LICENSING EXAM (SEE PREP 8162). TRAINING: 2-, 3- & 4-YEAR PROGRAMS AT APPROVED SCHOOLS ARE AVAILABLE.

---CURRENT EMPLOYMENT: OVER 10,000 EMPLOYED IN OREGON & OVER 50% ARE IN & AROUND THE PORTLAND AREA. IN COMMUNITIES WITHOUT LOCAL HOSPITALS EMPLOYMENT IS USUALLY SMALL.

---WAGES: AVERAGE ENTRY RATE FOR R.N.'S IS AROUND $950/MONTH. AVERAGE MAXIMUM IS AROUND $1000/MONTH.

---OUTLOOK: SHORTAGE OF APPLICANTS. THE OUTLOOK DEPENDS ON GROWTH IN THE POPULATION, AN EXTENSION OF PREPAYMENT PROGRAMS FOR HOSPITALIZATION AND MEDICAL CARE AND THE REPLACEMENT OF THOSE NOW WORKING. STUDIES INDICATE SOME IMPROVEMENT WITH MORE SCHOOLS, SHORTER TRAINING PROGRAMS, MORE MEN ENTERING THE FIELD AND FEWER WOMEN WITHDRAWING FROM THE OCCUPATION FOR LONG PERIODS. THERE ARE SHORTAGES IN MOST COMMUNITIES ALTHOUGH THE PROBLEM IS LESS SERIOUS IN CITIES LIKE PORTLAND AND EUGENE WHERE WAGES ARE HIGH AND MANY APPLICANTS ARE AVAILABLE. PROPOSED LEGISLATION THAT PERMITS DOCTORS TO DELEGATE MORE RESPONSIBLE DUTIES TO NURSES SHOULD RESULT IN NEW HIGHER PAY JOBS FOR NURSES IN AREAS LIKE THE SOUTH COAST WHERE SHORTAGE OF MEDICAL SERVICES IS SERIOUS. OPPORTUNITIES APPEAR TO BE BEST FOR THOSE WITH SUPERVISORY EXPERIENCE OR TRAINING IN SPECIALTY AREAS SUCH AS CORONARY CARE, PEDIATRICS OR OBSTETRICS.

FOR WAYS TO PREPARE, TYPE IN: PREP 8162
FOR BOOKS, TYPE IN: BIB 8162

HELLO; PLEASE ENTER YOUR NAME; THEN PUNCH THE 'RETURN' KEY.
?BILL
HELLO BILL;
YOU ARE LOGGED IN TO THE CAREER INFORMATION SYSTEM.
HOW DO YOU WANT TO START?
IF YOU FILLED OUT THE QUESTIONNAIRE IN YOUR HANDBOOK;
TYPE IN: QUEST
IF THERE ARE OCCUPATIONS; EDUCATIONAL PROGRAMS;
OR SCHOOLS YOU WANT INFORMATION ABOUT;
TYPE IN: INFO
?INFO
THREE KINDS OF INFORMATION ARE STORED IN THE COMPUTER:
- - - OCCUPATIONS: LOCAL; STATE; AND NATIONAL LABOR MARKET
INFORMATION THAT IS CONTINUOUSLY UPDATED.
TYPE IN 'DESC' AND A 4-DIGIT OCCUPATION CODE
(EXAMPLE: DESC 1684). YOU MAY ALSO FIND OCCU-
PATIONAL BIBLIOGRAPHIES (BIB); VISITS FOR LANE
COUNTY AND NEWBERG IN THE PORTLAND AREA (VISIT);
OCCUPATIONAL CLUBS (CLUBS); AND WAYS TO PREPARE
FOR OCCUPATIONS (PREP).

- - - PROGRAMS OF STUDY AND TRAINING: TYPICAL
COURSEWORK AND LIST OF SCHOOLS.
TYPE IN 'PROG' AND A 3-DIGIT PROGRAM CODE
EXAMPLE: PROG 131

- - - SCHOOLS: SERVICES AND COSTS OF SCHOOLS.
TYPE IN 'SCH'

YOU CAN FIND CODE LISTS IN YOUR HANDBOOK.

?PROG283
283 WELDING

DO YOU WANT TO SEE A DESCRIPTION OF THE PROGRAM? (TYPE IN: YES OR NO)
?YES

SEVERAL SCHOOLS OFFER WELDING PROGRAMS VARYING IN LENGTH FROM A 10-WEEK PROGRAM AT A PRIVATE VOCATIONAL SCHOOL TO AN OPTION WITHIN A 4-YEAR BACHELOR'S DEGREE PROGRAM. MOST PROGRAMS TAKE 2 YEARS AT A COMMUNITY COLLEGE. WELDING PROGRAMS INTEND TO PROVIDE BASIC WELDING SKILLS SUCH AS ARC WELDING; CUTTING; MINOR PIPEFITTING; BLUEPRINT READING; ETC. FOR ENTRY LEVEL EMPLOYMENT (SEE DESC 5482 WELDERS). MOST INTEND TO PREPARE PEOPLE TO PASS A CERTIFIED WELDER EXAM.

COURSEWORK: VARIES; BUT MOST INCLUDES:

ARC WELDING	SHOP ARITHMETIC
GAS PROCESSES	BLUEPRINT READING
ESTIMATING	DRAFTING FUNDAMENTALS

INSTRUCTION CONSISTS OF LECTURES AND TECHNICAL READING IN THE CLASSROOM; ALONG WITH PLENTY OF SHOP EXPERIENCE. EMPHASIS IS ON LEARNING-BY-DOING. CONSULT SCHOOL CATALOGS FOR MORE COMPLETE DESCRIPTIONS OF CURRICULUM.

RELATED PROGRAMS: 277 DRAFTING; 288 CONSTRUCTION INDUSTRY PROGRAMS; 287 INDUSTRIAL MECHANICS (SEE CLATSOP & SW ORE. COMM. COLLEGES' INDUSTRIAL MECHANICS PROGRAMS FOR OPTIONS IN WELDING); 631 APPRENTICESHIP PROGRAMS.

