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AUTHOR Lavin, Richard J.
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ABSTRACT

Five studies conducted as part of a state college planning project are presented in this report. Section I provides career choice information for one of the state college campuses (Fitchburg). Section II contains current manpower data (as perceived by Massachusetts superintendents) and perceived needs from the field for career opportunities in education. Section III provides a proposal for generating funds necessary to conduct a comprehensive college-level manpower study. Section IV provides a set of recommendations in the area of special education and human services relating to career opportunities. Finally, section V provides a model whereby three State Colleges link their efforts in improving services in the area of special education training. The appendices include an occupation and career interest survey (Fitchburg State College), a superintendent's employability rating scale, and two interview guides. (JH)

MASSACHUSETTS STATE COLLEGE PLANNING PROJECT FOR RESPONDING TO NEW CAREER OPPORTUNITIES

FINAL REPORT

Submitted to:

Massachusetts Board of State Colleges
53 State Street
Boston, Massachusetts 02109

Submitted by:

Richard J. Lavin, Project Director
Merrimack Education Center
101 Mill Road
Chelmsford, Massachusetts 01824

October 31, 1978

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STATE COLLEGE PLANNING PROJECT FOR
RESPONDING TO NEW CAREER OPPORTUNITIES

FINAL REPORT

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ACKNOWLEDGEMENTS

This study project has received special assistance and guidance from a number of people both internal and external to the Massachusetts State College System. We extend our sincere appreciation for the information and professional judgment that have been made available to us. Although major contributions have been provided this report, the responsibility for these findings and recommendations remains with the Merrimack Education Center.

The Merrimack Education Center is indebted to the Massachusetts Board of State Colleges especially Chancellor James Hammond, to Dr. Lawrence Quigley and the Massachusetts State College central staff, to Dr. William Kvaraceus of Bridgewater State College, to President Vincent Mara and Dean Francis Pilecki of Fitchburg State College for their cooperation in the career choice study, to William Flaherty (Superintendent of Billerica Schools) and the Massachusetts Association of School Superintendents for their assistance in the Superintendents' Survey. We are also appreciative of the efforts of Massachusetts Human Services Agencies, Massachusetts Department of Education and to the many others who made suggestions and took time to offer reactions. We are especially appreciative of the Study Advisory Council for their guidance.

- Project Study Advisory Council

  Chancellor James Hammond--Mass. Board of State Colleges
  William Flaherty--Superintendent of Billerica Schools
  William Kvaraceus--Bridgewater State College
  Gregg Malone--Fitchburg State College
  Ann May--Fitchburg State College
  Lawrence Quigley--Mass. Board of State Colleges
  Robert Randolph--Mass. Board of State Colleges
  James Roach--North Adams State College

- Study Consultants

  Richard Lavin--Merrimack Education Center
  Robert Audette--RAA Associates
  Robert Greenberg--Indiana University
  Donald Meals--Arthur D. Little, Inc.
  Jean Sanders--Merrimack Education Center
  Donald Stedman--University of North Carolina

STATE COLLEGE PLANNING PROJECT FOR RESPONDING TO NEW CAREER OPPORTUNITIES

FINAL REPORT

INTRODUCTION

This report is a summary of the results of a year-long planning project. Several studies were completed simultaneously along with a major conference, planning meetings, and Title XX discussion.

The major findings and recommendations are incorporated in the various sections of this Final Report. The Executive Summary is intended to highlight implications for action steps and to determine major planning recommendations. The Executive Summary provides a description of planning steps to consider the structure, scope, and conduct of teacher education at the ten State Colleges in the Commonwealth.

The use of faculty members to serve on the study Advisory Committee and visits and interviews at the campuses were of major importance. This Advisory Committee was an indispensable part of the data-gathering process. The Committee members have also provided reaction and comment at various times during the project year.

The State Colleges are to be commended for the program developments established through an inter-agency approach under Title XX

funding. A major recommendation to the Board is to examine the potential of these program developments and have them serve as models of future inter-agency cooperation both on-campus and off-campus.

This Final Report contains five major sections that have been written as separate studies for the purpose of follow-up and implementation.

Section I--Provides career choice information for one of the State College campuses.

Suggested Steps: It may be advantageous to share this data system-wide with other Colleges as a basis for review of College guidance activities and curriculum review.

Section II--Provides current manpower data, as perceived by Massachusetts Superintendents, and perceived needs from the field for career opportunities in education are highlighted.

Suggested Steps: This information should be made available to all Colleges for their use in planning relevant courses and programs for students.

Section III--Provides a proposal for generating funds necessary to conduct a comprehensive College-Level manpower study.

Suggested Steps: Following a review and refinement of the proposal, it should be submitted to appropriate foundations and governmental agencies for possible funding support.

Section IV--Provides a set of recommendations in the area of special education and human services relating to career opportunities.

Suggested Steps: The College Study Advisory Committee should be expanded into a system-wide task force for the review and implementation of the recommendations.

Section V--Provides a model whereby three State [illegible]ges link their efforts in improving services in the area of special education training.

Suggested Steps: Following a review of this model, components of this proposed project should be examined for implementation. The linking and dissemination of program developments is an essential element of this model.

Planning procedures conducted as on-going activity of the State College System will be needed in providing direction for the future. Present endeavors in planning and development by State College faculties, campus administrators and the Chancellor's staff are underway currently. The Executive Summary of this Final Report emphasizes the importance of this function and suggests increased efforts especially in the area of planning that will lead to a more responsive and adaptive State College operating system.

Richard J. Lavin
Project Director

MASSACHUSETTS STATE COLLEGE PLANNING PROJECT
FOR RESPONDING TO NEW CAREER OPPORTUNITIES

EXECUTIVE SUMMARY

RESPONDING TO CAREER OPPORTUNITIES: THE STATE COLLEGE ROLE

EXECUTIVE SUMMARY

RESPONDING TO CAREER OPPORTUNITIES:
THE STATE COLLEGE ROLE

INTRODUCTION

A good investigation provides answers to specific questions. A somewhat better outcome is a new perspective that shifts attention to more fundamental issues than those that motivated the initial questions. This report does both. It provides recommendations for action on the part of State Colleges. These recommendations spell out steps that cope with the changing pattern of demands for competent leaders in special education and human services. More significantly, the report draws attention to much more fundamental issues. The motivating interest in adapting programs and institutional relationships to special education and human service requirements raises the questions: Why was an inquiry into these matters needed? Are there similar and equally urgent questions about other State College programs? Are we responding to symptoms while ignoring underlying dysfunctions? An affirmative response seems indicated. Yet, it is the sharply focused set of questions about special education and human services along with the fresh experience of attempting to answer them that urge a deeper inquiry, and more fundamental actions.

