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ABSTRACT

This paper defines and develops the use of instructional objectives in economic education. Such teaching technique is hypothesized to improve economic understanding through improved learning efficiency and evaluation of learning achieved. Instructional objectives are defined and exemplified, both in general literature and specific practice. In addition, the present extent of instructional objective use in economic education is surveyed, and research studies of instructional objective effect are reviewed. Recommendation is made for further research studies of instructional objective effect, for further implementation of instructional objectives in college economics programs, and for organizational (AEA, WEA, JCEE) activity and encouragement. A complete bibliography of instructional objective literature (construction, theory, implementation, research) is provided. (Author)

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Summary of Paper

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PHILOSOPHY, EFFECT, AND EXTENT OF USE**

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INSTRUCTIONAL OBJECTIVES IN ECONOMICS TEACHING:
PHILOSOPHY, EFFECT, AND EXTENT OF USE

Economic education, from an optimistic viewpoint, has experienced much progress in recent years, evidenced by accumulating research literature and by increased concern from economists and economics associations. [7,17,19,20] Research studies on various aspects of economic education are now published regularly in The Journal Of Economic Education, and also appear frequently in the American Economic Review. Further, the Joint Council On Economic Education (JCEE) conducts numerous projects to improve economic education, often in cooperation with State Councils and centers for economic education throughout the country.

Granted, then, that economic education has surely progressed and thus improved economic literacy, one may question the frequent concern over instructional (sometimes termed behavioral) objectives. Does not the literature make reference to effective teaching techniques as programmed instruction, television, and simulation gaming? [1,9,18] And has not evaluation of learning been researched from the standpoint of standardized tests (as TEU and TUCE) and value orientations? [11,16,28] Why, then, the concern over instructional objectives?

The importance of instructional objectives for economic education (or for other disciplines) lies both in further increasing the efficiency of teaching technique and in improving the evaluation of economics instruction. [5,27] Thus, concern with instructional objectives does not criticize or detract from research interest in alternative teaching techniques, but would seek to aid such techniques in promoting economic understanding. And evaluation of economic education gains would surely be improved if a more definite benchmark or standard were provided to measure learning

improvement. [6,14,30] On such grounds for improvement of learning, and especially given the economist's interest in efficiency and evaluation of "output" (Ever consider an "isoquant" of economic education with factors of alternative teaching techniques?), an examination of instructional objectives appears warranted and beneficial. [10]

Let us first examine in the following the philosophy and structure of instructional objectives, thus fully defining our subject and indicating areas of use. The following section examines research results of instructional objectives application, as well as surveying instructional objective use in economic education.

Philosophy and Structure of Instructional Objectives

Basically, an instructional objective is a statement of learning expectation to the student. To be more specific, an instructional objective would inform the student as to a.) exactly what he is to learn, b.) how he is to demonstrate such learning, c.) what satisfactory level of performance is required, and d.) a rationale for the learning. [2,5,21,25,27] The following statement may serve to exemplify the definition of an instructional objective:

The student will, during a 30-minute exam of 10 multiple-choice questions involving shifts of supply and demand market conditions, correctly identify 8 equilibrium price-quantity results. Such identification allows prediction of future market patterns.

Such a statement of learning expectation may appear rather complicated, but let us examine the educational philosophy embodied in such statement, as well as the resulting gains to the student. Note first that the student is specifically informed as to what learning is expected, both in terms of specific content and degree of accuracy. The philosophy is that the instructional process is to promote some learning behavior, and that both instructor and student must be fully aware of such expectation to achieve the desired

result. [5,6,27] Not only is the instructor required to think through and state exactly what learning he attempts to develop, but the student has clear responsibility to master a given body of concepts and applications. Perhaps more bluntly stated, the teaching philosophy is that if a learning goal is desired, that goal must be clearly specified (and, therefore, effort evaluated in terms of achievement), with instructor and student efforts directed towards its achievement. [5,6]

A further requirement (or at least a desirable element) of instructional objective technique is that the instructional objectives be stated in a pattern which approximates the learning process. This means that before the student may apply a concept or theory (as in the previous instructional objective example) he must first identify essential terms and definitions and comprehend basic principles and relationships. The instructional objectives should be stated, therefore, in a "progressive" pattern from simple identification to complex application, analysis, and evaluation. [2,3,5,27] Again, such statement forces the instructor to think through and state the required learning steps, while ensuring student mastery at each learning level.

What are the benefits from such involved statement of instructional objectives? Surely this question must be asked, for a considerable amount of time and effort is required (And any economist would be suspect not to attempt a cost-benefit analysis!), perhaps otherwise spent to develop alternative techniques described in economic education literature. As stated earlier, the benefits of instructional objective statement involve improvement both in teaching efficiency and evaluation of learning. [14,30] An initial benefit is that the instructor is forced (if not already done) to think through exactly what learning his teaching is to promote, how that learning must proceed (the progression from identification

to application), and how to determine if the desired learning is achieved by the student. While this is not an implied criticism of college teaching, a careful analysis of teaching inputs and outputs is often beneficial in clarifying exactly what results from the instructional process. [5,6] Surely there are obvious gains in efficiency and evaluation from the instructor's viewpoint.

Looking at this same instructional objective statement from the student's standpoint, learning efficiency is improved because specification of objectives focuses student effort on essential concepts. "Guessing games" (What will the prof ask on the midterm?) are replaced with definite responsibility to learn specified concepts, and exam questions only require the student to demonstrate pre-stated learning objectives. Further, the student knows his evaluation (grade) results directly from his effort in successfully mastering the learning objectives stated. [2,21]

From both instructor and student viewpoint, then, the use of instructional objectives should promote learning. Efforts expended by both groups should produce more demonstrated learning results, thus greater efficiency. And evaluation of that learning is pre-determined by statement of the instructional objective itself, thus providing a clear-cut indication of achievement. It should be further noted that use of instructional objectives does not preclude the use of other instructional techniques (television, computer, simulation, etc.) described in economic education literature. In fact, the use of instructional objectives together with an instructional approach best tailored to student learning abilities (that is, "individualized instruction") probably maximizes student learning and teaching efficiency. [10,13,15]

Effect of Instructional Objectives
and Extent of Use

Given the previous claims for benefits from use of instructional objectives, one may be justified in asking for research findings which illustrate gains in student learning from such approach. Further, one may ask how widespread is the use of instructional objectives in economic education. Unfortunately (a personal evaluation), the research literature is rather limited as to instructional objective effect, and the use of instructional objectives appears limited and difficult to define. [2,7,8, 24,31] While a brief survey of such use and effect is presented in the following, further study is surely recommended.

Instructional objectives are presently employed in economic education (and other disciplines) at all levels; elementary, secondary, community college, and four-year college and university. [8,24,31] And in some school districts and colleges the instructional objective process is quite thorough, including overall school/grade/college goals, specific instructional objectives in a learning hierarchy, testing procedure based on instructional objectives with remedial learning provision, and even teacher evaluation based on students' learning achievements. [26,31] However, the general use of instructional objectives appears rather spotty and incomplete for economic education, with many instructional objectives poorly stated and evaluation loosely linked to those objectives.

In the author's own survey of community college economics departments (224 responses from 1,023 questionnaires) in 1971, 40.2% replied they now used instructional objectives, and another 30% indicated future use was planned. [26] However, many of the affirmative responses appeared to consider a course outline as constituting specific instructional objectives, and very few (perhaps 5%) employed a complete integration of instructional

objectives, audio-visual/programmed techniques, and evaluation. There does appear to be great demand for preparation (by AEA, WEA, JCEE, etc.) of instructional objectives for economic education, as 87.3% expressed interest in such availability, and 58.3% had some background in writing or working with instructional objectives. [26,30]

In viewing the present use of instructional objectives in economic education, then, there appears to be high and increasing interest in such technique, though much effort is required for widespread, effective implementation. Perhaps wider usage of instructional objectives would be furthered by AEA, WEA, or JCEE projects and encouragement. [30] And perhaps economist inspection of presently-prepared instructional objectives for economic education may generate greater interest and use. [29]

Or perhaps instructional objective employment would increase if numerous research studies reported highly significant learning gains in economic education, such benefit thus justifying the large effort and cost involved. As yet, however, research studies on instructional objective effect (especially in economic education) are both few in number and inconclusive in impact on learning. [8,31] In the author's own research on community college economics students a significant learning gain from instructional objective technique was not achieved (The .06 level attained was short of the .05 level of significance.), although student learning effort did appear more efficiently expended and student apprehension over course requirements did appear reduced. [25] And from a teacher's viewpoint, the required development of specific instructional objectives for economic theory was most "instructive!"

As for other research studies on instructional objective effect on learning achievement, few exist with definite results, particularly in

economic education. [7,20] Significant learning gains from instructional objectives technique were reported for college chemistry students [12], for secondary physical education students [23], and for a variety of other disciplines and levels. [8,31] Further, instructional objectives resulted in reduced student anxiety and learning time in other studies. [8,22] However, it would appear that much further research is required on instructional objective effect before the economic education movement would wholeheartedly adopt the instructional objective approach.

As a summary to this paper, the use of instructional objectives in economic education does appear to promise gains in efficiency of student learning and evaluation. Further, employment of instructional objectives does exist on a scattered basis at present, and a few research studies do suggest significant learning gains. Further effort in both research effect and implementation, then, appears worthwhile. (This is, admittedly, a subjective and personal evaluation.) Those wishing to further pursue instructional objectives in economic education might consult the prepared lists now available [4,29], the bibliographies and research studies of effects [2,5,8,20,31], and the literature describing the process of instructional objectives construction. [5,13,21,27]

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ABSTRACT

The certificate and diploma programs in seven 2-year colleges of New York State were studied to determine conditions under which such programs succeed and to advise other 2-year colleges of the feasibility of operating such programs or modifications of such programs. Specific objectives of the study were: (1) to view certificate and diploma programs in terms of administrative and fiscal support levels, curricula, staffing patterns, selection, counseling, instruction and placement of students, regional relations, and attitudes toward programs of key parties involved; (2) to determine conditions under which programs or program elements achieve success as measured by program goals and the judgments of on-site personnel as to how well these goals are met; (3) to suggest conditions under which program or program elements may be successful if used in other two-year college settings; and (4) to report findings and recommendation to the New York State Education Department and other appropriate agencies and individuals. Procedures employed in the study were a literature search, on-site visits to each of the colleges, interviews, requests for written information, and a student questionnaire. The study findings, which are presented in detail, relate to Administration and Organization, Student Personnel Services, Instruction, Regional Relationships, and The Responsibility of State Government. The views of students as to recruitment, program quality, and college services are provided. Forty-one recommendations are made. Appendixes are the Request for Data; Sample Interview Schedules; Individuals Interviewed; Letter, Student Questionnaire, and Results; and Selected Written Sources of Information. (DB)

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A Project Report

ED 078825

EVALUATION OF SELECTED TWO-YEAR COLLEGE CERTIFICATE AND DIPLOMA PROGRAMS

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I INTRODUCTION

Purposes

The study was designed to undertake an intensive examination and evaluation of certificate and diploma programs in seven two-year colleges of New York State--the Agricultural and Technical College at Alfred, the Agricultural and Technical College at Delhi, Hudson Valley Community College, Orange County Community College, Sullivan County Community College, Tompkins-Cortland Community College, and Ulster County Community College--in order to determine conditions under which such programs succeed and to advise other two-year colleges of the feasibility of operating such programs or modifications of such programs. Specific objectives of the study were defined as:

A. To view certificate and diploma programs in terms of administrative and fiscal support levels, curricula, staffing patterns, selection, counseling, instruction and placement of students, regional relations, and attitudes toward programs of key parties involved.