DO YOU WANT A LIST OF SCHOOLS? (TYPE IN 'YES' OR 'NO').
?YES

3 EASTERN OREGON AREA SCHOOLS

- - - - - 22412 TREASURE VALLEY COMMUNITY COLLEGE - ONTARIO:
'WELDING TECHNOLOGY': 1-YEAR CERTIFICATE & 2-YEAR ASSOCIATE DEGREE PROGRAMS.
RESIDENT TUITION PER ACADEMIC YEAR: $396.
- - - - - 22411 BLUE MOUNTAIN COMMUNITY COLLEGE - PENDLETON:
'WELDING': 1-YEAR CERTIFICATE PROGRAM. COSTS: $15 - TOOLS.
RESIDENT TUITION PER ACADEMIC YEAR: $360.
- - - - - 22413 CENTRAL OREGON COMMUNITY COLLEGE - BEND:
'AUTOMOTIVE TECHNOLOGY': 2-YEAR ASSOCIATE DEGREE PROGRAM WITH WELDING AS A SPECIALTY OPTION. COSTS: $15 LAB FEE.
RESIDENT TUITION PER ACADEMIC YEAR: $345.

TEXT OMITTED AT USER REQUEST

- - - B - 22704 CLARK COLLEGE - VANCOUVER, WA.:
'WELDING TECHNOLOGY': 1-YR. CERTIFICATE & 2-YR. ASSOCIATE DEGREE PROGRAMS AVAILABLE. TOOLS COST APPROX. $240.
RESIDENT TUITION PER ACADEMIC YEAR: $249.
OUT-OF-STATE TUITION PER ACADEMIC YEAR: $681.
- - - - - 22712 PORTLAND COMMUNITY COLLEGE - PORTLAND:
'WELDING TECHNOLOGY': 1-YEAR CERTIFICATE & 2-YEAR ASSOCIATE DEGREE PROGRAMS. SPECIAL COSTS: TOOLS & EQUIPMENT NEEDED; COSTS VARY.
IN-DISTRICT RESIDENT TUITION PER ACADEMIC YEAR: $344.25.
OUT-OF-DISTRICT TUITION PER ACADEMIC YEAR: $648.
OUT-OF-STATE TUITION: $36/CREDIT HOUR.
- - - - - 22709 MT. HOOD COMMUNITY COLLEGE - GRESHAM:
'WELDING': 1-YEAR CERTIFICATE PROGRAM. SPECIAL COSTS: $30 WELDING FEE. STUDENTS MUST PROVIDE WELDING LEATHERS, GLOVES & SAFETY GLASSES.
IN-DISTRICT RESIDENT TUITION PER ACADEMIC YEAR: $345.
OUT-OF-DISTRICT TUITION PER ACADEMIC YEAR: $552.
OUT-OF-STATE TUITION PER ACADEMIC YEAR: $1,380.
- - - - - 49767 TECHNICAL TRAINING SERVICE - PORTLAND:
'WELDING': RESIDENCE PROGRAM. TUITION: $1,350; TOOLS: $106. PART-TIME=20 WEEKS. FULL-TIME=10 WEEKS.
'WELDING CORRESPONDENCE PROGRAM': TUITION: $675; TOOLS: $106. 60-75 HOURS OF HOME STUDY WITH AN OPTION FOR 150 HOURS OF RESIDENT TRAINING IN A SHOP.
- - - - - 22708 CLACKAMAS COMMUNITY COLLEGE - OREGON CITY:
'WELDING': 1-YEAR (4-TERM) CERTIFICATE PROGRAM. INSTRUCTION IS INDIVIDUALIZED.
'WELDING TECHNOLOGY': 2-YEAR ASSOCIATE DEGREE.
SPECIAL COSTS: $25/TERM LAB FEES; $75 CLOTHING.
IN-DISTRICT RESIDENT TUITION PER TERM: $110.
OUT-OF-DISTRICT TUITION PER TERM: $185.
OUT-OF-STATE TUITION PER TERM: $385.

3 MID-WILLAMETTE VALLEY & EUGENE AREA SCHOOLS

TEXT OMITTED AT USER REQUEST

3 SOUTHERN OREGON AREA SCHOOLS

- - - - - 22103 UMPQUA COMMUNITY COLLEGE - ROSEBURG:
'WELDING': 1-YEAR CERTIFICATE PROGRAM. EQUIPMENT FEES: $15-$30.
RESIDENT TUITION PER ACADEMIC YEAR: $375.
- - - - - 21418 OREGON INSTITUTE OF TECHNOLOGY - KLAMATH FALLS:
'WELDING PROCESSES TECHNOLOGY': 2-YEAR ASSOCIATE DEGREE PROGRAM INCLUDES COURSES IN PREPARATION FOR SHOP OPERATION & SALES & SERVICE OF WELDING EQUIPMENT AS WELL AS ACTUAL WELDING TRAINING. 4-YEAR BACHELOR'S PROGRAM EMPHASIZES INDUSTRIAL PROCESSES TECHNOLOGY, INCLUDING MGT. & BUSINESS ASPECTS.
RESIDENT TUITION & FEES PER ACADEMIC YEAR: $726.
- - - - - 21202 ROGUE COMMUNITY COLLEGE - GRANTS PASS:
'WELDING TECHNOLOGY': 1-YEAR CERTIFICATE PROGRAM. SPECIAL COSTS: WELDING FEES OF $45-75.
RESIDENT TUITION PER ACADEMIC YEAR: $360.

OUT-OF-STATE SCHOOLS

AVAILABLE AT YOUR INSTITUTION OR FROM THE PUBLISHER: SEE:
-'MAPPING YOUR EDUCATION,' 1977 (FOR ORE. AND WASH. SCHOOLS), SEE PP. 198-203. BELL PUBLISHING COMPANY, 4401 N. COAST HWY, NEWPORT, OR 97365. $6.85/SINGLE COPY. DISCOUNTS FOR LARGER ORDERS.