Attention is directed first at the purpose, objectives, findings,

and recommendations of this project. The summary and implications lead to a speculative discussion of the conditions that may account for a mis-match between State College programs and requirements for them. There is, finally, a set of suggestions offered to stimulate discussion and to focus continuing inquiry.

THE STATE COLLEGES AND SPECIAL EDUCATION/HUMAN SERVICES

Background

Recognizing that the State College should respond adaptively to changes in professional environment of its graduates, the Chancellor has persistently encouraged inquiry into social trends and their impact on higher education. Particular concern for State College programs relating to special education and human services emerged out of two related sets of developments that gave emphasis to the training of special educators and other human service workers.

- Full educational opportunities for the handicapped.

  Chapter 766 of the Massachusetts Acts of 1972, U.S. Public Law 94-142, and Section 504 of the Rehabilitation Act of 1973 brought fundamental changes in the responsibilities of educational institutions. Since educational programs must meet all individual needs in the least restrictive environment possible, broad institutional adjustments accommodated the new responsibility. Not surprisingly specialists trained to meet the individual needs of the handicapped were needed to implement this new and broader educational responsibility.

- Non-educational support for those with disabilities.

  Quite logically, the mandated opportunities for the handicapped called for more support than could be achieved by special instructional approaches alone.

This led to an expansion in the demand for community based living, recreation and vocational arrangements for children and adults with disabilities. Family support services found a greater demand as the non-school environment was coordinated with special academic programs designed to meet the needs of the handicapped. In recognition of these expanding demands and the associated increase in the work for Human Services specialists training funds have doubled. It appeared likely that the State College system should respond to this emerging demand as well as to the need for special educators.

To respond to what appeared to be a major change in the society calls for a careful confirmation of the trend and an action program for adapting to it. Accordingly, the Chancellor commissioned the Merrimack Education Center, in association with selected State Colleges and individual consultants, to examine the trend and, as appropriate, assist with adapting to it. The accompanying report, of which this is a summary, presents the results of this effort.

Objectives and Scope

During October of 1977, the Chancellor of the State College System, through a contract with the Merrimack Education Center, undertook a systematic examination of the needs and opportunities for enhancing State College contributions to the changing needs for special education and human services. The purpose of this endeavor was to provide information and action priorities that could serve as the basis for responding to change. In addition to the possibility of changes in academic programs, the program of work called for consideration of the allied requirements for inter-agency cooperation and the integration of both pre-service and inservice activities with the more conventional educational programs. Specific objectives guiding the MEC effort included system proposals for training educators, consideration of a consortium approach, assistance to selected State Colleges

and the delivery of information to the Chancellor's office to support the development of program concepts during the course of the investigation.

In the course of its work during the last year, MEC first sought out the best available information about the need for professional-level skills in special education and human services. A survey of Massachusetts school superintendents, interviews with leaders and managers of on-going state programs for special education and human services and new data on academic and career plans of 1978 graduates of Fitchburg State College provided factual input. A report on related experiences in three of the state colleges and a special confere were used to evaluate, relate, and interpret facts bearing on the problem. Meanwhile, the information base relating to the role of the State Colleges in special education and human services was expanding. The output aided in interpreting tentative conclusions and, very directly, in the selection and formulation of plans for projects to cope with issues revealed by the investigative effort. The outcome of the total effort, as reported in greater detail in the accompanying report, thus reflects the enriching interaction of new data on the situation in Massachusetts, a broad base of pertinent information, much discussion and several interim actions facilitated by the total effort.

Key Findings

Based on specific observations and their integration, the following findings have a significant bearing on the purpose of this

investigation. Other findings that point to a broader focus are identified later in this summary.

- There have been significant changes in the emphasis given to special education and human services. These changes have resulted in modifications in the services provided and their mode of delivery. Those providing these services will require skills and knowledge commensurate with new responsibilities.

- The State Colleges have begun to make adjustments during the last five years to respond to the changes emerging during this interval.

- An appropriate response on the part of the State Colleges to special education and human services trends will involve more than changes in curriculum. New relationships with operating agencies are necessary to ensure an integrated approach that adequately takes into account inservice, pre-service, and on-campus training.

- While a strong response to change is indicated, and can be undertaken with confidence, information on the quantity and quality of the demand for skills has been unavailable to the State Colleges.

Recommendations for Action

Twelve recommendations for action to respond to trends in special education and human services are presented in the accompanying report. Taken together, the actions called for enable the State College System to cope responsibly with important developments and provide leadership in preparing the professional persons who will, in the future, meet the total educational needs of Massachusetts children.

We summarize here the recommended action program. In principle the program shifts the emphasis now given to special education from quantity to quality. Specific steps are listed for bringing about

this transition. Next, the recommendations specify a set of working relationships that need to be established to facilitate the integration of strengthened academic programs with laboratory schools and private education institutions as well as public and private agencies where services are delivered. Finally, actions are suggested to increase the future responsiveness of State College programs in special education and human services. Links with Area Planning Teams, as initiated with Title XX programs, are strongly recommended. Other significant occurrences that are to be commended have been the unification of two similar strands such as career education and special education, or human services and special education to develop a major for the "human service educator." An additional recommendation would be for campus faculty to participate in inservice training both with public schools and human service agencies. The action program thus encourages immediate adaptations while calling for steps that will encourage feedback and adaptation to new requirements in the future.

Revealed Concerns

As observed at the beginning of this summary, the program of work and results presented in the accompanying report do more than meet the initial objectives. The inquiry into the impact of changes in special education and human services on the State College System has repeatedly called attention to larger and more fundamental issues. We have been forced to conjecture whether there are other equally important adaptations to changing conditions. The response to changes in special education and human services apparently stems from leadership initiatives and needs to be built into routine mechanisms and purposeful institutional mechanisms of planning and adaptation at each of the State Colleges in the Commonwealth.