B. To determine conditions under which programs or program elements achieve success as measured by program goals and the judgments of on-site personnel as to how well these goals are met.

C. To suggest conditions under which programs or program elements may be successful if used in other two-year college settings.

D. To report findings and recommendations to the New York State Education Department and other appropriate agencies and individuals.

The following questions were prepared to elaborate on the purposes of the study and guide design and procedural stages:

1. Within the framework of institutional long range goals and development plans, what are the program goals for each of the designated diploma and certificate programs? How and by whom are these goals set, met, reviewed and revised?

2. On what criteria and by whom are curricula developed for each of the designated programs? How do curricula provide for cumulative experiences, developmental knowledge and skills, adequate preparation for job entry? How are curricula articulated with secondary school level programs, with other offerings of the institutions, with job requirements? How and by whom are curricular decisions made, reviewed, changed?

3. What are staffing patterns for each program? How are staff selected, by whom, and on what criteria--how are staff evaluated and rewarded; and by whom and on what criteria? How do staff compare and contrast in selection, standards and status with institutional staff of comparable rank in other programs? Is staff part-time or full-time?

4. How and by whom are students selected for each program? How and by whom are they instructed, counseled, evaluated, graded, placed, and followed-up? Specifically, how are theory and practice related in instruction? What are success and failure patterns in school and later on the job? How does the treatment of students in the designated programs compare and contrast with that of students in other programs?

Specifically, how and by whom are disadvantaged students assisted in overcoming learning handicaps?

5. What are the administrative support levels for each designated program as these can be judged by fiscal support, input per student, teaching loads and supports, counselor to student ratios, learning resource center and other instructional support levels per program, etc.? How does the administrative support level for each designated program compare with that for other programs in the institution? How and by whom are administrative support decisions made affecting designated programs?

6. How are programs managed within the college's region? How are students and staff recruited? What are relations with area school districts, BOCES, private schools, other collegiate institutions? How and by whom are employment and job market data assembled, reviewed, revised? Specifically, what are the roles of employers, personnel managers, labor union officials, BOCES occupational instructors and administrators in the region? To what degree does each program appear to be utilizing effectively resources of the region?

7. How does the "environmental press" of the institution affect students in the designated programs in comparison with students in the institution generally? What appear to be the institutional "images" of the certificate and diploma programs in contrast to other programs? Do diploma and certificate bound students, generally, take a full part in co-curricular and social activities, in athletics, in publications, etc.? Are there hard data on which to judge these questions?

8. To the degree to which it can be determined, what has been the record on job entry, job growth and job satisfaction for graduates of each of the designated programs?

9. What plans does each institution have for programs designated "successful", "promising" and "unsuccessful"? What new or expanded programs are contemplated? How and by whom will decisions of this sort be made?

10. What are the attitudes concerning each program, or program element, of students, staff members, administrators, counselors, employers, others?

11. In general, are designated programs housed and equipped well enough to get assigned work done? What appear to be strengths, deficiencies, urgent needs? How and by whom are decisions in this area made?

12. In summary, what conditions appear to support or facilitate certificate and diploma programs designated as "successful", "promising" or "unsuccessful"? What conditions appear to block or inhibit programs in all three designated categories?

13. In summary, under what conditions have certain designated programs been "successful" or "promising" or "unsuccessful"? What are conditions under which certificate and diploma programs are likely to be successful or unsuccessful in other institutions?

Sample

The Bureau of Two-Year College Programs, New York State Education Department, proposed six institutions as the sample for study: Alfred, Delhi, Hudson Valley, Orange, Sullivan, and Ulster. At the suggestion of the investigator, Tompkins-Cortland was added to the sample because of certain newer certificate programs being operated there. The sample of seven colleges was considered to be well representative of institutions offering certificate and diploma programs and to contain examples of most of the normally offered programs of these types. Except in the case of Tompkins-Cortland Community College, most programs are operated within the regular academic schedule.

Certificate and diploma programs at the seven institutions studied follow:

Agricultural and Technical College at Alfred: automotive service, building construction, business office skills, drafting, electrical construction, food service.

Agricultural and Technical College at Delhi: automotive mechanics, beginning office worker, carpentry, drafting, electricity, institutional grounds keeping, masonry, practical nursing, plumbing and pipe fitting, refrigeration and air conditioning, secretarial studies, welding.

Hudson Valley Community College: automotive mechanics, electrical construction and maintenance, drafting, dental assisting, general business, machine tool operation, refrigeration mechanics.

Orange County Community College: television repair.

Sullivan County Community College: air and water pollution control, drafting, medical lab assisting, office assistant-stenographer, surveying.

Tompkins-Cortland Community College: construction technology, human services, mechanical technology, licensed practical nursing.

Ulster County Community College: business office skills technology, design drafting, drafting, merchandising, landscape development and maintenance (in planning).

Procedures

The following procedures were employed in the study:

A. A research team was recruited consisting of Frederick H. Stutz, Chief Investigator; B. Michael Closson, Research Associate; John C. Malotte and Donovan W. Russell, Research Assistants; and Janet C. Singer, Secretary.

B. A preliminary search of the literature on two-year colleges, on the seven colleges in the sample, and on State University of New York and New York State Education Department relations with two-year colleges was undertaken. Relevant sections of the New York State Plan for Administration of Occupational Education were studied.

C. Staff members made on-site visits to each of the seven colleges to meet with central administrative officers and others with special responsibilities to certificate and diploma programs. Efforts were made to

obtain a general orientation to each college and especially to certificate and diploma programs in each college setting. Institutional representatives were asked to informally appraise certificate and diploma programs as to their achievement of goals set for them. Published and non-published materials on the colleges and programs were obtained. Institutional representatives were asked to respond to preliminary questions and to supply certain sorts of specific information. The institutions were generous of time and information; these orientation visits were most helpful.

D. The staff prepared interview schedules based on purposes and research questions set forth in a previous section of this report. Samples of each interview schedule will be found in Appendix B, pp.142.

E. Staff members interviewed Lawrence E. Gray, Chief, Bureau of Two-Year College Programs, State Education Department; Paul C. Chakonas, Associate in Higher Occupational Education of that Bureau; and Robert M. Fraser, Assistant University Dean for Two-Year Colleges, State University of New York. Purposes of these interviews were to obtain a general orientation to SUNY and SED relations with two-year colleges and a specific idea of state planning and direction for occupational education in two-year colleges.

F. A letter was sent to a liaison staff member at each institution in the sample requesting specific information on admissions, course and program enrollments,

counseling and placement, instruction and curriculum, fiscal support levels, equipment and space, organization and other matters affecting certificate and diploma programs. A sample copy of this written request for precise information is attached as Appendix A, pp.140.

G. The study team visited each of the seven two-year colleges and conducted in-depth interviews, starting with Tompkins-Cortland Community College. Techniques and schedules were slightly revised as a result of the experience at that college. All members of the staff except the secretary interviewed on all seven campuses during either the preliminary or major campus visits. These same staff members also engaged in interviews with knowledgeable persons off campus but in the regions of the colleges. While one staff member concentrated in the area of central administration, finance and governance, another specialized in student and staff personnel services, a third looked especially at instruction and curriculum, while a fourth viewed college relations with the surrounding region. Interview schedules are attached as Appendix B, pp.142.

A listing of specific individuals interviewed will be found in Appendix C, pp.162. For each of the colleges, wherever it was feasible, interviews were held with program directors and instructors, presidents or other central administrative officers, finance officers, counseling, admissions and placement officers, chairmen of departments or divisions housing or related to certificate and diploma

programs, librarians, staff members from the arts and sciences, planning officers, trustees or council members, members of advisory committees to programs, BOCES and high school administrators and counselors, employers, representatives of agencies representing the poor and minority groups, and other appropriate persons.

Staff members were well received. Over 150 persons contributed time and talent to these interviews. Almost every person contacted evidenced willingness to be interviewed. The staff regrets its own inability to find the time necessary to contact other individuals. But the interview data provided major substance and direction for the study; it is used heavily in the sections on findings and recommendations.

H. Written materials were studied and analyzed, and are also utilized in sections on findings and recommendations. A list of major written sources appears in Appendix E, pp.178.

I. A questionnaire to students, seeking their views on certificate and diploma programs in which they were enrolled, was sent, with an accompanying letter, to 904 individuals. The number of replies used in analyzing questionnaire information is 359, a nearly 40% response, which the investigators consider quite adequate for their purposes. Copies of the questionnaire instrument, the accompanying letter, and a tabulation of responses are shown in Appendix D, pp.171. An interpretation of questionnaire responses is

given in section on views of students, pp.106.

J. Utilizing interviews, the literature and questionnaire responses, the investigators held a series of staff seminars and, on the basis of these discussions, wrote the report:

Limitations: The study is a limited one. It focuses on one sort of program in a total institutional setting; there is a risk of myopia and distortion in such an approach. It examines a selected sampling of only seven two-year colleges; findings and recommendations must be interpreted with this selected sampling in mind. The regional settings for each institution were studied only lightly, with interviews held with only a small number of persons off campus. The investigators do not know as much as they should about the regional relations of each institution. Finally, the study is limited by its own procedures--interviewing, questionnaire results and the limited number of written sources available give the investigators a less than complete picture of each of the colleges.

Strengths: The study has distinct strengths. Concentration on certificate and diploma programs met a specific need expressed in governmental planning and by two-year college officers. This narrow focus also made it possible for the staff to look quite carefully at one segment of the college's operations. On-site interviews resulted in obtaining a more realistic total picture of the institutions and their

programs than could have been ascertained in any other way. We feel fully competent, within the limitations expressed, to describe and interpret certificate and diploma programs at the seven institutions and to make certain general recommendations on the basis of these findings.

II THE COLLEGES

The seven colleges constituting the sample for this study are briefly discussed in this section. Only salient characteristics relevant to consideration of certificate/diploma programs are considered.

SUNY Agricultural and Technical College at Alfred

Located 75 miles south of Rochester in Allegany County, SUNY Agricultural and Technical College at Alfred is the oldest institution in this study, having been founded in 1908. At the present time the College enrolls approximately 3200 full-time students and employs 250 teaching faculty and professional staff members. The degrees of Associate in Applied Science, Associate in Science, and Associate in Arts are awarded by the College. The six academic divisions are: Agriculture, Arts and Science, Business, Engineering Technologies, Health Technologies, and the Vocational Division. A nine member council is the immediate governing board of the institution.

Sixteen miles to the southwest in the Genesee River village of Wellsville is located the College's Vocational Division which houses Alfred's certificate programs examined in this study. The 622 students and 37 faculty in this Division make it the largest certificate program population of any college in our study.