YOU CAN GET INFORMATION ABOUT THESE OR OTHER SCHOOLS BY TYPING IN 'SCH' AND UP TO THREE 5-DIGIT SCHOOL CODES SEPARATED BY COMMAS. EXAMPLE: SCH 44222,22709,21215
WHAT NEXT?
?
IF YOU NEED HELP: TYPE IN 'HELP'.
?VISIT5482
WHICH AREA ARE YOU IN:
PORTLAND METROPOLITAN AREA? (TYPE IN: PORT)
MID-WILLAMETTE AREA? (TYPE IN: WILL)
LANE COUNTY? (TYPE IN: LANE)
SOUTHERN OREGON? (TYPE IN: SO)
COOS-CURRY COUNTIES? (TYPE IN: COOS)
EASTERN OREGON? (TYPE IN: EAST)
OTHER AREA? (TYPE IN: OTHER)
?LANE
5482 WELDERS

PERSON TO CONTACT:
WAYNE GARDNER
WELDER
PHONE: 343-1827

FIRM NAME:
GARDNER RADIATOR WELDING SHOP
2030 W. 7TH PLACE
EUGENE

PERSON TO CONTACT:
GORDON PHILLIPPY
PLANT FOREMAN
PHONE: 688-6000

FIRM NAME:
IRECO INDUSTRIES INC.
1300 BETHEL DRIVE
EUGENE

SPECIAL INSTRUCTIONS: CALL ABOVE NO. FOR APPOINTMENT

PERSON TO CONTACT:
JENS BOYUM
TRUCK SHOP FOREMAN
PHONE: 747-4565
FIRM NAME:
MYRMO & SONS
3600 FRANKLIN BLVD.
EUGENE
SPECIAL INSTRUCTIONS: PLEASE PHONE FOR APPOINTMENT

PERSON TO CONTACT:
VERN GILLETT
WELDER & FARM MACHINE REPAIRER - RETIRED
PHONE: 998-6385
FIRM NAME:
1050 KALMIA ST.
JUNCTION CITY
SPECIAL INSTRUCTIONS: PHONE FOR APPOINTMENT

YOU MAY CONTACT ANY PERSON ON THE VISIT LIST. ALL HAVE VOLUNTEERED TO DISCUSS THEIR OCCUPATIONS AND MAY BE ABLE TO SHOW YOU WHERE THEY WORK. (THIS IS NOT A REFERRAL TO A JOB INTERVIEW).

IF YOU WANT SOME GOOD QUESTIONS TO ASK, TYPE: VISIT 1000

?VISIT1000
1000

QUESTIONS FOR AN OCCUPATIONAL VISIT

1. WHAT IS YOUR JOB LIKE?
   A TYPICAL DAY: WHAT DO YOU DO?
   WHAT KINDS OF PROBLEMS DO YOU DEAL WITH?
   WHAT KINDS OF DECISIONS DO YOU MAKE?

2. WHAT ARE THE MOST IMPORTANT PERSONAL SATISFACTIONS AND DISSATISFACTIONS CONNECTED WITH YOUR OCCUPATION?

3. WHAT SOCIAL OBLIGATIONS GO ALONG WITH A JOB IN YOUR OCCUPATION?
   ARE THERE ORGANIZATIONS YOU ARE EXPECTED TO JOIN?
   ARE THERE OTHER THINGS YOU ARE EXPECTED TO DO OUTSIDE OF WORK HOURS?

4. WHAT THINGS DID YOU DO BEFORE YOU ENTERED THIS OCCUPATION?
   WHICH HAVE BEEN MOST HELPFUL?
   WHAT OTHER JOBS CAN YOU GET WITH THE SAME BACKGROUND?

5. WHAT SORTS OF CHANGES ARE OCCURRING IN YOUR OCCUPATION?

6. HOW DOES A PERSON PROGRESS IN YOUR FIELD?
   WHAT IS THE BEST WAY TO ENTER THIS OCCUPATION?
   WHAT ARE THE ADVANCEMENT OPPORTUNITIES?
   WHAT ARE THE MAJOR QUALIFICATIONS FOR SUCCESS IN THIS PARTICULAR OCCUPATION?

Tech was authorized by an act of Congress and began as a two-year college. It soon received authorization for four-year and graduate programs and now operates both while still operating two-year offerings. Recently, Tech was commanded by Congress to become a land grant college and to develop as a model land grant or urban grant school for metropolitan areas of our nation. Recently, too, and this is surely some kind of record for progression of events in a school's history, the institution was folded into the structure of a new University of the District of Columbia.

The programs at Tech are organized by departments and clusters. Agriculture and Natural Resources, for example, is a department with two clusters: Agriculture, and Environmental Sciences and 16 degree programs. Students can study for bachelor degrees in agricultural economics, engineering and entomology. Also, Associate in Arts degrees are offered in fish, game and wildlife, food technology, forestry, plant and soil sciences, air pollution, water pollution, marine sciences and meteorology. When asked if some of this effort was misdirected for a city college, officials produced charts and graphs from their studies which showed agriculture of the type offered was indeed a growth industry both in the city and the metropolitan area. The city has more trees per capita than anywhere, it seems, and is ringed by government agricultural experiment stations, parks, national monuments and other hallowed grounds.

The president and his council led the original planning at Tech. It began with two massive studies of manpower demands of the area and projections of this demand into the future. Grounds were laid for annual updates of these data and a basic and important decision was made to initiate programs only in fields for which

demand was growing faster than population. The criteria of increase over and above population was set at two percent. The data from their studies showed that allied health professions comprised 35 percent of the professional occupations of the area and it was decided to budget 35 percent of the resources of the school to this area. Aerospace came in for a ten percent allocation, and so on. This decision above all is responsible for the excellent placement rate of Tech students, officials opine.

All sixty Tech programs are under constant review with placement loops and feedback as the key element in the process. The placement office supplies data to the president and his council each year on the placement rates of each program. Programs falling below an 87 percent placement rate are placed on probation and efforts are made to correct any weaknesses apparent in training or placement efforts. If placement rates continue to fall below 87 percent for two additional years, the program is dropped. Tech has tried to recruit a faculty with rather broad skills and it is expected that most can be used elsewhere in the program cluster. This remains to be seen. Presently, two programs are scheduled for elimination under these procedures.

Tech utilizes more labor data than most or all institutions in this study. As noted earlier, the first president of the institution was a commissioner of manpower in a major city (Atlanta) and brought a sophistication and slant to things quite different from the norm. At this writing, he is anticipating a move to another institution, having been selected as a choice for president by the search committee of this school.