Although answering such questions as those posed above was not the purpose of our work, they proved inescapable. We came ultimately to the conviction that the principle value of our work might well be the encouragement of attention to an environment that appears to render adaptation to changing demands difficult and slow. We have, therefore, addressed the matter of institutional adaptation to the limited extent our data and observations permit. Our observations are necessarily tentative. They are designed to focus attention, to stimulate inquiry and ultimately encourage adaptation that anticipates rather than follows changes in societal needs.

Observations

Appropriate data are not available

Whether an educational institution is concerned with adapting its special education programs or an engineering curriculum to changing needs, the starting point is a specification of the requirement for the competencies these programs provide. To proceed without this information inevitably leads to risky conjecture or the equally risky but implicit assumption that change is unnecessary. This is a fundamental basis for action that can be incorporated into planning mechanisms at each of the State Colleges.

A significant result of this investigation is the failure to find useful data on either the supply or demand for graduates in special education or human services. The situation is not better with respect to teachers, nurses, and other occupations that might provide alternative

employment for State College graduates in these fields. Although a long-range Planning Committee in a report* published in 1973 made use of projections provided by the Division of Employment Security of the Commonwealth, the assumptions on which these estimates rest are no longer pertinent. In Section III of this Final Report, recommendations and proposed activities are presented that would attempt to fine-tune estimates of future supply and demand in order to adapt them to the needs of the ten State Colleges who have set as a major goal diversification of undergraduate majors and career options for graduates. Section III also recommends that projections of supply and demand be routinely and progressively refined, perhaps on an annual basis. Such a process is widely recognized as a means of compensating for the inevitable uncertainties associated with single projections. As a consequence of limited data, the current and laudable attempt to change was forced to make use of limited and lesser data sources. The results are useful and relevant but far from the information base essential for planning. A central planning capacity, which makes use of supply and demand forecasting, is recommended.

We are persuaded that the need for data on the supply and demand relative to graduates from the State College programs is the most fundamental limitation to its capability for adapting to special education or any other needs. The career intentions of students within the State's public and private institutions can provide short-term data.

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* "Agenda for Renewal: A Forward Look For The Massachusetts State College Systems, 1973-1980."

Regular estimates and analyses will eventually help refine these projections. Also needed are projections of demand reflecting economic and technological trends. Data provided routinely by the Division of Employment Security and the U.S. Bureau of Labor Statistics will serve as a starting point. Adjustments to accommodate State College program planning needs along with regular revisions will help round out a useful picture of the future the State Colleges are preparing students to enter.

Available data little used

The report of the Task Force on Teacher Education and Laboratory schools issued in 1974 triggered a reappraisal of the System's primary focus on teacher training. Since that time, enrollments have been virtually cut in half in teacher training at the State Colleges as the market mechanisms begin to take hold and students selected other majors. (See the Massachusetts State College System, Survey and Study of June, 1978 graduates.)

Results of the survey of graduating bachelor-level students of Fitchburg State College in 1978 and reported fully in the accompanying Section I of this Final Report present an equally important concern. Additionally the State College System, through its central office staff, has made several major attempts at collecting data that could be useful to a systematic supply/demand forecast, both short-range and long-range.

Students are not always actively encouraged to confront the fact of the labor market early on in their career decisions. The Fitchburg survey found forty-four percent of the respondents seeking careers in educational institutions and approximately twenty-four percent in health services. In education, the demand is not strong. In allied health and nursing, the outlook is somewhat better. Only 4.5 percent sought to enter business in spite of the apparent commitment of the System (1973 Agenda for Renewal) to providing manpower to the diverse employment fields within the State. Equally surprising is the finding that less than twenty-eight percent of the respondents changed their career choice since entering college. Of those making such a change, more than half cite as their reason either aptitudes or interests. Less than seventeen percent have changed because of "few job openings." When we add to this the finding that only twenty percent of the respondents received career counseling, the picture strongly suggests that students receive inadequate information about jobs. Whatever the breadth of counseling, students in this sample did not appear to have responded adaptively to available labor market data. More emphasis is needed on career counseling and placement centers in the State Colleges.

Limited adaptive mechanisms

In attempting to resolve the shifts in demands for graduates and the need to develop new programs of studies it has seemed likely that the System needs mechanisms for bringing about change. Certainly, the lack of adequate data on the supply and demand for professional skills hints at the absence of institutional elements that routinely assess needs. If these elements exist in one or more of

the colleges there still remains the requirement for a system-wide view. Perhaps there are too few linkages with the institutions where graduates are employed. It is altogether possible that faculties are committed to the historic goal of teacher preparation. Whatever the reason, new initiatives need to be sought and institutional attention must be focused on the social system that the State Colleges serve.

Because most institutions normally resist change, a variety of mechanisms have been developed to create a readiness on the part of people in the institution to adapt to new circumstances. Incentives to change are provided in the form of rewards for new ventures. In some instances, faculty members are encouraged to undertake external assignments that relate to new fields. Much progress is made through sensitive inquiry into the disincentives to change. Once these are found, i.e., fear that falling enrollments in education courses would jeopardize the career of a faculty member, solutions often prove less costly than the failure to change. It may prove desirable to provide opportunities, for faculty members to expand established expertise into a related field. The number of educators who have been successful in other fields suggests that the possibilities are substantial. In any event, mechanisms for encouraging change appear to be needed.

The obvious and most deficient mechanism for change is the planning process. When institutionalized to ensure a persistent commitment to the examination of needs, allocation of resources to meet these needs and the implementation of programs related to reassessed needs, planning

is adaptation to change. This needs to be provided for in the routine planning mechanisms established for the Colleges. To be effective as a mechanism for ensuring adaptive change, planning must be continuous. Strategies for meeting needs can be reviewed along with the means of implementing them. Further, the planning process should have a continuity and staff commitment sufficient to command broad participation. A planning group capable of seeking needed data and engaging broad participation is a minimum. Such a planning group, supported by policies that encourage evaluation and feedback, would provide a minimum for the State Colleges serving the changing needs of society.

Opportunity for Diversification

Specific corrective actions can have a desirable impact some distance down the road. Meanwhile, there is an obligation to search for more immediate steps. At the very least such steps should serve to alert both students and faculty to the issue, stimulate innovative initiatives and, perhaps, broaden opportunities. It is the latter that appears to promise short-term benefits.