The Vocational Division was established in 1966 in order to fill a vacuum at Alfred in the training of skilled workers

and craftsmen. Starting with five two-year programs; Automotive Service, Building Construction, Drafting, Electrical Service, and Food Service, the College has subsequently established a one-year certificate program in Business Office Skills. There are 353 first year students and 269 second year students studying full-time in the various vocational programs.

Most of Alfred's certificate programs are of two years duration. The staff of the Vocational Division strongly advocates programs of this length because of their potential for comprehensiveness. A "learning to do by doing" philosophy dominates the curricula; e.g., actually building houses in the Building Construction program.

The second year students either specialize in a particular segment of a field or familiarize themselves in depth with various segments of an occupation. At the end of this time period few students encounter difficulties in translating their skills into jobs.

The setting in Wellsville appears to meet the Vocational Division's needs admirably. A good morale is evident on the campus and few students or staff express regret at not being closer to the main campus. This isolation obviously has some negative features; primarily difficulties in providing adequate student support services. Concern about the isolation has caused SUNY to question a permanent location on the Wellsville site. Nevertheless, an associate dean of students, a vocational coun-

selor, and a student activities director (based in a new student activities building) provide on-campus assistance to the student body. Many students also participate in some activities on the main campus. Vocational shops scattered around the village together with the students rooming throughout the area make the Vocational Division a community enterprise.

The Vocational Division programs are popular and serve a large section of New York State. All of the two-year programs have waiting lists and some run two shifts in order to accommodate more students. About 30% of the Vocational Division student body is from Allegany and its adjacent counties. Efforts are made to encourage applicants from the local region. Thirty per cent (30%) of the students are from the Buffalo area with the remainder from other sections of the state plus a handful from out-of-state. The student attrition rate for the 1971-72 winter quarter was 9%.

It does not appear that having a separate campus or two-year programs are pre-requisite conditions to operating successful certificate programs but, overall, the Wellsville operation is an unusual enterprise and worthy of study.

SUNY Agricultural and Technical College at Delhi

Established in 1913, this institution is one of six agricultural and technical colleges operated under the auspices of the State University of New York. It is located in the western Catskill Mountain region in the heart of rural

Delaware County. A local council of nine members directs the educational policies of the College.

Enrollment in the fall of 1971 stood at 2443 full-time students. This represents a ten-fold increase in size since 1955 (232 students) and signals the emergence of the College as a major educational institution. Delhi has seven instructional divisions: Agriculture; Business Management; Engineering Technologies; Hotel, Restaurant, and Food Services Management; Arts and Sciences; Continuing Education; and Vocational Education. The degrees of Associate in Applied Science, Associate in Science, and Associate in Arts are granted by the College in addition to certificates awarded for less than two-year programs. At present there are 135 full-time faculty in the institution.

One-half of the total student body are from within 100 miles of Delhi. However, in keeping with the state-wide orientation of agricultural and technical colleges, many of Delhi's students come from various parts of the state, including 30% from the New York metropolitan region and 6% from out-of-state.

The Vocational Education Division was established in 1968 and contains the certificate programs to which this study is directed. The Division is oriented toward training people for skilled and semi-skilled occupations. At present, it is made up of 319 students (276 men and 43 women), 18 instructors, and a director. Eleven departments within the Division are

presently offering a variety of programs: Drafting; Electricity; Institutional Grounds Keeper; Masonry; Licensed Practical Nursing; Plumbing, Heating and Pipe Fitting; Refrigeration and Air Conditioning; Welding; Automotive Mechanics; Business; and Carpentry. Programs are of one year's duration and most consist of two hours of theory and four hours of applied skills training per day. Some of the programs (e.g., Automotive Mechanics and Drafting) offer a second year option for students desiring more specialization.

Each department within the Division is assisted by an advisory committee of experts drawn from the surrounding region. Innovative instructional attempts, including the use of curriculum modules, are presently being undertaken. The majority of the programs are oversubscribed and must turn away applicants each year. There is an annual attrition rate of 12% for the Division.

The Vocational Education Division at Delhi is unique among the certificate programs covered by this study in that the great majority of its students live in college dormitories together with students in degree programs. This results in a high amount of personal interaction among the students in the various divisions. Overall, the faculty as well as the students of the Vocational Education Division appear to be well accepted by the campus community. Thus, Delhi proves that although situated in a separate division, certificate programs can be integrated into the total college environment.

Projections for the future include adding four programs to the Vocational Education Division and expanding its enrollment to 395 by 1975.

Hudson Valley Community College

Founded in 1953 with 88 students, Hudson Valley Community College has expanded to about 4,000 full-time students on a modern 125 acre campus in Troy. Sponsored by the Rensselaer County Legislature, the school serves the urban counties in the Albany area with 25% of its students from Rensselaer County, 40% from Albany County, and the remainder from the rest of the state, but largely from the capital district. The population of Albany and Rensselaer Counties is projected at 526,000 by the year 2000 from the 1970 figure of 439,000.

The area is heavily industrialized and the programs offered are geared accordingly. Begun as a technical institute, the school has maintained its emphasis on technical and practical education. In addition to numerous degree programs in the technologies, it offers seven certificate programs. Four of these are solely within the Certificate Division and are two years in length--Automotive Mechanics, Electrical Construction and Maintenance, Machinist and Machine Operator, and Refrigeration Mechanics. The other three programs are jointly run by the Certificate Division and the appropriate technical department. These three programs, each one

year in length, are Dental Assisting, Drafting, and General Business.

Total enrollment in the certificate programs is 525 or about one-eighth of the total student body.

The degree of support and visibility which these programs have varies. The Automotive Mechanics Program is well known, with a waiting list for admission being the norm. Other programs are less well known and hence have problems both on and off campus.

Additional occupational training is offered through the Urban Center which works with the unemployed and under-employed of the region. Administered by the College, the Urban Center offers short, non-degree programs with intensive career and personal guidance.

Hudson Valley Community College affords an interesting view of conditions under which certificate/diploma programs can be operated. Programs vary in degrees of status and effectiveness as judged on the campus. The mix of vocational and technical programs within the Certificate Division is promising despite certain rivalries across divisional lines. In an urban region the decision has been made to concentrate courses for the disadvantaged in a separate division. In an industrial area, promising steps in regional coordination of manpower development have been taken but much remains to be done. What the impact of adoption of the new A.C.S. degree on certificate programs will be is an intriguing question.

Orange County Community College

Opening in 1950 with 160 full-time students, Orange County Community College has since grown to over 2100 full-time and 3000 part-time students with most but not all served by the Middletown campus. The central campus is located on a 26 acre estate which includes modern buildings. Continuing Education uses other facilities in the County, most of which are in Newburgh and Goshen.

Serving Orange County over the next 25 years will require the College to deal with a rapidly changing county. An expected doubling of the population from 221,700 in 1970 to an estimated 435,000 by 1995 will see the County grow from its present small town, small industry orientation to becoming an extension of metropolitan New York.

The College is composed of five divisions: Biological and Health Sciences, Business Administration, Humanities, Physical Sciences, and Social and Behavioral Sciences. This year each division was limited to beginning one certificate program but only the Television Repair Program in Physical Sciences was created. Present enrollment in the program is 11. Anticipated enrollment for fall, 1972, is 16. The Television Repair Program operates as a separate entity with no academic interaction with the degree students. All teaching is done by one instructor. The only other division which had planned a certificate program was Business Administration,

though the enrollment potential for the specific program, Service Station Management, was too small for it to operate.

Excepting these two divisions, the school has a strong academic orientation with most of its practical course offerings concentrated in the non-degree Continuing Education Division. Credit obtained in these programs and in the Television Repair program may not be transferred to other programs at the College.

Orange County Community College is understandably proud of its academic strengths which are maintained in admissions, standards for instruction, emphasis on transfer, and the careful insulation of its one certificate/diploma program. But the College sits in a region where rapid economic and demographic changes are predicted. It will be instructive to observe whether the College can change, if necessary, in order to accommodate future needs of persons who seek job entry or upgrading via the certificate/diploma route.

Sullivan County Community College

Opening in temporary quarters in South Fallsburg in 1963 with a handful of students and staff, Sullivan County Community College in 1972 enrolled 1073 full-time students in the fall term and 913 in the spring term, with part-time enrollments of 164 and 162 in the two terms. The College has a professional staff of 94 and is about ready to occupy a new campus a few miles from the present site.

Fields of study at Sullivan County Community College include Business, Civil Technology, Commercial Art, Hotel Technology, Arts and Sciences, Mental Health Assisting, Public Health Technology, Science Laboratory Technology, and Medical Laboratory Assisting.

A look at enrollment figures for the class of 1971 shows Sullivan County Community College to be somewhat unique among community colleges studied. Of the total new class of 683, only 215, or less than a third, are residents of Sullivan County. Nassau provided 149 entrants with 62 coming from Suffolk, 51 from Queens, 43 from Broome, and appreciable numbers from Westchester and Kings Counties.

The reasons are not hard to find. Sullivan County has a population of approximately 50,000 persons, graduates only 700 high school seniors annually and sends many of these on to four-year institutions. The College must seek students from other sources and especially from the metropolitan area.

The County's small population and ailing resort industry give the College both problems and opportunities. Recruiting must be state-wide, placement in Sullivan is difficult, and the economic base of local support is limited. Nonetheless, most interviewees agreed that the County welcomes the College as an economic asset in its own right and, more importantly, as a means of attracting and helping to develop a more diversified economy. Though population and economic growth have

been modest, Sullivan may soon be impacted by the outward thrust of the metropolitan region.

Administrators indicate that the liberal arts at Sullivan will not become predominant (about 400 out of the 1000 students are in liberal arts studies), with continued emphasis to be given to vocational programs and to the economic and educational development of the region. In order to attract students from a state-wide base and to give impetus to county and regional development, it is necessary to hold a talented faculty and to feature innovative curricular and instructional modes. The 1970-71 presidential report reflects these emphases.

Given the announced missions of the College, the stressed need for economic development of the region and the technical-vocational emphasis of the total curriculum, it is somewhat surprising to find how limited the diploma programs are in size and scope. It is estimated that the Office Assistant-Stenographer program will have 9 graduates in June of 1972. Four persons are expected to complete the Drafting diploma program. Six persons will complete Surveying and 22 persons are expected to earn diplomas in Medical Laboratory Assisting. The largest graduate group, 29, is expected in Air and Water Pollution Control. Programs are normally one year in length.

Diploma programs are parts of divisions offering degree work; they are thus supported by larger units, and students in diploma programs may have options to transfer on into degree programs. Indeed, in some cases, the so-called "upside down"

curriculum is designed to have all students in a field of study do "hands on" work in the first year with options to enter employment or to go on for a somewhat more theoretical second year. College staff members seem to think well of this plan. Unusually careful attempts are being made to relate College diploma work to the needs of the poor and to "feeder" programs at the regional BOCES.

Like Tompkins-Cortland Community College, Sullivan is worth watching in the area of diploma programs. Some programs are innovative and apparently successful; nonetheless, programs of this sort face an uphill fight given the regional milieu and national demands for degrees. As it moves to a new campus, Sullivan County Community College may be at a crossroads in deciding how much stress to place on job-entry non-degree programs.