Tech planners report careful study of their own survey data as sources of planning guidance along with Tomorrow's Manpower Needs and Occupational Information Outlook Handbook, both by the U.S. Department of Labor. Also, labor market projections from the City Planning Commission, the Board of Trade and the Tax and Finance Office. Tomorrow's Manpower Needs contains area projections, national trends and an occupational matrix related to manpower projections arranged in three volumes.

Tech's survey data consists of the initial projective data developed for the planning of the institution and an ongoing survey of employer needs which is quite tedious but also quite useful. Personnel offices at every firm in the area along with government agencies are surveyed in three year cycles either by mail or by telephone to ascertain types of personnel needed, outlook for hiring, beginning salaries, salary schedules, educational requirements, annual turnover of employees and strength of total personnel of the firm. A report is developed for the president and his council on employment outlook for each of the programs clusters based on this information. The rhetoric is reminiscent of reports of commodities exchanges the visitor listened to as a farm lad in Ohio in days gone by: aerospace is up and holding steady, marine sciences is off by two points, and so on.

The firms and agency surveys are valuable in another aspect of the Tech operations: placement seminars. Each year Tech sponsors 30 two-hour long placement seminars for its seniors. Placement personnel, personnel officers from firms and agencies, teachers from the program clusters involved and interested students comprise the seminar groups. After coffee and danish, each firm or agency

representative talks a bit about his or her operation, passes out literature and answers questions. The assembly then breaks into small groups with students circulating informally and making appointments for interviews at the home offices of the personnel officers.

Tech seniors are assembled early in the fall each year and put through a series of seminars on vita writing and interview techniques. Models of excellent vitas are provided, videotapes of good interviews are utilized along with a monopoly game of interviews. Students who have neglected to bone up on the products the company makes before the interview lose all their money and must return to Start, for example.

Tech officials seem quite pleased with the amount of labor market data available but feel much of it is too general and that updates of the data for SMSAs would be extremely valuable. They feel that much of what they do could be utilized quite easily elsewhere and the visitor was inclined to agree with this opinion. The area area surveys and projections can be valuable anywhere as can the employer rolling surveys. One of the more valuable aspects of their work is the treatment accorded government employment. Fully 20 percent of the total labor force in America is comprised of local, state and federal government workers but employment descriptions are often amorphous for this area. Tech surveys break these data out to show the demand according to occupational clusters. The Fairfax payroll, for example, might include a certain number of electrical, civil and mechanical engineers, economists who plan and biologists who inspect things. If described in these terms (engineers, economists, biologists) training demands become much

more explicit than when described as planners and inspectors.

Tech has also followed up their graduates and fed their follow-up data back to both the president and his council and to program officers and faculty. Data on employer satisfaction with their employees and employee satisfaction with their educational experiences are routinely collected and pumped into decision centers. The visitor was taken to the board room of the president's council and the huge, permanent wall charts and tables found there portrayed the entire operation of the programs at the present moment in time in their entirety. One had the feeling of visiting a command post in the Pentagon. Each cluster and accompanying program was listed as was its faculty and student strength, costs and output. The latter was described in terms of graduates and placement.

Tech occupies a new campus in the northwest section of the city and has satellite campuses at the Washington National Airport, where a huge hangar and several supporting buildings are utilized for aerospace technology instruction, and Beltsville, Maryland where much of the agricultural instruction takes place. Like many schools in this study, internship opportunities are numerous and students take full advantage of them. A federally funded cooperative education program fuels this effort.

Remarkable in the Tech operation is the role and scope of the placement operations. Placement is operated by a Placement Bureau Service and it urges students to register with them as a freshman, begin a placement file and to keep in touch. The bureau advertise heavily for students to come in and talk to their counselors about their career choices, get lined up for summer jobs, talk about

transfers to other colleges and entry into graduate school. Placement runs the placement seminars described earlier, operates a career library, an ongoing seminar on vita preparation and interview training and offers civil service job information.

The extensive surveys and data updates described earlier are products of the placement bureau as is the reports to the president and his council and the follow-up surveys of the graduates. Four professionals carry this workload along with a large number of student interns from the cooperative education program and work study students from a variety of disciplines. The bureau occupies a suite of offices diagonally across an open space floor of professionals from the president's office and the director is a member of the president's council.

— The American Association of University Professors is the bargaining unit for the 240 faculty members at Washington Tech. To date the officials have had no difficulty in operating their policies regarding phasing of programs. Most faculty have been carefully apprised of the situation and the policies regarding program phase-in and phase-out. As noted earlier, they are polytechnique in both capabilities and outlooks, the school operates on a cluster concept for programming and a faculty member can look forward to lateral movement within his program cluster if his or her primary teaching program is phased out.

Willamette University

To reach the office of the dean of the College of Arts and Sciences at Willamette University, the visitor climbs a sprawling, carpeted, winding staircase in the new administrative services building, passes a student lounge and enters a library of labor market materials and equipment to facilitate its study. In the back of this arrangement are the modern and commodious offices of the dean. Next door is the assistant dean who presides over the career library and the placement activities of the school. Such is the new look at Willamette, an old line liberal arts university which tradition counts among the very best of the small universities in the country.

Willamette is located in Salem, Oregon and occupies a beautiful campus across the street from the State Capitol. Its opening fall enrollment for 1977 was 1750 students who were selected from an applicant pool of three times this figure. It is a tidy school consisting of a college of liberal arts, a law school and a school of administration which trains for both business and public affairs administration. Many of Oregon's leaders come from Willamette.

In addition to establishment of the career library and expanding the placement counseling and interviewing, Willamette has reinstituted the minor, and added new programs with what their studies indicate is labor market currency: Environmental Science, Public Policy, Engineering, Music Therapy and International Studies. The dean of the College of Arts and Sciences was hard at work on a new program in Communications and Public Contacts when visited in the fall of 1977. Music Therapy is attracting national attention to the school.