Program diversity, we believe, could be expanded with relative little effort, modest planning and existing data describing the labor market. Major departments producing graduates for which job opportunities have lessened, for example, could be encouraged to propose one or more elective courses that relate to the department's traditional area of responsibility and a job with good employment propects. With encouragement made convincing by the opportunity to substitute a new course for courses or sections of

a course that are to be dropped, the faculty may be expected to be as innovative as they know how. It seems likely that the education faculty would find allied courses that focus on the application of mathematics, child development, biology, etc. rather than the teaching of these content areas. Nursing educators would be encouraged to examine the allied health areas and perhaps seek alliances with other faculties to identify courses that are a step toward human services occupations. We cannot, nor would we want to, limit the innovative effort here. There is enough creative energy available if its application can be encouraged with the appropriate incentives.

While far from a total program, it is possible to suggest several further supportive actions that might facilitate the active involvement of faculties in diversifying program offerings. These include:

1. Provide challenge and support through a workshop on academic program diversification.

2. Use available data on labor markets--U.S. Bureau of Labor Statistics data on employment opportunities in New England--to help identify opportunities for new employment-related courses.

3. Establish criteria, funds and a review committe to award limited course development resources to selected innovators.

4. Enlist the aid of career counseling and student advisory staff to the limited but positive purpose of the new courses and encourage registrations as a means of providing a broader perspective on employment.

Clearly, the suggestions outlined above are designed to encourage rather than prescribe. They are interim actions, at best. We believe

the virtue of these or similar actions lies in the possibility of focusing on diversity while the more fundamental but necessarily slower actions are underway. Though the course options that this interim approach provides will be small, the positive impact on attitudes and the readiness to respond to a broader demand can be substantial. It can be the beginning of what we expect will be the carefully planned and implemented program for diversity that is a key element in the integrated planning we have urged elsewhere in this report.

Toward A More Responsive Institution

The opportunity to examine the limited set of needs that the State College System is now addressing has called attention to the broader issue of how the institution can adapt to many changes of which these are tokens. The answer is surely not a simple one nor can our observations based on limited involvement and serendipity give more than a suggestion or two about where to begin.

First, a significant beginning has been made by addressing questions involving special education and human services. Actions recommended as a result of our study can lead to significant and adaptive changes. Beyond these steps related to two program areas there are other developments that, in our view, deserve attention. They have to do with the establishment of mechanisms for facilitating change and the attitudinal orientation that supports these mechanisms.

Institution Change Mechanisms

- Regular planning for the System as a whole that explicitly develops strategies and implementing actions for meeting the needs of both the state and the student.

- Evaluation of institutional performance in terms of plans with the use of results to provide feedback and ensure institutional learning.

- Improve the career counseling of students with emphasis on providing information on employment opportunities as well as on the relevance of aptitudes and interests to major fields of study.

Encourage An Orientation Toward Service to Student Career Needs

- Through leadership at all levels, seek to legitimize the role of the System in helping students acquire marketable skills.

- Provide incentives and remove disincentives for the faculty to support new programs responding to new needs.

In summary, this study offers a set of recommendations that can lead the Massachusetts State Colleges to become a more adaptive and responsive system. The project has by no means examined all the critical issues facing the State College System today but has reviewed some of the major program endeavors. This review indicates that for the State College System to continue in its direction of needed diversity in its management, organization and teaching-learning environments, the function of system-wide planning must be elevated in importance. This Executive Summary suggests that the design and implementation of a planing support system become a first priority of the Board and Administration of the Massachusetts State College System.

Section I

EDUCATIONAL PLANS AND CAREER CHOICES OF BACHELOR'S DEGREE RECIPIENTS AT FITCHBURG STATE COLLEGE

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PREFACE

Volumes have been written on the subject of work and all the tangential factors involved. In this highly technologically-oriented society, the entire fabric of citizenry seems to be enmeshed in the need for the work force to adapt to new jobs seemingly as quickly as the very development of the technology that creates them.

The problems that result are significant and complex. These include worker productivity, motivation, dissatisfaction, and ever present unemployment. There is a growing sense of the need for a satisfaction of individual as well as organizational needs in accomplishing the task.

One of the partners in the collaborative study of the field of work is the higher education sector. Not only are colleges and universities involved in "in-service" education of managers and employees in industrial and commercial areas, the higher education sector is a prime preparatory or "pre-service" base for many professional and career areas.

In the forefront of this pre-service training are the public colleges and universities which, perhaps by virtue of their history, have evolved to show concern for the employment needs of their student clientele.

Therefore, it is appropriate that within the Commonwealth, Fitchburg State College, with a long history among the numerous institutions of higher education in this State, has initiated a study that attempts to relate the pre-service, or the undergraduate degree program of studies with the actual career choice.

There is real significance in this study. First, some of the data has meaning in relation to the numbers of students and the programs offered on the campus. Based on the results of the study, the Commonwealth has some meaningful information as to projections and background training of manpower in a number of areas.

Secondly, the study that follows is a pilot study of a comprehensive approach that is recommended for implementation among all the ten State Colleges. Since the State College segment of the public sector includes more than thirty thousand students, nearly all of whom are residents of the Commonwealth, the synthesis of data from the recommended comprehensive study will show significant planning bases for State agencies and industries alike.

The study was conducted by the Merrimack Education Center through the cooperation of President Vincent Mara at Fitchburg State College. Dr. Robert Greenberg of Indiana University coordinated the study for the Center, and Mr. Mark Whitmore of the College Admissions Staff was responsible for data collection at the College. Other College staff who cooperated included Dean Francis Pilecki, Mr. Roy Hall, Mr. Ray Bryant, and Ms. Pamela Fiorentino. Through these combined efforts we hope that the results of this study are of value for applications systemwide.

INTRODUCTION

College-level manpower analysis involves, at some point, the investigation of the supply of college graduates for the work force. Projections of enrollments or degrees granted are generally used to estimate this supply factor. However, when the manpower analyst attempts to relate degrees granted to the labor market, he finds that there are few one-to-one relationships between a college degree and a career.

Even where a degree appears to be closely related to an occupation, we are not certain what proportion of the recipients of the degree aspire to that occupation. For example, the assumption that all elementary education majors plan to become teachers might result in an overestimation of the teacher supply. Attempts to relate more general degrees, such as those in the liberal arts, to specific occupations become even more problematic.