Tompkins-Cortland Community College

Youngest of the seven colleges surveyed, Tompkins-Cortland Community College opened its doors in 1968 to a full-time enrollment of 202 students in temporary quarters at Groton. The 1972 full-time enrollment is 876, the full-time professional staff numbers 54, and part-time enrollment in the spring semester (1972) is 703. The College estimates its 1975 full-time student population at 2043. Confirmed plans for a new campus at Dryden, a central location in the two counties, are completed.

Programs of study include Business Technologies, Engineering Technologies, Health Technologies, General Studies, and the university parallel program in liberal arts and sciences.

The population of Cortland and Tompkins Counties combined is estimated to be 135,400 by 1975. Tioga, Schuyler, and Cayuga Counties send appreciable numbers of workers into Tompkins County, and can also be considered as part of the normal admissions base for the College. Chenango, Chemung, and Seneca Counties are also within the region affected by the College. Economically, this region is dominated by education, being the location for Cornell University, Ithaca College, the SUNY College at Cortland, Wells and Elmira Colleges, and the Corning Community College as well as Tompkins-Cortland Community College. Employment in the two counties is heavily in the service industries of which education is the chief. Small manufacturing and retail trade follow as fairly substantial sources of employment. The region is neither distinctively urban nor industrial; population and economic growth predictions show steady but not dramatic growth.

In its certificate programs, the College appears to recognize regional characteristics. There are very few of these courses and these are offered through the Continuing Education Division, thus encouraging enrollments of employed

and older persons. Most certificate programs are part of degree program complexes. Programs in Human Services, Licensed Practical Nursing, and Secretarial Studies (not yet underway) serve areas of employment stable to the region. There are modest certificate programs as parts of degree programs in Mechanical and Construction Technologies, recent in origin, and aimed at employment entry levels in drafting, design, and architectural design. Total 1972 spring semester enrollments in all certificate programs is 75. These students are largely residents of Tompkins and Cortland Counties.

TC3 administrators believe that the College should serve the needs of people in the region as these are demonstrated. Thus, they support development of certificate programs as these meet regional needs. It is argued that certificate and other types of occupational education offerings will be most feasible if certain state restrictions can be lifted and if the College is able to develop modular scheduling and programming and various forms of individualized instruction. At present, it is in continuing education that work of a certificate nature flourishes; a substantial proportion of daytime students are in degree programs and targeted for transfer to four-year institutions. This is not a surprising situation in view of the regional context of the College.

The observer comes away with the view that TC3 is worth watching in the area of certificate programs. These face an

uphill fight for growth but are sufficiently innovative in management, community relations, and instruction to deserve attention. Two of the programs, the established Licensed Practical Nursing and the struggling but interesting Human Services, are especially interesting.

Ulster County Community College

Ulster County Community College, sponsored by the County of Ulster, is located on a 140 acre campus in Stone Ridge, Town of Marbletown. The College was established in 1961 and has developed steadily so that it now has a full-time enrollment of 1280 and a regular staff of 115.

The College began at a temporary location in Kingston. In 1967 a new campus was completed in a rural setting a few miles to the west of that city.

Ulster County is comparatively large, 1140 square miles in area. It extends 40 miles in a north-south direction, paralleling the Hudson River, and having an east-west dimension of 45 miles at the widest point. The County had a 1970 population of 140,000 and is estimated to grow rapidly to a 1985 figure of 2000,000. Much of the population is and will continue to be located near the Hudson River Valley in urban and suburban Saugerties, Kingston, and New Paltz.

While the County is projected to increase in population substantially in the next few years, so too is the Community

College. A SUNY study estimates a 1975 enrollment figure of 2600 students.

Most of the students at the College are presently enrolled in two-year degree programs, with only ten certificate program students as of the spring of 1972. These were in Merchandising, Business Office Skills (specializing in commercial typing, legal typing, and medical typing), Design Drafting, and Drafting. The College has not been able to attract the numbers of students it requires to maintain these programs, and some of them are facing elimination. The programs are administered by degree program divisions.

Ulster County has traditionally had a relatively large percentage of high school graduates go on to college. With the rising costs of higher education away from home, a growing number of young people are making use of the Community College. Most of the student body are residents of the County. People of the area seem rightfully proud of a school which offers good quality academic education. However, the area's developing industrial characteristics indicate a need for a comprehensive group of certificate offerings also. While the County ranks high in agricultural output, industrial expansion has stimulated population growth in recent years. The area's key position between New York City and Albany-Schenectady-Troy industrial centers has stimulated industrial development. Thus, the future of practically oriented certificate programs of study is very

important to the County and to the employment future of its young people. It will be instructive to view Ulster's responses to changing needs.

Observations

Certain characteristics of the institutions in the sample should be mentioned. First, the two agricultural and technical colleges have to be seen as in some ways quite distinct from the community colleges. Older and with successive waves of experience in vocational and career education, Alfred and Delhi have a tradition of preparing people directly for the world of work. Their newly developed vocational divisions are matched in size only by Hudson Valley among the community colleges studied.

Alfred and Delhi, like all the "ag and techs", are integral units of the State University system without a direct link to a local government, and have a council rather than a board of trustees as an institutional governing unit. Though each serves heavily the region in which it is located, acting thus like a community college, both seek and draw students from a wide area of New York. Public support comes to Alfred and Delhi from SUNY only. The only other major source of revenue is from student tuition. These two colleges are able to charge a lower tuition for certificate/diploma programs than for other programs.

The five community colleges have local sponsors (counties) as well as being linked to SUNY. They are designed as local or regional institutions even though some of them draw students heavily from other localities. Newer in origin, they have had to create certificate/diploma programs at the

same time as a variety of other offerings were established-- not an easy task. Their immediate units of governance are boards of trustees who in turn work with county legislatures and SUNY. Operating budgets are financed approximately by a one-third appropriation from SUNY, one-third from the local sponsor, and one-third from student tuition. Students from out of the county bring with them a contribution from their counties of residence. Current funding formulas are up in the air; our informants were not sure about the proportionate funding ratios for the near future.

Each of the seven colleges has certain unique features as the preceding profiles show. Each is located in a region with certain significant and distinctive characteristics. In attitude toward certificate/diploma programs their historic actions suggest the full range from disinterest at Orange through ambivalence at TC3 to cautious acceptance at Sullivan to thorough commitment at Alfred and Delhi. In terms of critical mass, only Alfred, Delhi and Hudson Valley have achieved the numbers and variations in programs to make our study fully worthwhile. But Sullivan and TC3 have certain programs and offer a future potential which make them useful to the sample. Ulster and Orange, too, have a potential, and have had some experience, and they are located in two regions where much change is predicted.

Except for Hudson Valley, the colleges lie outside the metropolitan portions of the state. In the time spent on

campus, the investigators felt a certain insulation from the central problems and pressures of the age. Even Hudson Valley sits on a high hill physically aloof from the urban sprawl of the Troy-Albany environs. But in point of fact, the apparently isolated colleges draw students from cities and populous suburbs. The others differ from Hudson Valley chiefly in that the latter works directly with inner-city populations through its Urban Center.

We cannot be blind to the fact of institutional and regional differences, nor to significant differences between the "ag and techs" and community colleges. Ideally, each program in each institution in its region should be considered as a case study. But given the time and resources at our disposal, we choose to consider findings and recommendations in the context of all the programs and institutions, however different one from the other. It is our belief that both findings and recommendations are sufficiently universal to be useful to two-year colleges generally.

III FINDINGS

Administration and Organization

Administrative Leadership

The success of certificate and diploma programs depends in large part on administrative leadership. Central administration can make or break programs of this sort. The presidents and their executive cabinets can, through staff recruiting, control of the planning process, relations with governmental units, and allocation of funds, order the priorities of their institutions. Moreover, they can set a style for institutions which militates in favor of or is prejudicial to career education vis-à-vis transfer programs. Though state regulations, faculty attitudes, student actions, trustee and other governmental positions, and societal views on college education all influence the status of certificate and diploma programs in two-year colleges, central administration on each campus is highly influential.

A number of administrators interviewed spoke warmly of the values of certificate or diploma programs. They see these as meeting regional economic needs, as raising and broadening the range of employment opportunities for young people, as providing training and upgrading in occupations for area residents, and as motivating many who would not otherwise seek a college education. Some view these programs as leading into degree work and, in some instances, into transfer to four-year institutions.

One respondent suggested that there will always be a need for collegiate programs of this sort as successive waves of such programs are upgraded to meet higher societal standards.

While administrators did not specifically oppose certificate/diploma programs, several pointed out difficulties of either a general or specific sort. There seems to be little demand for such programs in certain regions either among youth or older persons. Given the upwardly mobile nature of the society, most young people and their parents seek degree programs with secondary schools supporting such choices. For many on-the-job workers, non-credit evening courses seem to make more sense than the longer and often day-based certificate programs. Some administrators argued that incoming students deserve to have as many options open to them as possible with a full chance to start degree programs and plan transfer.

It was pointed out that certificate/diploma programs (especially of the one year type) lack status and are therefore not politically viable as colleges seek financial and political support for them. Advocacy of such programs in these regions could lead to difficulties in getting local funding and general support for all programs. Some respondents argued that state mandates concerning full-time enrollment and calendar serve as obstacles to development of shop-based "hands on" courses.

Most of the top administrators believed that certificate/diploma programs on their campuses were dealt with equitably in terms of administrative and fiscal supports in comparison with other types of programs. On three campuses, executives stressed plans to modify calendars and modes of instruction in ways which would benefit certificate/diploma and other career programs. Others argued that all programs received equitable and impartial treatment. Several persons remarked that vocational programs enjoyed conditions of equity even though they were relatively expensive to operate. On one campus the point was made that special library and counseling services were assigned to the vocational division.

In the interviews, however, equitable treatment for on-going certificate/diploma programs vis-à-vis others was stressed. Some respondents noted that in planning and development, with limited funds, new degree programs would win out over the non-degree ones. On two of the campuses in particular, the almost negligible amount of certificate/diploma work suggests that this has in fact happened. Several interviewees stated that to gain full institutional support it was necessary for certificate programs to be lodged within the more powerful and prestigious degree granting technologies.

It is worth noting that 33% of the students polled in the study did not believe that their certificate/diploma programs were considered by administration as being as important as other programs. Thus many students polled

view this matter differently from administrators interviewed on the subject.

In point of fact, public two-year colleges in New York State operate under explicit mandates to offer career programs leading to job entry and career development opportunities. Certificate/diploma work is one of the principal ways in which these mandates can be met. As previously cited, most top administrators on the seven campuses visited support certificate/diploma programs, albeit with a number of qualifications. Similar support was voiced by trustees, staff members in the arts and sciences, and key persons in the regions as well as by staff members closer to programs of this nature.

There are indications, however, that administrative leadership for certificate/diploma programs is not sufficiently vigorous on some of the campuses. The thrust for transfer programs and for degree work tends to relegate certificate programs to a subordinate role. This becomes evident in interviewing, in reading institutional literature, in viewing admissions and recruiting procedures, in studying student responses, and in examining institutional standards which are designed often to support traditional degree efforts. Even more important, perhaps, is a sort of implicit climate of opinion on some campuses which labels short-term, practical, certificate-awarding programs as nice but rather inconsequential. At colleges where central administrators behave as

though they considered such programs to be important components of their institutions, one senses how this is translated into institutional attitudes, policies, and procedures which result in strong and innovative certificate/diploma programs.