All of this came about as a result of an invitation to join the Oregon Interinstitutional Consortium for Career Education, a group of colleges and universities which came together to carry out the mandates of the Oregon legislature to afford more and better career education and information to Oregon public school students. Leadership on the campus for this involvement came primarily from the small education department in the early years. The College Placement Council's 1974 book: Four Year Liberal Arts Graduates, a rising chorus of concerns about jobs and a tight labor market from students and news articles about the pending drop in the base of traditional applicants to college all seem to have combined to cause Willamette planners to expand their efforts at melding careers and liberal arts education on a university-wide basis. The placement council noted that three-fourths of the employees in their 1974 survey indicated that liberal arts graduates comprised less than 10 percent of their new hires, down from a high of 69 percent in 1965. The firms noted that they would consider more liberal arts graduates if they had minor course sequences in business and/or internships or summer work in business. This alarming decrease in work opportunities for their graduates plus the hints from employers of ways and means to ameliorate the situation propelled Willamette and many other schools like it into an unprecedented effort to tie liberal learning more closely to work.

Willamette has wrestled most successfully with the problem of losing the essence of liberal arts education when and if career preparation is added to the experiences of students in liberal arts colleges. They have developed a rationale which revolves around the two elements as partners in an educative process which does not

involve the changing of a single course to any appreciable degree. Done well, they feel, liberal arts experiences develop an effectively functioning human being with perspectives and values leading to a fulfilling life. Career education, some of which is included in liberal arts courses such as economics or the new communications sequence, offers experiences designed to enable students to become aware of the many dimensions of the world of work, assess his personal attitudes, goals and abilities and develop entry level skills for initial employment. Once on the job, the planners theorize, the liberal arts graduate will rise by virtue of the breadth and depth afforded in his education and become the managers and strategists of the firms and agencies while those with narrow specialties of the professional schools are destined to become the technicians. This is an interesting theory and the visitor was hearing it for the second time in his travels. Time and only time will tell how true it is.

Willamette's new interdisciplinary double major or minor in communication skills illustrates their approach to liberal education with market currency as well as any. The program consists of 30 credits and is designed to complement an English or history major. Students are equipped to work in radio and T.V., on newspapers and magazines and most importantly, it seems, in public relations and public contacts for business, industry and agencies and institutions. Students take a year long course in mass media and society and advanced courses in speech and writing. Also, courses in visual and graphic communication, psychology and business law. All complete an internship and an accompanying seminar.

This program along with others was developed from surveys of the area and of the student body on the desirability of new programs. The state supplies an abundant amount of career information and market demand data, it seems, and this helps in decision making about programs. Program development and planning is quite traditional at Willamette. None of the new planning systems was in evidence and few of the officials were exactly clear on what they were. The president and his council carries most of the planning load at Willamette with ideas coming in from all quarters along with advice, solicited and otherwise. The system seems to work. Applications have held strong even in the face of tuition rises which now top $3000 per year. The school offers 28 undergraduate degree programs, employs upwards of 100 faculty members and has not had to cut back anywhere. Its endowment is $23 million, a tidy sum for a small university and its fund raising capacity, an index many theorists regard as the most important for private schools, is respectable and perhaps enviable.

Some 45 rather wealthy and influential persons comprise the trustee board and seem to be able to provide what is needed. The school is now completing a five year plan and unofficial reports indicate a call for a fund raising drive to increase the endowment to $30 million.

Collective bargaining has not come to Willamette and most faculty a visitor talked to seemed quite content with the new thrusts. As in many good liberal arts colleges, the faculty seems to genuinely like the students, the area and the college itself and will perhaps teach for less money because of this satisfaction in what they do and with whom and in what place they practice their profession.

Willamette students have an extraordinary opportunity to develop career insights through the career center the school operates. They can take field trips to firms and agencies, go to career day conferences, attend seminars on applying to graduate school, resumé writing, mock interviews, post college insurance and legal aid. They can browse in the commodious career library described earlier which includes 3550 pieces of material or more: occupational briefs, corporation brochures, material on graduate school and material on public agencies and institutions. They can be tested and inventoried for personal attributes, attend a residence hall lecture series on specific careers and take a post-college planning course for a ¼ course credit, a Willamette degree consists of 32 courses. Also, they can talk to out-of-town recruiters, visit local firms and agency personnel officers and use the "Send Me a Job" summer employment listings.

Two significant pieces of equipment are the computer terminal of the Oregon Career Information Service which nestles against the wall in the pile carpeted career library and the Needle Sort Interest Inventory positioned close by. Both disseminate career information on demand, supply and other aspects of some 290 careers which comprise over 90 percent of the careers in the Oregon work force. This is an advanced form of occupational information which serves 3200 Oregon schools, colleges, social agencies and institutions. The operation is managed from the University of Oregon and utilizes computers at this institution and three others in the state. The service is a self-supporting operation, a testimony to its effectiveness or at least its popularity. It is similar to the Michigan operation described earlier in these case studies and Oregon was one of the

original states comprising the pilot operation. How this network is impacting on Willamette operations is not known. The same is the case for other higher education institutions in the state. It is safe to say, however, that it does affect demand and supply for higher education programs. A separate case study is devoted to a description of the service in action and interviews with the staff at the main center of operations.

Willamette students can sort out occupational description cards in Needle Sort, a sort of do-it-yourself computer ingeniously devised to eliminate all cards with descriptions of job attributes students do not like by using a knitting needle or facsimile and job cards with holes and openings made up by a tool and die shop. If a student liked outdoor work but disliked indoor work, he inserts the needle into the card deck at the indoor/outdoor variable and lifts up. All indoor cards, those with half-moon shaped openings, fall out and the outdoor cards, those with holes stay in. Twenty or so insertions can be made to correspond with a like number of variable descriptions. The remaining few cards constitute a list of jobs and job descriptions most likely to appeal to the tastes and interests of the student.

The student then takes these cards and refers to a list of code numbers in a handbook which correspond to the jobs they want to explore further and enters these codes into the computer terminal. They receive a printout which describes the occupation in detail, the training requirements for entry into the field, the demand and supply picture for the next decade, a list of colleges and universities in Oregon which prepare for the job and their annual costs for attendance. A list of clubs and organizations replete with

names and addresses of officers is supplied along with suggested readings on the job and a list of workers in the field who have agreed to talk to students about the field and about what they do.