A 1974 survey of new chemistry bachelor's degree recipients, conducted by the American Chemical Society,[1] found that only 24.5 percent of the respondents had found full-time employment in their field. An additional 28.1 percent had become graduate assistants, 17.8 percent had engaged in part-time or summer employment, 7.3 percent were employed outside their fields, 4.9 percent were unemployed, 2.0 percent were in the military, Peace Corps, etc., and 15.3 percent were not seeking employment. The data of the survey indicate that only about one-quarter of the chemistry graduates had found employment in their field, but give no indication as to how many other chemistry majors had sought or desired such jobs.

The vagaries of labor market demand are not, by any means, the only factors influencing whether or not an individual's career is highly related to his postsecondary education. Indication that the intentions or aspirations of college graduates themselves are important factors in determining supply is contained in a recent research report by Bisconti titled College Graduates and their Employers.[2] Bisconti found that of 1961 freshmen who had completed bachelor's degrees, nearly two-thirds of the male business administrators had not majored in business and four-fifths of the teachers had not majored in education. It was also found that the career aspirations of students shortly before graduation were highly correlated to the careers they eventually pursued.

A follow-up study of the graduates of Saint Peter's College by Malnig[3] and Morrow found that there was a wide variety of occupations pursued by bachelor's degree recipients from all academic areas. Not only liberal arts and social science graduates, but also those from business and other more traditionally job-related programs had become occupationally dispersed.

This is not to say that there are not identifiable relationships between college degrees and career aspirations: In The Market for College-Trained Manpower, Freeman reported that, at the graduate level, there was a relationship approaching a one-to-one correspondence between educational preparation and work. Freeman also found that a majority of undergraduates expected to work permanently in the area of their college major. However, such career aspirations and future plans for education differed markedly when the undergraduate major field of study was taken into account.

The value of follow-up studies of college graduates is becoming increasingly recognized. Some are conducted by professional organizations such as the Engineers Joint Council, the American Chemical Association, and the Association of American Geographers. Follow-up studies are also frequently conducted by individual colleges and universities, or by specific departments within the institutions. Such studies, particularly those conducted on a regular basis (e.g., annual surveys of graduates) or those of a longitudinal nature (e.g., studies conducted on the same group of graduates over a long period of time) provide useful information concerning the workings of the labor market.

In order to assess the implications of college enrollments and degrees for manpower supply in Massachusetts, it is of value to identify the immediate and long-range occupations, educational, and career plans and aspirations of students about to graduate. As these plans and aspirations are related to number of degrees granted, estimates of manpower supply can be more meaningfully developed.

The Instrument

In 1975 the "Occupation and Career Interest Survey" was developed as a part of the Indiana College-level Manpower Study. The Survey was used on a statewide basis in Indiana and was found to provide information which was useful in the analysis of manpower supply as well as in providing information for academic planners and career planning and placement counselors.

It was determined that, with appropriate revisions, this questionnaire could be administered successfully within the Massachusetts State College System. Fitchburg State College was

chosen as the site for a pilot run of the "Occupation and Career Interest Survey" and the Indiana Questionnaire was revised with the consultation of the director of the Indiana project.[5]

Two detailed lists accompanied each questionnaire. The first dealt with major fields of study and was based upon the HEGIS* Taxonomy for programs currently available at Fitchburg State. The second list concerned occupation and career titles and groupings, and was based upon the occupational listings of the Bureau of the Census. A copy of the complete questionnaire is contained in the Appendix to this report.

The Survey Population

The survey population for this study included all the students at Fitchburg State College who received a bachelor's degree in June, 1978. They were to complete the questionnaire as part of the procedures required for graduation. Out of a total population of 587 graduates, 404 or 68.8 percent responded to the questionnaire in a usable manner.

Analysis of the Data

Responses to the questionnaire were computer coded and analyzed by means of the Statistical Package for the Social Sciences (SPSS) at Boston College. In some cases it is particularly interesting to compare the Fitchburg State College responses with those of the 1975 Indiana findings.

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*HEGIS = Higher Education General Information Survey

DEMOGRAPHICS

A total of 404 usable questionnaire responses were received from the 587 bachelor's level June graduates of Fitchburg State College, a response rate of 68.8 percent. Of these, 100 respondents were male (24.8 percent) and 304 were female (75.2 percent). The following report is based upon the responses of those 404 graduates and, because of the high response rate, should be highly representative of the entire population of the College's graduates.

* * * * *

TABLE 1: AGE OF RESPONDENTS

	Male		Female		Total	
Age Range	N	%	N	%	N	%
20-21 yrs	31	31.0	114	37.5	145	35.9
22-23 yrs	37	37.0	155	51.0	192	47.5
24-29 yrs	22	22.0	17	5.6	39	9.7
30 or older	10	10.0	18	5.9	28	6.9
Total	100	100.0	304	100.0	404	100.0

Table 1 represents the age ranges of the graduates of Fitchburg State College. As can be seen, there is a fairly wide variety in the ages of the graduates with the males significantly older than the females of the group.

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TABLE 2: MARITAL STATUS OF RESPONDENTS

	Male		Female		Total	
Marital Status	N	%	N	%	N	%
Not Married	80	80.0	262	86.2	342	84.7
Married	20	20.0	42	13.8	62	15.3
Total	100	100.0	304	100.0	404	100.0

Table 2 presents the marital status of the survey respondents. Only 15.3 percent were married at the time of graduation.

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TABLE 3: LOCATION OF HIGH SCHOOL RESIDENCE

Location	Male N	Male %	Female N	Female %	Total N	Total %
Within Mass.	90	90.0	281	92.4	371	91.8
Outside Mass.	9	9.0	20	6.6	29	7.2
Outside U.S.A.	1	1.0	3	1.0	4	1.0
Total	100	100.0	304	100.0	404	100.0

Table 3 presents the locations of the graduates' homes while they were attending high school. Over 90 percent of both males and females had lived in Massachusetts during their high school years with 7.2 percent from out of state and only one percent from other countries.