We urge top administrators in two-year colleges to exercise the power they have in developing appropriate certificate/diploma programs. Such leadership must take the form of an institutional image denoting these programs as fully worthy associates of programs leading to degrees. Such leadership must take the form of adopting institutional procedures and policies which will enable certificate/diploma programs to flourish--generous open admissions policies, thorough-going regional studies of employment opportunities and economic change and growth, skillful recruiting, adoption of faculty personnel policies designed to strengthen instruction, encouragement of appropriately diverse instructional and evaluative modes for such programs, and careful follow-up studies of graduates.

It is not difficult to discourage certificate/diploma programs. You can employ campus-wide admissions policies and procedures which discourage the very persons one might expect to attract to such programs. You can offer little financial support. You can ignore or "bury" such programs in catalogs and annual reports. You can publicly expect little growth in your official long range projections. You can be less than fully knowledgeable about the economy and

employment projections of the region. You can encourage journeymen instructors to become academics. You can ration the number of certificate programs by setting divisional quotas. You can assign responsibility to state government. Or you can write off such programs as not reflecting the upwardly mobile nature of the American society.

Organization

Certificate/diploma programs seem more likely to succeed if their critical mass (numbers of students, staff, physical spaces, etc.) is comparable to that of other programs on a campus or if such programs are smaller in numbers and spaces but are integral and respected parts of divisions or departments offering degree work also. It seems to take a sufficient aggregation of people and things to provide the base for high morale, instructional vitality, institutional and off-campus visibility and political power. Small and somewhat isolated certificate/diploma programs usually lead a precarious life. There are relatively few such programs at the colleges visited in this study.

Lodging a small certificate program in a larger division will not in itself insure success. The program must have a certain internal coherence within the division, being able to share in the sequence of instruction, in staffing and in facilities. Moreover, it is important that students in the division be able to move in and out of the certificate program

without prejudice. If the certificate program is one year in duration it is important that it result in performance levels sufficient for successful job entry and also for movement into a second year of study with opportunity to earn a degree. At present, this latter event is unusual. Both options, work and further study, should be available fully to qualified persons.

It can be tentatively argued that institutions offering certificate/diploma work should plan for sufficient critical mass to allow for operation of a separate division. This does not mean, however, that relations of certificate programs with parent technologies need to be either remote or difficult. An autonomous certificate division can ally its faculty and students as well as its curriculum to the work of degree granting divisions in a number of meaningful ways. The investigators did not pursue these relationships very fully but have an impression that separate certificate or vocational divisions do not fully exploit ways of allying themselves to parent technologies.

Whether certificate/diploma programs be housed in a separate division or embedded in a number of degree granting divisions, there should be a single administrative officer with over-all responsibility for such programs. This seems essential if the special needs of staff and students in such programs are to be taken into account and if certificate work on a campus is to have enough political clout to get along. It would be helpful if this administrator came

from a background in career education.

In summary, we would urge colleges to either undertake certificate/diploma programs with sufficient critical mass to be housed in separate divisions, or to make such programs integral and respected parts of degree granting divisions. Which ever option is used, a single administrative officer should have over-all responsibility for all certificate/diploma work on campus. Which ever option is used, every effort should be made to ally certificate work closely with parent technologies and to create conditions in which students can move easily from one type of program to another and staff can share in teaching both certificate and degree classes. Core courses common to both tracks can serve the interests of both efficiency and integration.

Effects of Regional Settings

Any discussion of administrative leadership and institutional organization for certificate/diploma programs must take account of regional differences. Each college must recognize distinctive needs and trends in its region. All the administrative talent and organizational adjustment available will not prop up programs for which there is no legitimate need or for which the institutional setting is absolutely inappropriate. To try to graft onto a rural setting programs designed for the urban poor may create damage to both the clients served and the college itself.

To try to force career and occupational studies on an institution which has committed itself to being a preparatory school for four-year institutions may be to abuse both career and transfer programs.

We sense, however, that among the seven colleges studied there are wide variations in the willingness and capacity to transcend regional limitations. The agricultural and technical colleges, bound by geography and history to a rural tradition, have moved rapidly to also serve the employment and economic needs of an urban and suburban society. One or two community colleges in rural or small city locales are beginning serious efforts to assist minorities and the poor in gaining their objectives. On the other hand, certain of the colleges appear to have accepted regional restrictions too readily and appear not to have exerted sufficient leadership to transcend these limitations. Two colleges have almost no offerings in the skilled trades on a certificate basis despite the fact that their regions are as prone to have job openings in these trades as are other institutions where offerings are sufficient.

In interviews, respondents showed considerable knowledge about the purposes and development of their institutions in the context of the regions in which the colleges are set. Most acknowledged the need to meet legitimate and articulated regional needs and to relate closely to other institutions of the region. Some affirmed the importance of a coordination of regional educational resources.

Despite the general support for close regional ties and for meeting regional needs, the investigators discovered relatively little thorough work relating college to a region as both move forward. Planning and development in a regional sense is more honored in conversation than in fact. There are conspicuous exceptions to this situation; some institutions have thorough-going planning studies and are organized well for development; some colleges are beginning to make good follow-up studies of career graduates. Formal institutional planning, of the limited sort required by SUNY is, of course, being done. But one doubts that on some of the campuses there is enough hard data to justify making decisions about regional needs and opportunities in the years ahead or to justify decisions about whether certificate/diploma work will succeed or not succeed.

College administration should be realistic about what and how many certificate/diploma programs are to be offered, and should not be persuaded or forced into programs which fit neither regional setting nor institutional character. But this realism should be accompanied by the leadership necessary to satisfy fully those regional needs which are evident. Because on some campuses there does not seem to be sufficient data or planning organization to determine present and future manpower development needs, administrators are urged to strengthen institutional research and development units. It is fully realistic, as we see it,

to know what sorts of programs not to offer, to know what unsatisfied regional needs can be met, to lead a region in understanding what it needs, and to have the data to plan practically for the future. Among the colleges we visited, some are in regions about to undergo dramatic changes--we hope that these institutions will be somewhat ahead of these changes. Where individual collegiate resources and local sponsors cannot undertake necessary research and development, we ask the units of state government to assist. (state responsibilities are dealt with on pp.100.)

Budgeting and Finance

Current State University of New York procedures and regulations for financial planning, budgeting, and cost accounting are based on a functional rather than a separate program or mission breakdown. Hence, the institutions studied tend to use largely functional breakdowns in working with state government, local sponsors, and trustees. To a large extent they use broad function breakdowns, i.e., instruction or salaries or plant maintenance or personnel services, rather than specifying the comparative costs of different sorts of programs or of identifying such specific programs or missions as certificate/diploma work. This means that it is difficult on each campus to identify instructional costs per program, and thus to allocate funds to programs, or develop new programs on that sort of

knowledge base. To some degree, financial officers are working in the dark. Many of them deplore this situation and hope to see SUNY move to a mission or program type of budgeting. Certain of the financial officers have moved farther than others in setting up program-based fiscal accounting for internal use; one of the colleges will report to SUNY using this base.

There is an assumption on the part of most fiscal officers that the certificate and degree programs leading to careers are more expensive per instructional unit than are comparable programs leading to transfer; high staff to student ratios, sophisticated materials, costly equipment, and consistently small enrollments are cited as among the reasons for this assumption. This study has not gone into the matter sufficiently to make any judgment. Moreover, institutional accounting schemes make it difficult for anyone to know for sure. But it is worth emphasizing that if certificate programs are deemed to be expensive, they are vulnerable in times of economic stringency.

Current procedures in cost accounting, as in institutional reporting, generally place stress on full-time enrollment and full-time load factors. This sort of reckoning has a tendency to encourage instruction to be locked in to traditional collegiate patterns and to inhibit experimentation with advanced standing, modular scheduling, individualizing of instruction, and graduation on a performance standards

basis--thus the very sorts of innovations which certificate/diploma programs need are discouraged by accounting schemes that calculate numbers of bodies in fixed settings for fixed periods of time. (This subject will be considered more fully in the section on instruction, pp.75 , and on state responsibilities, pp.100.)

For reviewing current certificate/diploma program costs and efficiency of operation and in planning for new programs of this sort, SUNY, local sponsors, and the institutions should adopt schemes of accounting and reporting which identify and cost out individual programs or missions. Program or mission reporting would probably benefit all collegiate financial planning ventures; certificate programs need to be identified and studied separately since they are assumed to be comparatively expensive.

In considering certificate/diploma and other types of career programs, fiscal accounting and planning should employ systems which will encourage rather than discourage individualization of instruction and instructional innovation.

Staff Personnel Policies and Procedures

Central administrators interviewed were in general agreement that the staff instructing in certificate/diploma programs were competent and that, within certain limitations, they were treated equitably in comparison with other faculty members. One institution reported no problem for non-degree staff members on a campus where others held degrees.

An administrator on another campus saw certificate/diploma faculty as indistinguishable from staff members in the technology degree programs. On some campuses, of course, faculty members teach in both types of programs. At one college the certificate faculty is largely employed by the continuing education director and separate from the full-time staff. One college has its certificate work on a separate campus and views this situation as conducive to autonomy and equity for that portion of the faculty.

Few respondents, however, were unqualified in judging certificate faculty as on a par with other colleagues or as having no distinct problems. One president found some insecurity among the journeymen members of the staff due to their different backgrounds and goals. Some difficulties were reported in trying to work out academic titles for certificate staff. On one campus it appeared that part-time certificate staff were paid at lower rates than were full-time persons. At three colleges it was suggested that moves to new campuses with separation of divisional staffs had led or might lead to a growing schism between career and transfer faculties with certificate people affected. There were occasional references to a certain subtle but observable snobbery on the part of some arts and sciences faculty members toward occupational or career studies (we encountered none of this in interviews with several faculty members in the liberal arts and technologies).

Interviews with both administrators and faculty members and a review of college policies and procedures leads the investigators to support the view that administration and faculty associations both work for equity for all staff members including those in certificate programs. There is also evidence to show that certificate/diploma instructors and administrators occupy full and respected roles on their campuses. Generally, there are no important obstacles in the way of individuals who come out of industry and the crafts and technologies to live in an academic community.

There are, however, certain personnel policies and procedures which need to be reformed if these faculty members are to be fully effective and to feel fully equal. Given the somewhat fragile position of certificate work on some of the campuses, these personnel policy reforms would significantly help the quality of instruction and the vitality of the programs.

Criteria for rank, title, and salary should recognize those types of expertise necessary for effective performance in one's field. For instructors in vocational and craft-type programs the expertise needed is gained in industrial or shop experience and in continuous development in the specialized field. For these individuals rank, title, and salary ought to be determined by the expertise they bring from past experience and the degree of success in keeping up-to-date. In the long run the realism and vitality of their

courses, the ability to help students to achieve performance standards, will depend on how expert staff members are and continue to be.

There are some instances in which certificate/diploma teachers are judged on formal college studies more than on field experience, and are encouraged or asked to take college courses and work for degrees. Occasionally we encountered the view that these men needed courses in education to become proficient in teaching. At one institution certificate faculty hold an academic title different from that of other staff. On at least one campus these certificate instructors held normal academic titles but were conspicuously low in rank as a group.