Willamette officials seem to like their labor market data and have few complaints about its availability/quality. By and large, the college and its planning are state oriented. As noted earlier, Willamette trains lawyers, leaders and techno-management personnel for Oregon's industries, farms and government. The CIS is also state oriented and has labor market data packaged more neatly than most colleges and universities would be able to package it and more neatly than most labor department operations have seen fit to package things. The CIS staff at the University of Oregon consists of 12 professional labor market analysts who work full-time on the 290 occupations in the system and provide annual updates for each while keeping an ear to the ground for new fields that may be emerging. The only flaws one could think of would be the concentration on the Oregon economy for analysis and the centralization of the information source exclusively where labor information is concerned. There is an inherent and unproven assumption in the operation that the choices afforded Oregon youth through the system will be sufficient no matter where they might choose to live and work. While unproven, the assumption might be true, especially when it is considered that 290 well researched and well presented job descriptions might be more valuable to students than many more poorly researched and poorly presented descriptions.

Willamette officials do not envision life in 1987 to be too much different at their school than life in 1977. They are planning, according to unofficial reports from the Five Year Planning Committee,

to maintain their present enrollment without too much difficulty. They recognize that the applicant pool will be smaller and that some schools will wind up with fewer freshmen because of this. But they don't think it will be they, a sort of survival of the fittest view which might be entirely accurate when all is considered.

They do plan to have every Willamette graduate more fully equipped to deal with the labor force and its requirements than has previously been the case and this in the final analysis is what their program is all about. A visitor who observes their operations up close comes away with the feeling that they will succeed.

SITE VISIT THEME ANALYSIS

Threads run through the descriptions of efforts to utilize labor market data at the seven institutions visited by the investigator. Some of the themes are universal, while others are specific to certain types of institutions.

A first theme is the concern that new programs must be developed and existing programs modified to assure greater labor market currency and labor market participation for graduates of these programs. Six of seven institutions were characterized by such concern and effort.

This theme bears out the findings gleaned from the analysis of the statistical data. These data showed an almost universal expansion of business and health sciences programs and the development of 61 other new programs in 17 occupational areas. The theme also reiterates the theme set forth in the introduction of the study regarding the demand for greater specificity in training by corporations, the existence of tight labor markets generally and the concern

of institutions about the employability of their graduates under these circumstances.

Shifts of students from low demand to high demand programs was another variation of this theme and this variation might be termed type specific. State schools in the visitation sample dealt with these shifts and the resulting reduction in enrollments by reducing the size of their faculties and staffs in teacher education, liberal arts and other programs affected, and increasing the faculty and staff in the business, health sciences and other high demand programs. The liberal arts colleges, on the other hand, maintained the size of faculty and staff in liberal arts programs and sought to raise them to the high demand category by melding liberal arts and career preparation. The new majors and minors in communications, public service and business at Alma and Willamette are cases in point.

A second theme is the concern for shrinking freshman applicant pools. This theme, like the first, was set forth in the introduction of the study. This theme was universal with all officials completely aware of trends in this area and laying plans to deal with the problems involved. These plans vary according to type of institution. State schools seem to lean toward involvement of older, women and minority students and the development of high demand programs as a key strategy. The private schools seem more inclined to develop high demand programs and to depend on their prestige and drawing power to attract students in spite of shrunken applicant pools.

A third theme is the increasing use of planning and the increased use of labor market data in planning. Great variety

characterizes this planning but the hoped for outcomes are the same: the charting of the most intelligent course possible for the future of the institution.

Labor market data in planning is mandated for the state schools by boards and commissions for the state schools in the site visit sample. The schools must include labor market projections for graduates of programs they propose to initiate. All of these schools must also plan rather vigorously because of state mandates and budgeting procedures.

Planning in the private schools proceeded from no mandate but was no less vigorous. Indeed, utilization of labor market data was perhaps more pronounced in private schools. This increased use of labor market data grew out of the concern for affording a greater labor market sophistication for liberal arts graduates, a fourth theme and perhaps one of the more interesting in the study.

This theme has several sides. Career-minded students in tight labor markets must be less casual than students of years gone by in preparing for labor market participation. All of the private schools were dealing with this fact in some way by providing labor market materials, career counseling, courses, seminars and more. The most sophisticated were the computer-based career counseling systems at Alma and Willamette.

Another side to the theme is the concern that programs of study offered students are indeed programs with labor market currency. This is troubling to many liberal arts colleges. Traditionally, knowledge has been divided into 20 or so departments ranging from art to zoology and these departments have been the standard units in the operations of liberal arts colleges. Where a state college

might have these traditional programs and add on others of a more vocational nature: mass media communications, journalism and the like, many liberal arts schools are reluctant to do this and others are given pause by the costs involved. Adding programs without entire college expansion simply siphons students from traditional programs with attendant increases in costs of instruction.

The private schools in the site visit sample are wrestling with this dilemma and seem to be coming up with satisfactory compromises. A few programs are added and students in the old programs are urged to take minors in the new areas, double majors or simply a few "professional sequence courses." Students in the English department under such an arrangement would take courses in the new communications program but still major in English. The new computer sciences program will have a few majors but will consider its main function to be that of providing minors and professional sequence courses for mathematics, and social science majors. The new business program will proceed in the same manner. As noted earlier, the rather universal expansion of business programs for the entire sample seems to have stemmed from finding by a 1974 study by the College Placement Council which showed that corporations were far less interested in hiring liberal arts graduates than in years gone by but were interested in hiring those with a working knowledge of the business world as witnessed by a few courses in business.

A fifth final theme is the presence of levers and generative forces which seem to account for the increased activity in labor market planning on the campuses. State mandates for labor market planning, and state formulas for credit hour budgeting drive the enterprise on in the state schools. The forces of the market

generate interest in the private institutions along with a genuine concern for the welfare of their graduates. Job difficulties for recent college graduates is a very real and a very disheartening fact. The schools are dedicated to the task of fitting their graduates to fend for themselves as intelligently as possible. Both private and public schools are completely aware of the coming reduction in traditional college age students and this realization spurs interest in labor market planning geared to attract a fair share of the truncated pool of applicants and to make up the expected shortfall with older, women and minority students. The latter are the growth markets for higher education for the rest of the century, it seems, and the schools are making the necessary arrangements to accommodate them. As noted earlier, this trend was more pronounced in public than in private colleges.