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TABLE 4: PARENTS' OCCUPATIONS, BY OCCUPATIONAL CATEGORY

Occupational Category	Fathers' Occupations N	Fathers' Occupations %	Mothers' Occupations N	Mothers' Occupations %
Professional, technical, kindred	110	30.9	87	24.0
Managers, officials, proprietors	37	10.4	9	2.5
Sales workers	25	7.0	20	5.5
Clerical workers	5	1.4	79	21.8
Craftsmen, foremen, kindred	86	24.2	3	0.8
Operatives	20	5.6	8	2.2
Service workers	37	10.4	34	9.4
Laborers	26	7.3	5	1.4
Farmers, farm workers	2	0.6	0	0.0
Military workers	8	2.2	0	0.0
Housewives	---	---	118	32.5
Total	256	100.0	363	100.0

The data of Table 4 present the primary occupations of the respondents' parents, classified by Census Bureau occupational categories. Slightly more than 30 percent of the fathers were in professional, technical, or kindred fields while 24 percent of the mothers were in this category. The most frequently reported specific occupations were as follows:

Fathers		Mothers	
Foremen	28	Housewife	118
Nonfarm labor	26	Secretary/stenography	42
Engineer	24	Registered nurse	33
Protective service	17	Elementary school teacher	17
Secondary school teacher	16	Sales clerk (retail)	15
Sales (other)	14	Clerical (other)	12
Metalworker	12	Food service	12
Electrician	11	Bookkeeper	11
Construction (other)	11		
Office manager	10		

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TABLE 5: PARENTS' EDUCATIONAL ATTAINMENT

	Fathers		Mothers	
Educational Level	N	%	N	%
Less than high school diploma	93	23.7	80	20.6
High school diploma	144	36.6	191	49.1
Associate degree	56	14.2	50	12.9
Bachelor's degree	52	13.2	47	12.1
First professional degree	10	2.5	9	2.3
Master's degree	27	6.9	4	1.0
Specialist degree	5	1.3	8	2.1
Doctorate	6	1.5	0	0.0

The data of Table 5 report the highest levels of education attained by the respondents' parents. A large percentage, over 20 percent of both fathers and mothers, had not received high school diplomas while an additional 36.6 percent of the fathers and 49 percent of the mothers had not received degrees beyond high school. Approximately one-fourth of the fathers and 17.5 percent of the mothers had received bachelor's degrees or higher.

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EDUCATIONAL BACKGROUNDS AND FUTURE PLANS FOR EDUCATION

TABLE 6: INTERRUPTION OF FORMAL EDUCATION

	Male		Female		Total	
	N	%	N	%	N	%
Interrupted	44	44.0	54	17.7	98	24.3
Not interrupted	56	56.0	250	82.2	306	75.7
Total	100	100.0	304	100.0	404	100.0

The data of Table 6 indicate that 44 percent of the male respondents had interrupted their formal education for an extended period of time. (The corresponding figure for the males of the Indiana public institutions was 27.7 percent.) A far lower proportion of the females, only 17.7 percent, had done so. It would appear then that nearly half the males would have had some type of full-time work experience before completing the bachelor's degree.

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TABLE 7: GRADE-POINT AVERAGES

	Overall GPA				Major Field GPA			
	Male		Female		Male		Female	
GPA	N	%	N	%	N	%	N	%
3.51-4.0	13	13.0	78	25.7	24	24.0	135	43.8
3.01-3.5	37	37.0	135	44.4	44	44.0	130	42.8
2.51-3.0	41	41.0	86	28.3	27	27.0	39	12.8
2.01-2.5	8	8.0	5	1.6	4	4.0	2	0.7
Below 2.0	1	1.0	0	0.0	1	1.0	0	0.0

Table 7 represents the respondents' overall grade point averages as well as that in their major fields of study. As is readily apparent, the females reported far higher grades than did the males. Also, grades earned by the respondents in their majors were far higher than the overall averages. Sixty-eight percent of the males and 86.6 percent of the females reported GPA's in their majors to be over 3.0.

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TABLE 8: MAJOR FIELDS OF STUDY

Field of Study	Earliest Declared				Current			
	Male		Female		Male		Female	
	N	%	N	%	N	%	N	%
Biology	7	7.0	13	4.3	7	7.0	11	3.6
Business	2	2.0	1	0.3	2	2.0	2	0.7
Chemistry	1	1.0	2	0.7	0	0.0	2	0.7
Communications	1	1.0	0	0.0	1	1.0	0	0.0
Computer Science	1	1.0	0	0.0	1	1.0	0	0.0
English	2	2.0	7	2.3	3	3.0	8	2.6
Industrial Science	4	4.0	0	0.0	4	4.0	0	0.0
Mathematics	3	3.0	0	0.0	3	3.0	2	0.7
Physics	1	1.0	0	0.0	1	1.0	0	0.0
Early Childhood	1	1.0	32	10.5	0	0.0	30	9.9
Elementary Education	8	8.1	30	9.9	9	9.0	19	6.3
Industrial Arts	32	32.0	0	0.0	33	33.0	0	0.0
Secondary Education	3	3.0	4	1.3	1	1.0	6	2.0
Special Education	11	11.0	68	22.4	11	11.0	67	22.0
Medical Technology	1	1.0	5	1.6	0	0.0	0	0.0
Nursing	0	0.0	85	28.0	0	0.0	90	29.6
Other Health	0	0.0	1	0.3	0	0.0	0	0.0
Geography	1	1.0	1	0.3	1	1.0	3	1.0
History	2	2.0	3	1.0	3	3.0	3	1.0
Human Services	2	2.0	12	3.9	6	6.0	25	8.2
Psychology	3	3.0	9	3.0	4	4.0	9	3.0
Sociology	0	0.0	5	1.6	2	2.0	3	1.0
Other	5	5.1	2	0.7	1	1.0	0	0.0
No response	9	9.0	24	7.9	7	7.0	24	7.9

Table 8 reports the earliest declared major fields of study of the respondents along with their current majors. As can be seen, large percentages of the graduates have clustered into a limited number of major fields, particularly those of education (early childhood, elementary, industrial arts, and special), nursing, and human services. The education fields did not appear to be suffering attrition from students' first declaration of a major to their point of graduation.

Certain majors were very closely identified to the members of one sex or the other. For example, 32 percent of the male respondents were majoring in the industrial arts, compared to none of the females. On the other hand, far larger proportions of females than males were in the fields of early childhood education, special education, and nursing.