It is doubtful that a journeyman will become a good teacher because he takes education courses; and there is no reason why in-service workshops in teaching-learning procedures cannot be used to better advantage. For that matter, successful teachers might be asked to informally help newer colleagues. It is doubtful that pursuit of a college degree, no matter how commendable as a personal goal, will strengthen one as a journeyman teacher. In fact, these practices may lead instructors away from their fields of expertise, force them to get out of touch, or to use the pungent phrase of one administrator, "corrupt them with ivory towerism".

Certainly in some of the higher technologies associated with health services, engineering, and business, formal academic qualifications make good sense. But even here a premium should be placed on staying on top of one's field of expertise.

More and more, faculty pay and working conditions are determined in the negotiations of faculty associations or their committees with administrators, trustees, and county legislators. It becomes the responsibility of these several parties to set personnel policy which will encourage individuality and specialized expertise and will avoid a sort of academic or union lockstep in which differences are discouraged. We expect that certificate instructors, especially in the crafts, need to be fully recognized as skilled journeymen teachers with special study needs, special teaching assignments, and special ways of gaining promotion, tenure, and higher salary. But this approach should characterize personnel policy for an entire institution... (For consideration of the state role here see section on state responsibilities, pp.100.)

We recommend to administrators, faculty associations, trustees, and county legislators that faculty in certificate/diploma programs be treated with equity and as full citizens of the academic community. We also recommend that personnel policies be so drawn that they encourage this certificate faculty to stay abreast of their fields of expertise and to

be rewarded in rank and salary for so doing. We further recommend that administrators and faculty associations accord to certificate staff members opportunities to innovate without penalty, to have small classes, to use performance standards and modified calendars, to determine optimum contact hours in their fields; in short, to meet the conditions of their trades and vocations. But we would not deny the same degree of individual treatment to those in any other academic unit.

The Associate in Occupational Studies Degree

The Board of Regents has authorized a new two-year degree, the Associate in Occupational Studies, for use in occupational education programs requiring two years of study for completion and a high school or equivalency diploma for admission. One of the seven colleges studied has asked for authorization to use this degree. Because certificate/diploma programs would be chiefly affected by the new degree possibility, this subject was discussed with staff of each institution.

Top administrators and certificate staff members are divided in their views about the value of using this degree. Some take the position that it should be used if it will help students to gain both prestige and better jobs. Others argue that a degree will be especially helpful for those programs which are concerned with preparation for business and the health services where degrees are a long

accepted credential. Another argument for the use of the A.O.S. is that it would help to create a state-wide standard for occupational programs at the two-year college level which would benefit employers, students, and the institutions.

A number of reservations were expressed about the use of the A.O.S. Some respondents rejected it as a blow to the "credentialism" which is, in their view, too prevalent in the society. One respondent pointed out that if certificate programs were extended in length, raised in level of instruction, and made more difficult to enter, the inevitable result would be creation of a new series of one-year certificate/diploma programs to take the place of the old ones. Most reservations centered on the threat degrees would pose to the practical, job preparation nature of present certificate work. They contended that one-year, shop-centered programs leading to specific jobs are extremely valuable in themselves.

Examining the A.O.S. degree proposal in the context of certificate/diploma work at the colleges studied, the investigators view its potential effects on such work as largely adverse--a position which we found to be supported by a number of staff members on the campuses.

If certificate/diploma programs are lengthened, if course requirements are standardized, and if admissions requires a high school or equivalency degree, some of the strengths in present programs may be lost. Occupational

programs will be closed to large numbers of adults for whom a high school or equivalency diploma is an obstacle they will not or cannot overcome; the colleges will be admitting for credit programs even fewer than the now inadequate numbers of older workers, homemakers, the poor, and minorities. Fields of study which can be adequately completed in a year will be somewhat artificially inflated to two years in the interests of competition. The promising movement toward individualization based on performance standards may be weakened by prescribed requirements. Having the A.O.S. might discourage careful review and reform of certificate/diploma programs--the respectability of the degree could possibly serve to hide defects. More importantly, there is a threat that the practical and realistic nature of present programs would be lost in a scramble to achieve academic respectability.

The standard arguments for having A.O.S. degree programs have merit of course. Most important, such a move may give students more options and higher aspirations, may serve them in long-range career development. But the assets are outweighed by the potential liabilities. We would argue for retention of certificate/diploma programs even if an A.O.S. degree option is offered.

Two-year colleges should use the A.O.S. degree only where it fits well the special needs of occupational fields and never as a substitute for certificate/diploma programs.

There should always be one-year programs with a "hands on" emphasis, admitting openly from all ranks of society, and encouraging individual progress based on performance standards. In any case where the A.O.S. would seriously weaken the chance to have vital programs of this nature, it should be rejected.

Planning and Decision Making

How is planning done when decisions must be made about inception, modification or termination of certificate/diploma programs? How are decisions made and by whom? What sorts of institutional and regional studies provide a knowledge base for planning and decision making? What is the role of state agencies? These were questions on which this study was based.

Each of the colleges studied appears to have an orderly process of planning and decision making preceding submission of new program proposals to SUNY and, in some cases, to the State Education Department. New certificate/diploma program proposals normally are initiated by individual faculty members, department or division chairmen, or division or department faculties; an occasional new program is suggested by a state agency, the experience of another institution, a trustee, or an economic or vocational group in the region. Obviously, on-campus initiation of new program proposals, the most common basis for origin, is heavily influenced by experience at other colleges, national trends, contacts with

employers and unions, and the literature. When the larger certificate (vocational) divisions were set up a few years ago, a somewhat more formal process was employed.

Our investigators discussed the criteria for new program proposals with a number of staff members. Examination was made of proposals submitted for state approval as well as "regional needs studies" on which such proposals were based. Again, we found these criteria to be quite well developed in themselves and based on orderly studies of regional needs and job opportunities. While the thoroughness of the needs studies and the proposals varied considerably from program to program, it is apparent that state requirements or suggestions as well as college regulations combine to create certain minimal standards in studying regional needs, outlining proposals and providing justifications. We can cite proposals which are far above minima in amount of study and quality of documentation and could serve as models.

Proposals for new certificate/diploma programs go through a similarly ordered path of decision making on the several campuses. After divisional work is done and approval voted, usually in informal contact with central administration, a proposed new program must be reviewed by a faculty curriculum group, sometimes by the entire faculty, and usually by an administrative council as well. Students sometimes sit on one or another of the review bodies. Approvals of programs are not automatic; numerous cases of requests for modification

or additional documentation were cited--some proposals fail to win campus approval.

New program proposals must win approval of trustees or councils and, on the cost side, of county sponsors. They then pass through a prescribed series of steps in winning approval by SUNY. If accreditation is an issue the State Education Department is involved. As best we can determine, the SUNY decision making process for these programs is largely pro forma, not automatic of course, but based on proper procedures rather than value judgments. The hard decisions are assumed to have been made by the institutions. This is a tentative judgment, made without serious study of the SUNY decision making process.

Institutions vary in the degree to which they involve advisory committees in the planning and decision making process. Sometimes a knowledgeable group in the region is used intensively from the beginning; some of its members then become the advisory committee. In other instances, we found the advisory committee came into being only after the program was approved or had been started. (See pp.87 for a discussion of the role of advisory committees.)

Modifications of program content and emphasis are usually made by program staffs on the basis of experience, drawing on faculty colleagues and administrators as appropriate for advice and consent. The process is informal, it does take place, and a number of individuals indicated that review and modifica-

tion of programs were on-going. We should point out that many of the programs viewed are so new that only now are program modifications being seriously considered. It is important to note that 68% of the students responding to the questionnaire answered affirmatively to the question, "Do you have the chance to suggest ways in which the program can be improved?"

Decisions to terminate programs appear to be made by certificate/diploma staff and associated divisional colleagues in conjunction with central administration. Low enrollment seems to be the chief reason for a decision to terminate. If a program fails to recruit or if its attrition rate is very high, the program will be seriously considered for termination.

There is a certain ad hoc quality to the planning process which gets certificate/diploma programs and indeed institutions into difficulty. Often planning and decision making is made in a somewhat parochial context and without much attention to total institutional or regional needs; this situation was commented on by a number of individuals on the campuses. In a sense, this is the result of a lack of institutional research and development organization--a lack which really encourages ad hoc or "let's give it a try" decision making. It can be accurately stated, we believe, that an enthusiastic faculty member can, if he tries hard enough and long enough, work a certificate proposal through to establishment as a program. While this is undoubtedly a good thing in some ways, and while it is done within an orderly framework of institutional

and state decision making steps, it can result in operation of a program which fails to fit very well into total institutional or regional goals and needs. It is a part of the fine art of administration, we suspect, to moderate wisely the often conflicting claims of individual aspirations and institutional needs.

The somewhat ad hoc nature of the process acts in another way to militate against the interests of certificate/diploma programs. On a campus where there is an implicit bias against such programs, and where initiation of programs is left to individuals or divisions, few programs come into being since few staff members care to run the gauntlet of difficulties even though an orderly process is prescribed. In such settings, a carefully constructed campus-wide planning and development process would establish the ground rules and make it more evident whether certificate programs were possible, were desirable, and would gain support.

Certificate/diploma program planning and decision making (to establish, seriously modify, or terminate) should be made on a thorough knowledge base, as part of an institution-wide planning and development process, and with both regional and national trends and needs in view. Both SUNY and the State Education Department as well as other state agencies should provide full resources and leadership to the colleges in this endeavor. While every effort should be made to encourage faculty members and divisions to initiate new program

ideas, approval of programs should result from a thorough systems approach involving all appropriate parties and information.

Communicating with the Public

While the seven colleges studied vary considerably in both types and quality of communications concerning certificate/diploma programs, our staff found that in general such communications were less than adequate by accepted modern standards. We recommend to institutions desiring to develop programs of this sort that they study carefully the markets for students and employment, address these markets in forceful and attractive ways, and listen to a variety of people in the region, especially graduates of the programs.

Most of the institutions describe briefly certificate/diploma programs in the general bulletins or catalogs. But in these publications, programs of this type are usually buried in a wealth of information and program descriptions and are, usually, discussed in a somewhat routine and pedantic way associated with academic publications. It is difficult to see how such publications can bring to life a "hands on" program designed for prospective students who are inclined toward the practical and lively.

Some colleges issue special bulletins for groups of certificate/diploma programs, and many of the campuses issue specialized flyers for individual efforts. Though these vary a

good deal in content and style, they can be generally characterized as not especially lively or attractive and, in some cases, not fully informative.

Some of the private junior colleges of the country issue informational bulletins and flyers which are better written, more attractive and, sometimes, more informative than are those produced by the seven colleges in this study. It would seem feasible for public colleges to adapt the communications skills used by the private schools and yet operate within the constraints imposed by their public nature.

Just as colleges need to inform and interest potential students, so they need to make employers acquainted with programs and qualifications of graduates. They also need to tell the story of certificate/diploma programs to legislators and citizens. And they need to set up as many ways as feasible in which interested parties can feed ideas and information back to the campuses to use in modifying and strengthening programs. We found a number of informal techniques employed to do these things. But few of the campuses seem to be well organized to carry on two-way communications about career programs; staff and students and advisory committee members do this work in an on-going way, but without much institutional planning and support.