A sixth theme was the rather creative uses of labor market data in planning. This is remarkable when the sheer volume of data on the campuses is considered and when the problems of using labor market data in planning are clearly understood. Obsolescence, lack of regional or local specificity, and inaccuracy are the bane in this respect. The American economy is a live, ever changing organism with exogenous and endogenous factors constantly intruding and thus confounding any and all projections of what will happen over a time frame. The schools in the study used data from many sources: local seers on program advisory committees, computer storage discs and tapes, federal tomes, state studies, city and county planners, college studies, and consultant studies. Few officials seemed completely satisfied with their data sources. Programs were installed on the basis of all the information they could garner with no single

labor market data source predominating. A distillation of the data seems to be the order of the day. If a majority of the sources indicate a labor market demand for graduates, if campus study indicates student interest, if funds are available and if the program proposer makes a good case, the proposed program will probably be initiated.

A seventh and final theme is the desire on the part of the planners and other officials to learn more about what they are doing. Interest in the successes of their efforts is high and many are planning follow-up studies. Interest in national efforts of this nature was also high. At least two requests for the study were received by the investigator on every campus. Interest in outcomes is also high. Did the students actually get jobs as a result of the new programs and counseling and computer systems? Was the faculty productivity actually increased as a result of these efforts? Did the schools have greater success in attracting students? Can shortfalls in enrollment be truly dealt with by additions from the ranks of older, women and minority students? Are there better sources of labor market data on the horizon? Is there a better way to package and deliver labor market data in the college setting? A better way to translate this data into programs?

All of these questions and more were directed at the visitor who could only note in reply that further study was needed on all of this and that he hoped that his exploratory study would be followed by several research efforts to answer these questions. This need for further study is treated further in the next section which summarizes the findings of the study and discusses next steps.

SUMMARY AND NEEDS FOR FURTHER STUDY

Seventy-six colleges and universities were studied over a period of a year to identify and describe the nature and extent of uses of manpower and labor market data in their planning operations, to identify and describe program changes generated by uses of such data, to identify expressed needs for new types and forms of data, and to identify needs for further research and development. This was an exploratory study and further identification of the next steps in researching the area was central in its conduct. The institutions in the sample were nominated by a national panel as bellwether schools in planning with manpower and labor market data. Data generated to describe their enrollment, student/faculty ratios, SAT scores, number of departments and programs, and accreditation status indicated that the institutions were representative of the average college and university in the country. This finding held when the data were disaggregated according to type and control of school, i.e., public/private, two-year/four year.

The institutions forwarded planning manuals and reports to the investigator for descriptive analysis related to policy thrusts of their uses of labor market data in planning and for analysis related to the nature of the planning itself.

Officials of the institutions also responded to a 24 item, seven point Likert scale soliciting their ratings of the emphasis accorded 24 planning and policy initiatives related to uses of manpower and labor market data in planning. A second scale solicited a rating of the value accorded these policy initiative. Means and standard deviations were computed for these ratings and a two-way

analysis of variance was applied to ascertain the influence, if any, of type and control of institutions in response. The influences were found to be minimal. The ratings were then rank-ordered according to emphasis means.

A ten percent sample of the institutions was selected for in-depth, on-campus study. Selection was made on the basis of quantity and quality of labor market planning as indicated by planning material submitted and by scores compiled on the Likert rankings. The selection was stratified with efforts made to select representative institutions from the three major categories in the study: private liberal arts colleges, regional state universities and community colleges.

Seven institutions were visited and observed by the investigator with in-depth interviews carried out with key officials in the planning operations. Results of these site visits were recorded and a theme analysis was made of the generative forces in this planning, the thrust of the planning itself and the concerns of the officials about their operations, about needs for new labor market data and about needs for further research.

Findings

The data from the analysis of planning documents indicated that a majority of institutions utilized planning committees and planning offices in their operations, and had developed a policy document outlining the planning procedure. The majority projected student enrollments for a time frame, studied placement histories of their graduates and made projections of demands for graduates of programs. Utilization of labor market data was most pronounced in

the last effort. A majority of the state supported institutions were required to submit extensive data on labor market demands upon submission of new programs for state agency approval. Some were also required to submit data on program duplication as related to other schools in the state. Most of the planning operations also made cost projections for a time frame.

An analysis of planning systems utilized in the sample revealed that only a few of the commercial systems on the market were in use. Where such systems were used (26 institutions), modifications to fit the institution's needs seemed to be the norm.

The data from the Likert instrument revealed thrusts by institutions in the sample to use labor market data for broad policy initiatives. Seventeen of the initiatives on the instrument received ratings at or above the mean. The schools had used labor market data in concerted efforts to expand internship opportunities for their students, and to initiate or expand offerings in business, health sciences and 61 other programs ranging from gerontology to solar energy.

Labor market data was also pressed into service in initiating or expanding career planning centers and placement operations. The schools had expanded their lines of program brochures and included more labor market data in these documents and they had made them available to wider student "markets." They had studied historic placement rates of their graduates and, to a lesser extent, the skills the world of work demanded of them.

Local or institutional surveys and studies, state surveys and studies and the federal document Occupational Outlook Handbook led a list of 15 labor market data sources used by the institutions in

their planning operations. Chamber of Commerce, city/county planners, corporation planners, Boards of Trade, and city/county tax and finance offices were all tapped in some way as manpower and labor market data sources. The state surveys group included institutions in two states where state-wide computer-based occupational information systems were in operation as a service to planners and to students.

The in-depth site visits to institutions corroborated and greatly amplified many findings of the survey and document analyses. Threads running through the planning efforts on all campuses revealed common themes. The institutions (and the students) were very much aware of the twin problems of tight labor markets and shrunken birth rates and much of the planning was in this context. The general thrust was toward the provision of programs with labor market currency and the enrollment of students in these programs on a major, double major, minor or professional sequence (two or three courses) basis. The schools also offered an opportunity for their students to learn more about the labor market and to deal with it in a more sophisticated way. Almost all were reaching out to new markets: older students, women and minorities.