* * * * *

TABLE 9: ANTICIPATED FUTURE FIELDS OF STUDY

	Male		Female	
Fields of Study	N	%	N	%
Business Administration	3	6.4	3	1.9
Chemistry	0	0.0	2	1.3
Computer Science	2	4.3	0	0.0
English	2	4.3	2	1.3
Industrial Science	3	6.4	0	0.0
Mathematics	2	4.3	0	0.0
Early Childhood	0	0.0	13	8.2
Industrial Arts	19	40.4	0	0.0
Secondary Education	0	0.0	1	0.6
Special Education	9	19.1	40	25.2
Other Education fields	6	12.8	17	10.7
Medical Technology	0	0.0	2	1.3
Nursing	0	0.0	71	44.7
Other Health fields	0	0.0	6	3.8
Geography	1	2.1	2	1.3
Total	47	100.0	159	100.0

The data of Table 9 present the respondents' anticipated future major fields of study. Forty-seven percent of the males had selected future majors with over 70 percent of them planning further study in an education field. A total of 52.3 percent of the females checked fields for future study with approximately 45 percent of these choosing each of the fields of nursing and education. As can be seen in Table 11 below, higher percentages than these expected to pursue degrees beyond the bachelor's degree.

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TABLE 10: IMPORTANCE OF FACTORS IN SELECTING MAJOR FIELDS OF STUDY

Factor	Very Important		Somewhat Important		Not Important	
	N	%	N	%	N	%
Relationship between major and interests	325	81.0	70	17.5	6	1.5
Relationship between major and career choice	326	81.7	52	13.0	21	5.3
Relationship between major and talents/aptitudes	271	67.8	118	29.5	11	2.8
Status or prestige of major	79	19.5	182	44.9	139	34.3
Influence of parents, relatives or friends	52	12.9	170	42.0	179	44.2

The data of Table 10 represent the respondents' views as to the importance of a number of factors influencing their choices of a major field of study. As can be readily seen, the relationship between the major and their interests and their career choices were the two most important factors, with the relationship between the major and their talents/aptitudes close behind. The status or prestige of the major and the influence of parents, relatives or friends were far less influential in this regard.

* * * * *

TABLE 11: EXPECTED HIGHEST LEVEL OF EDUCATION

Degree Level	Male		Female		Total	
	N	%	N	%	N	%
Bachelor's	11	11.2	38	12.6	49	12.3
1st professional	4	4.1	10	3.3	14	3.5
Master's	58	59.2	197	65.2	255	63.8
Specialist's	3	3.1	14	4.6	17	4.3
Doctorate	22	22.4	43	14.2	65	16.3
Total	98	100.0	302	100.0	400	100.0

The data of Ta le 11 represent the highest degree levels the respondents expected to complete. Only about one-eighth of the respondents did not expect to receive a degree beyond the bachelor's with nearly two-thirds indicating that the master's degree would be their highest. Approximately 16 percent of the respondents, including nearly one-quarter of the males, intended to earn a doctorate.

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OCCUPATION AND CAREER PLANS AND ASPIRATIONS

Manpower analysts, and those who utilize their reports, sometimes consider bachelor's degree recipients as immediate entrants into the labor force. Attempts to relate their degrees to specific jobs become highly inaccurate because they do not take the plans and aspirations of the graduates themselves into account. These plans are, however, very important because they are often impossible to predict solely on the bases of degree level and field of study. As relationships between majors and career choices become better known, it becomes more possible to make generalizations.

TABLE 12: EXPECTED FUTURE ACTIVITIES

Activity	Male N	Male %	Female N	Female %
This Fall				
Full-time career job	51	52.0	213	73.2
Full-time non-career job	29	29.6	49	16.8
Military service	2	2.0	2	0.7
Grad. or prof. study	14	14.3	19	6.5
Not in work force	2	2.0	8	2.7
Five years hence				
Full-time career job	75	76.5	211	73.0
Full-time non-career job	7	7.1	7	2.4
Military service	1	1.0	2	0.7
Grad. or prof. study	13	13.6	64	22.1
Not in work force	2	2.0	5	1.7
Ten years hence				
Full-time career job	79	81.4	227	80.5
Full-time non-career job	7	7.2	2	0.1
Military service	1	1.0	1	0.4
Grad. or prof. study	8	8.2	33	11.7
Not in work force	2	2.1	19	6.7

Each respondent was asked to indicate what primary activity he or she expected to be engaged in during the fall subsequent to graduation. Since the questionnaire was administered only days before their graduation, the respondents' answer reflect an accurate measure of Fitchburg State's immediate contribution to manpower supply out of the June, 1978 graduating class.

Approximately half the males and nearly three-quarters of the females expected to be entering full-time career jobs. (Corresponding figures for the Indiana study were 42.1 percent and 53.5 percent, respectively.) An additional 29.6 percent of the males and 16.8 percent of the females planned to be working at full-time non-career jobs, thereby designating approximately 80 percent of both males and females as aspiring to assume full-time employment after graduation.

Only 14 males and 19 females among the respondents anticipated graduate school as their major activity for the fall. (The proportion of Indiana graduates anticipating to engage in further study immediately after receiving the bachelor's was approximately twice that of Fitchburg State.)

When asked about their plans for five years after graduation, approximately three-quarters thought that they would be in full-time career jobs at that time. An additional 13.6 percent of the males and 22.1 percent of the females thought they would be in graduate programs five years hence. (Comparable figures for the Indiana study were 8.8 percent and 11.8 percent, respectively, much lower than that at Fitchburg State.)

When asked about their plans for ten years after graduation, slightly over 80 percent of the respondents believed they would be in full-time career jobs at that point. Simultaneously, approximately 10 percent expected to be in graduate school ten years after receiving the bachelor's degree. (This compares to only 1.8 percent for the Indiana study.)

Among the Fitchburg State graduates there appeared to be a tendency to delay graduate school entrance with many expecting to wait as long as five or ten years. The males had more of a tendency to enter graduate school immediately after graduation or to engage in full-time non-career jobs while females were more inclined to enter full-time career jobs after graduation.

* * * * *

Table 13 reports undergraduate major by primary fall activity for those majors with enough responses to make analysis meaningful. Those in job-related fields of study had far more of a tendency than others to enter career-related jobs immediately after graduation. These majors included early childhood education, nursing, special education, and elementary education.