Conspicuous examples of successful practice come to view. One college uses radio with special effectiveness. One new program is engaging in face-to-face contacts with large numbers

of high school students. Another program uses its advisory committee as a regional communications system. But much remains to be done.

When asked, "How did you first hear about the program you are now in?", 44% of the students responding replied "from a high school counselor or teacher". This to us suggests a market for the right sort of communications about certificate programs--high school and BOCES counselors and instructors and the students they serve.

Student Personnel Services

Admissions

In regard to student admission into certificate programs, all colleges follow the state-mandated "open admissions" policy to some degree. However, a number of programs have added criteria for admission. Most of the certificate programs included in our study require that students be high school graduates or hold a high school equivalency diploma either prior to admission or before being issued a college certificate. Many also require a recommendation from an educator who has had contact with the applicant. Tests, either SUNY-sponsored or others, are also required prior to admission to a few certificate programs.

None of these added criteria are required by the state for admission into one or two-year certificate or diploma programs (State Education Commissioner's Regulation 103.3). Thus, the widespread use of high school graduation or equivalency as a criterion either for admission or graduation from these programs acts as an obvious deterrent to high school drop-outs. This represents an exclusion of an entire segment of our population, many of whom could especially benefit from such programs.

The fact that these admissions criteria exist indicates a desire on the part of some college officers and staff members for more control over the type of student being admitted

into their certificate programs. Our study indicates that there are increasing internal pressures on some of the campuses for more stringent admissions requirements. Primarily the pressures come from faculty teaching in certificate programs which have a highly technical orientation. Their feeling is that without certain basic skills students can not succeed in intensive programs. For example, proponents of this view cite one program with 87 applicants which accepted the first 22 students who applied and had 15 of them drop out during the academic year. They argue that such a state of affairs wastes time, money and talent.

Others with whom we discussed the matter support the basic concept of open admissions and are concerned lest initial attempts to weed out inappropriate students lead to some of the programs serving only advantaged groups. This could be particularly a problem when the selection criteria do not necessarily reflect the abilities requisite to succeed in certificate programs, as in the case of the high school equivalency requirement.

In general, we think that the trend toward admission criteria in certificate programs is a dangerous one. The original motivation for establishing certificate programs was the desire to increase the opportunities for occupational education among those wishing to become skilled workers. Such work generally does not require rigorous conventional academic preparation, as is reflected by the curricula of most certificate

programs. Academic screening devices of the type presently in use do not appear to be generally appropriate to this kind of program and in fact violate the spirit of open admissions. Colleges with high attrition rates in programs would be well advised to closely examine their opportunities for instructional individualization before erecting entry barriers. In the few cases where specific talents are obviously required we recognize the need for admissions criteria but only after careful analysis of each situation.

For these reasons, we recommend that the concept of open admissions should be adhered to in certificate programs, except in unusual cases, with applicants being admitted on a first-come, first-served basis. If this recommendation is followed we recognize that some problems will increase as students having a wider variety of backgrounds (but not necessarily greater differences in ability since these are already great) are admitted into the certificate programs. The subsequent discussions on counseling and remedial assistance (pp. 65) and instruction (pp. 75) will speak to ways in which the needs of a diverse student body may be met.

Admissions problems in certificate programs are not limited to constraints placed upon the applicants. Many potential students never become aware of the existence of the programs. Although programs recruit to varying degrees (generally depending upon their success in meeting enrollment projections), this recruitment is almost entirely limited to high school

seniors. Our study indicates that more than half (52%) of the students in the certificate programs first heard about their program through high school and BOCES teachers and counselors. Hence, programs desirous of attracting more students would do well to develop closer ties with secondary school representatives. It is important that high school representatives know the nature of these programs and the employment opportunities available to their graduates. A few programs effectively use brochures and separate catalogs in this regard. Others include faculty members on the recruitment teams which visit schools in their regions.

Even more significantly, we encountered few recruitment attempts directed toward diversifying the student population in certificate programs. Representatives of minority groups, the rural poor, veterans, older adults and non-high school graduates are in very short supply in most certificate programs. Good reasons can be cited which inhibit members of these various groups from applying to certificate programs (e.g., some minority group members are not interested in blue collar jobs). Nevertheless, we feel that more can be done to attract members of all of these groups. One of the community colleges in the study has developed close ties with a local anti-poverty agency and has thus been able to attract a number of low income people to its certificate programs. This approach is worthy of emulation. The recruitment of older adults, especially high school drop-outs is another difficult problem.

Mass media advertising campaigns appear to be one effective manner of recruiting these students. Contact with the Veterans Administration would be useful in recruiting veterans. Also helpful would be making the programs themselves more attractive to older students. One example of this, advocated in the section dealing with instruction, is the use of modular scheduling systems which permit students to attend college for short time periods (three to six weeks) or on a part-time basis while still maintaining economic stability. Another example is the adoption of advanced standing procedures as advocated in the following section.

There are no easy answers to the question of how to encourage student diversity but if certificate programs are to meet the need for occupational education and upward mobility among the general population, an objective they are well suited to by virtue of their training for skilled crafts and trades, they must expand recruitment procedures to include more than recent high school graduates.

Another problem area in certificate program admissions procedures is the general lack of clearly defined opportunities for advanced placement and advanced standing. Few of the programs which we studied encourage advanced placement or have uniform procedures for accomplishing this. Seventy-three per cent (73%) of the student sample responded that they did not have the opportunity to "skip those parts of the program in which you had already mastered the skills and information."

In most cases, students enter programs at the lowest level and only those exhibiting great, personal initiative as well as appropriate skills achieve advanced placement.

We recognize that advanced placement is facilitated by a critical mass of students and staff, a group large enough to permit curricular and instructional flexibility. But the most important factor appears to be the openness of the instructional staff to experimenting with truly individualized instruction. A first step in this direction could be for each program to develop performance-based objectives pertaining to the successful completion of each course or unit of instruction. Once these objectives are identified, and they already are in many cases, tests could be developed to measure progress toward them. These tests could then serve the triple role of determining advanced standing for incoming students, adapting curricula to student levels, and measuring student progress within the program.

Advanced standing is an option in a number of the colleges studied but is infrequently utilized. Students come to the programs with varying degrees of expertise and it would be very desirable to recognize their proficiencies through curricular exemptions as much as possible. This would be especially attractive to older adult applicants who would undoubtedly be unwilling to spend time studying material in which they were already proficient. This approach would probably make the

programs even more attractive to BOCES students who presently make up approximately 12% of the overall certificate program enrollment.

Therefore, we recommend that colleges should formalize advanced placement and advanced standing opportunities within the certificate programs by developing performance-based objectives which will identify the skill levels basic to successful completion of segments of the program as well as measure the achievement of incoming students in these skill areas. (See pp. 76 for a related discussion of instructional modules.)

Related to increased opportunities for advanced placement and advanced standing is the practice of rolling admissions. One of the colleges in the sample is experimenting with this procedure. Students are admitted into programs at the time that openings arise rather than only at the start of a new semester or academic year. This approach augments the flexibility of advanced standing by enabling a college to sustain high student enrollments throughout the academic year. Hence, rolling admissions should be considered in conjunction with procedures which increase the flexibility of instruction.

Counseling

In the context of the certificate programs, guidance and counseling has a number of ties to the admissions process. Even in the present situation of quasi open admissions, students with a wide variety of abilities enter certificate

programs. Because of this diversity it is imperative that the staff of certificate programs ascertain the characteristics of the students they will be teaching and counseling. Some of the colleges studied appear to achieve this end by administering a battery of tests to entering students. Since this is not uniformly true, we recommend that each college should carefully examine its testing procedures used with incoming students and make efforts to develop a battery of diagnostic tests which will provide information about the affective, cognitive and vocational needs of students. Included in such a battery could be vocational performance tests to rate students on their potential for advanced placement.

A testing program can also be helpful in terms of academic support of entering students. Diagnostic tests can facilitate the assignment of students to "study skills" courses. Most colleges have remedial programs but often they serve the needs of certificate students poorly. A frequent comment on the student questionnaire was that there were not enough opportunities for certificate students to engage in remedial work. This problem is likely to increase if student bodies become more diversified.

Even when remedial opportunities are available we found that the certificate students tended to drop out of them primarily because of the extra time required. Other students abandoned these programs because they were unable to relate to the content of the reading programs. In order to overcome

these problems colleges should not only provide certificate program students with appropriately tailored remedial courses, but also insure that student schedules are designed in ways which will make time available for these courses.

The situation in regard to personal counseling of certificate program students tends to be paradoxical in some of the colleges included in our study. By this we mean that counseling centers tend to be geared toward degree program students with faculty members taking a secondary role; whereas instructors appear to be heavily engaged in the counseling of certificate program students with the counseling centers playing a minimal role. This state of affairs is reflected in the results of the student survey which shows 49% of the students pointing to instructors as being helpful with personal problems while only 11% indicate counselors have been helpful in this regard.

We subscribe to the ideal of student and teacher establishing a full relationship in which there is potential to treat personal as well as academic problems. But this type of relationship assumes that the teacher has some personal expertise in advising as well as back-up support when the problems are complex.

In the context of our study it was impossible to assess the competence of certificate program instructors in dealing with the personal problems of students. It would probably be fair to assume that there is a full range of this competence

on most faculties. Whatever the case, it is apparent that they engage in a good deal of counseling, especially vocational, and frequently are the only adults in the college doing so with these students. Because of this, we recommend that each college should develop in-service training workshops to enhance the counseling abilities of the instructional staff members working with students in certificate programs. If possible, these should be led by experienced members of the college counseling center.

There is also a general problem regarding the back-up counseling available for students in certificate programs. On the campuses for which we have data these students have the lowest rate of referral to counseling centers of any group of students. This correlates with the fact that only 11% say that they turn to counselors with their personal problems. As well as having close ties with their faculty, other reasons why certificate students do not frequent the counseling center appear to be the lack of information, among both students and their instructors, regarding counseling services and on occasion the unwillingness of instructors to refer students to centers which in most cases lack counselors trained to work with vocationally oriented students.

This leads us to recommend that colleges should acquire the services of a counselor experienced in working with vocationally oriented students. Such an individual would not

pre-empt the valuable on-the-spot service provided by instructors but rather offer skilled back-up support when necessary.

Counseling centers in the colleges studied also appear to be weak in meeting the needs of special groups of students, especially minority group students. This is not a significant problem at present on any of the campuses studied due to their relatively homogeneous student bodies. It could become one if the state-mandated open admissions policy results in active recruitment of diverse types of students.

Although faculty in certificate programs appear to have a significant impact upon many of the students, this occurs in an understandably haphazard manner. Some of the colleges in an attempt to make student-faculty contact more periodic have assigned a faculty advisor to each student. We feel that this is an excellent idea since it attempts to insure that each student has meaningful contact with at least one faculty member. Services provided by a faculty advisor can include initial personal orientation to the certificate program, general academic advising and counseling during the course of the year, informing students of guidance and counseling opportunities available on campus (including placement), and when appropriate, referring students to other individuals and agencies. Hence, we recommend that each college consider adopting a faculty advisor system.