More labor market data and more accurate labor market data were major concerns on most campuses. Anxiety is generated in the ranks of planners quite easily, it seems, by the thought that the projected demand of their labor market analyses will not materialize and that a serious error will be made in the allocations of resources for a given program. Packaging and delivery of data was also mentioned as a concern, especially for local and regional planning.

Good data must often be generated by the institution itself and little effort to pool institutional efforts was apparent.

Needs for Further Study

A first need for further study is the generation of data on outcomes of this sort of planning. This was an exploratory study and was necessarily limited. Further study with this sample might yield valuable data on the efficacy of the operations. Do placement rates improve for institutions operating programs? Faculty productivity? Other indices? Some rough data were collected in this study but thorough analysis was precluded by the resources available.

A second study might also involve site visits for institutions near the mean of the sample. Schools visited in this study were perhaps the best that can be found in terms of program operations for the problems in question. Is there a significant drop-off in quality of effort as one studies the average institution in the sample? Those in the lower tenth of the sample?

1. Students might be studied to ascertain the impact of these sorts of programs on their lives and careers. Does more labor market data enable them to do better in the labor market? Are there differences in labor market experiences of liberal arts graduates who elected the internships and professional sequences and liberal arts graduates who stayed with the traditional experiences and courses?

The computer-based labor market information systems seem quite demanding of further study. The systems are surely impacting on college and universities in some way or, more likely, in myriad ways.

How does it affect planning? Demand and supply for credit hours? Are there dangers inherent in eight or ten analysts delivering all the authoritative labor market data college students and college planners might ever use? How many states now use these systems?

The new state commission requirements in some states that all requests for new program approval include labor market planning data should be studied. Is there a national trend in this direction? What types and forms of data are used? What weight is accorded these data in the decision-making process? Do these requirements result in reductions in over-supply of college trained manpower in certain fields? Do they result in more viable programs?

At least one state (Montana) was requiring a periodic review of all programs at state colleges to assure labor market currency. Are there others? What has been the experience here? The outcomes?

Generating labor market data for local and regional service areas has been a problem and a burden for the schools in this study. Would consortia which generated these data for use by all institutions in an area prove helpful?

If, in labor market planning, programs are to come and go on college campuses at an increasingly rapid rate, must staffing patterns in colleges and universities be different? Must faculty be recruited with an eye toward broader skills? Amenability to retraining? How does this relate to the current thrust toward faculty development on college campuses?

The new Industry/Occupation Planning Matrix should become available in some states in the very near future. This system can add greater specificity to demand projections. How will it be used in college and university planning? How effective will it be?

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APPENDIX

Excerpts on Uses of Labor Market Data in Program Approval and Program Review

Taken from policy memorandum on program review of the Minnesota Higher Education Coordinating Board, dated June, 1975, p. B-1.

"Cite evidence which illustrates demand for graduates with the training this new program would provide. This should include information on possible placement, evidence of need provided by future employers; projections of needs in the labor market by the U.S. Department of Labor or other appropriate sources. Relate the demand for graduates to the geographic scope of the program. If the program is directly job-related, note entry level, pre-service, in-service and upgrading features of the program."

"Indicate which other educational institutions in the state offer a similar program and contrast the program proposed by your university with existing programs. Include such factors as student characteristics, geographic area served, institutional mission, benefits to be derived and occupational outcomes."

"Describe any plans to coordinate this program with programs in other institutions. Indicate individuals involved in this coordination."

"Indicate the extent, if any, to which people other than faculty and administration were involved in the development of the program, (e.g., practicing professionals, students, the public, others)."

"Describe the nature and extent of student demand for this program."

"Indicate the type of student needs or interests this program is designed to serve both now and five years from now if any change in needs and interests is anticipated."

Excerpts on Uses of Labor Market Data in
Program Approval and Program Review

Taken from the Final Report of the Study of Higher Education in Montana, Montana Commission on Postsecondary Education, 1974, p. 15.

"Appropriate criteria for the review of existing programs will be developed over a period of time and will be subject to change as conditions alter. Therefore, we hesitate to specify them but believe they should take account of the following factors:"

"Indicators of present and future demand for graduates of the program.

"Positions achieved by graduates of the program."

"Positions achieved by persons enrolled in the program who may have achieved their educational objectives without completing requirements for the degree or certificate."

"Total production of graduates in the program area from all institutions in the state (and where appropriate, in the region or the nation

"Economic and/or qualitative improvements which might be achieved by elimination and/or consolidation of the program."

"General student interest, evaluation and demand for the program; morale of students in the program."

"Number of graduates from the program in each of the last five years."

Excerpts on Uses of Labor Market Data in Program Approval and Program Review

Taken from 1976 Report on Academic Program Audit and Review, University of Wisconsin System, Office of the Senior Vice President for Academic Affairs, Madison Campus and from notes of an interview with Donald Smith who holds the title of Senior Vice President.

"The University of Wisconsin System is a recently combined system consisting of 13 universities and 2 centers. Planning operations are centered at the system office at the Madison campus. A senior vice president for academic affairs is the chief planning officer. The elements of the planning operations consists of the following:

-- Consideration of requests for new programs through a proposal and review procedure where data on a thorough market analysis of demand is a key element. Evidence of demand can be presented from local surveys, federal labor data, employer surveys and assessment of placement records of similar programs in the state or region."

--"Continuous assessment of labor market needs for new programs through the efforts and offices of deans and directors."

--"Continuous audit and review of existing programs to assess placement patterns, enrollment and costs."

"A summary of specific recommendations on programs reviewed in 1975-76 shows:

-- Sixteen programs were recommended for phase-out, and admissions were suspended for another program pending further study. Low enrollments, adequate alternative options, few or no graduates and opportunities for cooperative interinstitutional programs were cited as reasons to phase out programs."

--"Twenty-two programs received recommendations for further study; e.g., study of ways to determine viability of the programs, strengthen enrollment, delineate mission of the program; determine critical mass of faculty for the program and examine degree requirements and degree structure.

"In-depth reviews of existing academic programs enable faculty and administrators to feel the pulse of the institution and become better able to identify strengths and weaknesses that need to be taken into account in future planning. For this reason, it is noted that the trend is for institutions to move toward the position that all programs should periodically be given an in-depth review."