In our study of the counseling procedures at the various colleges we have found a dearth of research and reports in

this area. This vacuum is detrimental to the self-assessment of the college counseling centers. There is need not only for statistics on the types of counseling performed, student profiles, etc., but also for follow-up surveys in order to help determine the strengths and weaknesses of the counseling and academic programs.

Students who have dropped out of certificate programs especially deserve to be queried. One of the colleges in the sample not only performs an exit interview but contacts each student 30 days after leaving in order to ascertain his or her perceptions of the program and reasons for termination. Attrition studies will be most helpful if the reasons for student departure are determined and related to program operation.

Therefore, we recommend that each college counseling center should initiate self studies and student surveys geared to determining the effectiveness of the various programs in meeting student needs.

Placement

In general we found the job placement of students graduating from certificate programs highly variable albeit successful. Primarily students seem to acquire jobs through personal connections and the contacts of their instructors. It is apparent that the instructional staff make a significant impact upon student placement through their contacts and trade associations. Many students are aware of this since 35%

indicated on the questionnaire that they would turn to their instructors "for help in finding a job".

Overall, students in certificate programs do not have great difficulty in finding employment. On the questionnaire only 21% indicated that they anticipated "serious problems" in getting a job. In certain of the technical programs (e.g., Licensed Practical Nursing) some of the students have a number of job offers from which to choose. The programs in which students have difficulty acquiring jobs appear to be both those in which they receive a limited training in marketable skills and others affected by the current economic decline (e.g., drafting).

On most of the campuses visited the placement office was only peripherally involved in assisting certificate program students obtain employment. In a number of cases students were not even aware of the existence of a college placement office. On the other hand, on one campus having a placement office actively involved with placing certificate program students, 45% of the students sampled indicated that they would turn to it in their quest for employment. Furthermore, at that particular school only 13% of the students indicated that they felt they would have difficulty in acquiring a job.

Placement operations appear to work effectively when directed toward students in certificate programs. Thus we think placement could profitably be formalized at most of the colleges in this study. Although the present informal place-

ment system appears to be working in most cases, the increased use of more formal procedures would have long run benefits. As in the case of counseling, the involvement of instructors in the placement process serves a valuable adjunct role but does not satisfy the need for professional service. If done systematically through a placement office which includes a counselor well versed in vocational employment opportunities, students will most likely be offered more options, especially geographical, than they are at present. Furthermore, there would be added assurance of the effective handling of three primary placement functions: career counseling (assisting students in determining personally appropriate employment fields and informing them about the types of employment in those fields), facilitation of employer-student contacts (contacting prospective employers via letters, brochures and personal visits; advertising in trade journals; arranging recruitment visits to campus, arranging meetings between recruiters and faculty members; scheduling interviews between recruiters and interested students), and student preparation in job-hunting technique (assisting in résumé preparation and coaching in successful interview procedures).

For these reasons we recommend that each college should include in its placement office staff at least one counselor experienced in vocational job placement who will orchestrate the job placement of students in certificate programs as a prime responsibility.

Another duty of a vocational placement counselor would be in conjunction with the recommendation in the instruction section concerning the need for increased student opportunities for cooperative work experiences. An experienced placement counselor would be a valuable force in the development of such a program. Participating firms would have to be recruited and then oriented regarding the skill level of students. Interaction between the firms and faculty members would have to be facilitated. This function would complement the other duties of a placement officer since it would serve to introduce students to employers and employers to the certificate programs at the college.

In the colleges studied we found a number of reports dealing with the placement function. These were primarily statistical in nature, and often included detailed documentation of employer contacts. A few colleges have also carried out follow-up studies concerning the employment situation of recent graduates. These studies focus upon the salary of the graduate, his satisfaction with his position, the opportunities for advancement, the adequacy of the graduate's preparation for the position, and his recommendations as to how the college program could be improved in light of his subsequent work experience.

Such an approach is helpful. We think that the colleges' placement programs could also benefit from attempts to assess their impact upon students who are going through or have recently gone through job searches. It would seem that the

attitude of these students toward the placement assistance offered by the college and their comments regarding its improvement would be very helpful in improving formal placement operations. Therefore, we recommend that each college should not only compile statistical documentation of the degree to which they assist certificate program students in job placement, but also survey students in order to get feedback on an annual basis concerning how the college can improve its functioning in admissions, counseling, instruction and placement.

Instruction

An Overview

Findings here are based on interviews with a number of central administrators, thirty-eight instructors some of whom were also department or division chairman, the questionnaire responses of 359 students, and a review of written materials.

Top administrators gave a somewhat mixed reading of instruction in diploma/certificate programs. Some stressed the up-to-date and realistic nature of these programs, citing ways in which instructors kept abreast of their fields through reading and summer work. Several extolled programs of this sort as serving regional needs well. It was pointed out that instruction in the programs must be good since graduates found jobs easily and reported success in their fields of work. Certificate instructors were cited by some as being unusually innovative in both curriculum and types of teaching.

Problems in instruction were also cited. Several respondents worried about a possible lack of substance in the subject matter of certificate/diploma programs. One or two administrators suspected the instruction as being too practical, especially in one-year programs, with a possible lack of instruction in the theory underpinning successful practice. A number commented on difficulties in reading and mathematics encountered in the programs, a situation which they felt was not remedied by the time students were graduated.

The programs are listed by title and institution (see pp. 4 & 28). The reader is referred to these and to the paragraphs following for some consideration of program similarities and differences. The variety of programs makes it difficult to generalize about or make recommendations concerning curriculum, standards of performance and achievement, or quality of instruction. Instead, we choose to deal with instruction, considering its overall nature across programs and campuses.

It is useful to consider certificate/diploma programs as falling into three types, based on positions to be held by graduates--programs for technicians, programs for craftsmen, programs for office and service personnel. Most programs involve instruction and learning in both laboratory or shop and classroom. Generally, these programs appear to provide for more individualized instruction and more "over the shoulder" supervision than would be found in the higher technologies or liberal arts, with a correspondingly lighter use of mass classroom techniques.

An Instructional Model

Using interview information, written materials and examination of experimental and innovative programs, we suggest the following model for instruction in most certificate/diploma programs.

A. Open Admissions: Wherever possible, admission should be granted to any individual over 18 years of age who gives reasonable evidence of serious interest in a program.

For certain programs based on state, professional or business association standards, essential additional criteria for entrance would be applied. These should be at an absolute minimum.

B. Diagnostic Testing: After about two to three weeks of instruction (to give both students and instructors a chance to get acquainted without preconceptions as to ability and motivation), diagnostic testing would be used to determine levels of reading and mathematical competency and vocational-technical performance. Testing would include both pencil and paper (reading, mathematics, etc.) and "hands on" performance.

C. Performance Based Advancement: Each student would proceed at a pace determined by himself, instructors, and diagnostic and subsequent performance testing. This process would be implemented by use of:

1. Remedial modules of instruction to be developed for students needing these as evidenced by performance on diagnostic tests. The emphasis here would be on catching up, with grading being at a minimum. Remedial work might be in academics or practical performance but should be an integral part of the program, easily included in a student's schedule. The college's development or compensatory studies office might handle the academics.

2. Developmental modules of instruction to include a series of modules linked in a developmental sequence and leading one by one to mastery of performance skills and

meeting predetermined performance standards. Each module would be quite self-contained, including evaluative techniques to enable student and instructor to determine when it is satisfactorily completed. Each student would proceed at his own pace, being encouraged to repeat modules if necessary, having an opportunity to skip modules when he did not need these, and working with instructors in an individualized way. There would be as many group class sessions as were deemed necessary. Grading would be used but linked to performance standards and determined by both instructors and students.

3. Advanced placement would enable students to have the opportunity to move directly into modules of study and instruction at their levels as determined by written and practical tests.

4. Advanced standing would allow students assigned to advanced placement to receive credit for work exempted by the fact of advanced placement. They would need only to complete modules beyond the level of advanced standing.

5. Flexible graduation would supplement moving at an individual pace in meeting predetermined performance standards. The student would be graduated when such standards were met. Thus, his time in the program could vary from a quarter to several quarters depending on his prior training and experience and performance in the program.

D. Supplementary Changes: This instructional model would probably work most effectively if it were set in a

college-wide scheme encouraging individualization and flexibility for students. Though certificate/diploma programs could operate alone with a flexible calendar and with a number of options for students, they would prosper more if these were institutional norms. The following procedures are suggested:

1. A new college calendar would enhance the adoption of this instructional model. Such a calendar would have a "rolling" admissions policy with students coming into day-time programs in a manner at least as flexible as is the case in continuing education programs. Students would arrive and leave throughout the year, entering modules suited to their level of proficiency and departing upon completion of these. The calendar would encourage establishment of programs of various lengths. Neither a one-quarter program geared to developing a specific skill nor a two-year program in the humanities would be denigrated because of its length. If such a degree of flexibility is impossible for the entire institution, it is recommended for use in certificate/diploma programs.

2. Flexibility of student movement is an important component of this instructional model. Certificate/diploma students should be encouraged by institutional policy to move across program lines within their own fields and to take electives in other fields. Modular programming and scheduling should help to make such movement more feasible.

It seems quite likely that students moving relatively rapidly through certificate programs will elect to transfer to more advanced fields of study on their own campuses or to take desired electives during a post-program year.

College policies should also encourage students in degree programs to move into the certificate/diploma fields for study. Again, modules of a reasonably self-contained sort attached in a developmental sequence should serve this purpose well. Even more important, the colleges should be attracting into day-time programs numbers of adults whose conditions of life make study during days desirable. Such adults are much more likely to be in programs with individualization of instruction and modular programming. These adults are conspicuously absent now from present day-time programs on the seven campuses visited.

The students polled have given us some clues to present practice on the campuses in respect to flexibility. Sixty percent (60%) felt that they could proceed at their own pace in certificate/diploma programs while 31% believed that they could not do so with the rest not being sure. This may suggest that certificate programs are already adjusting to individual pace, a fact attested to by many staff members, but that more needs to be done.

When students were asked, "Have you been able to skip those parts of the (certificate/diploma) program in which you have already mastered the skills and information?", only 19% answered "yes" with 73% responding "no" and the rest "not sure".

Neither advanced standing nor advanced placement appear to be working very effectively in the view of a large majority of students.

Cooperative Work Experience

Flexibility has an additional advantage in that it might permit more students than now have the opportunity to get on-the-job experience in conjunction with college programs. Presumably a modular schedule could include modules of work in industry, business and the crafts off campus. Cooperative work experience has the advantage of familiarizing students with the reality of the world of work in ways no shop or laboratory oriented course can match. In a well organized program students can be confronted with both the depth and breadth of working environments. Furthermore, valuable attitudes as well as skills can be acquired from experienced craftsmen and technicians in real life situations. Awareness of the expectations and personal qualities required to succeed on the job will assist students in developing a realistic approach to their studies. Fringe benefits of such a program include the personal contacts made by students in the job market and the familiarization of participating firms with the certificate and diploma programs. Some employers have expressed enthusiasm for this type of program and they would be likely ones with whom to initiate pilot projects.