Lower proportions of the graduates with majors less clearly related to employment opportunities planned to enter career jobs. Among these fields were biology, human services, English, and psychology. Many of those with these majors planned to enter non-career jobs or to pursue graduate studies the fall after their graduation.

TABLE 13: UNDERGRADUATE MAJOR* AND PRIMARY FALL ACTIVITY

	Career Job		Non-Career Job		Military		Graduate Study		Not in Work Force		Total
	N	%	N	%	N	%	N	%	N	%	N
Biology	10	55.6	3	16.7	0	0.0	5	27.7	0	0.0	18
English	3	27.3	4	36.4	1	9.1	3	27.3	0	0.0	11
Early Childhood	23	88.5	3	11.5	0	0.0	0	0.0	0	0.0	26
Elementary Education	22	78.6	3	10.7	1	3.6	1	3.6	1	3.6	28
Industrial Arts	19	57.6	11	33.0	0	0.0	2	6.1	1	3.0	33
Special Education	65	84.0	11	14.3	0	0.0	1	1.3	0	0.0	77
Nursing	77	87.5	9	10.2	0	0.0	1	1.1	1	1.1	88
Human Services	13	46.4	8	28.6	0	0.0	3	10.7	4	14.3	28
Psychology	2	15.4	5	38.5	0	0.0	5	38.5	1	7.7	13

*Only majors with 10 or more graduates responding to the questionnaire are included in this and subsequent cross tabulations by major field of study.

TABLE 14: DEFINITENESS OF PLANS

Degree of Definiteness	Male N	Male %	Female N	Female %	Total N	Total %
This Fall						
Very definite	10	10.3	13	4.6	23	6.0
Somewhat definite	29	29.9	87	30.7	117	30.7
Highly indefinite	58	59.8	183	64.7	241	63.3
5 years hence						
Very definite	9	9.3	9	3.2	18	4.7
Somewhat definite	40	41.2	120	42.7	161	42.5
Highly indefinite	48	49.5	152	54.1	200	52.8
10 years hence						
Very definite	12	12.5	26	9.3	39	10.4
Somewhat definite	35	36.5	118	42.3	153	40.7
Highly indefinite	49	51.0	135	48.4	184	48.9

The data of Table 14 report the degree to which the graduates felt definite that they would realize their plans for the fall after graduation, five years hence, and ten years hence. As can be seen, nearly two-thirds were highly indefinite about their fall plans and an additional 30.7 percent were only somewhat definite, leaving just 6 percent very definite. (The Indiana study found drastically different results as 52.2 percent were very definite, 31.3 percent somewhat definite, and only 16.6 percent highly indefinite.)

Concerning their plans for five years hence, it appears that fewer of the graduates are highly indefinite (52.8 percent). However, the percentage that was very definite also declined slightly. (The same pattern of change was found in the Indiana study.)

For ten years hence, an increased percentage of the graduates felt very definite what they knew that they would be doing (10.4 percent). Those who were somewhat definite included 40.7 percent of the respondents with 48.9 percent highly indefinite. (The comparable figures for the Indiana study were 39.8 percent, 40.6 percent, and 19.6 percent, respectively.)

It is obvious from the data of Table 14 that the Fitchburg State College graduates leave the campus with a great deal of uncertainty as to what they will be doing only a couple of months

hence. Though many were in education fields, in which job offers are often made relatively late in the summer, it also appears that many of those planning on entering other career fields, graduate schools, or non-career jobs remain very uncertain as to their immediate futures.

* * * * *

The data of Table 15 report the degree to which the graduates were certain of their fall plans by the type of activity in which they hoped to engage. The most uncertain group was that expecting to enter graduate school, with 81.8 percent indicating that they were highly indefinite. (Compared to 14.7 percent in Indiana study.) Two-thirds of those planning to enter career jobs were highly indefinite (16.1 percent for Indiana study) with only 2.3 percent of this group stating they were highly definite.

The group aspiring to full-time career jobs five and ten years hence remained pessimistic as 55 percent of each group was highly indefinite as to whether or not they would be pursuing these careers. The certainty concerning those expecting to be in graduate school was actually greater for five and ten years after graduation than it was for the fall immediately after graduation. Those who expected to enter full-time non-career jobs appeared to be the most definite group concerning their future plans. (This was the opposite of the Indiana findings.)

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Table 16 reports the occupational and career plans and aspirations of the graduates of Fitchburg State College. The data are reported by plans for the fall after graduation, five years after graduation, and ten years after graduation by which time nearly all expected to be into their career fields. As can be seen, most expect to pursue careers in the professional and technical category with the bulk falling into education or health-related fields. Relatively few looked toward the fields generally associated with the highest status and pay (physician, lawyer, etc.) and very few appeared to be oriented toward careers in the private sector of the economy (buying, banking, sales, etc.). It was also of interest that extremely few of the females saw themselves as a career housewife, even five or ten years after their graduation.

TABLE 15: TYPE OF ACTIVITY BY DEGREE OF DEFINITENESS OF ACTIVITY

Degree of Definiteness	Full-Time Career Job %	Full-Time NonCareer Job %	Military Service %	Graduate or Professional Study %	Not in Work Force %
This Fall					
Very definite	2.3	12.5	25.0	9.1	37.5
Somewhat definite	31.3	40.3	0.0	9.1	25.0
Highly indefinite	66.4	47.2	75.0	81.8	37.5
N =	(259)	(72)	(4)	(3)	(8)
Five Years Hence					
Very definite	4.7	25.0	0.0	2.7	0.0
Somewhat definite	39.9	41.7	66.6	48.6	57.1
Highly indefinite	55.4	33.3	33.3	48.6	42.9
N =	(278)	(12)	(3)	(74)	(7)
Ten Years Hence					
Very definite	8.1	25.0	50.0	15.8	14.3
Somewhat definite	36.8	50.0	50.0	52.6	61.9
Highly indefinite	55.1	25.0	0.0	31.6	23.8
N =	(296)	(8)	(2)	(38)	(21)

TABLE 16: RESPONDENTS' OCCUPATION AND CAREER CHOICE

Occupational Area	Next Fall N	Next Fall %	Five Years Hence N	Five Years Hence %	Ten Years Hence N	Ten Years Hence %
Professional, Technical, Kindred						
Engineer	1	0.2	1	0.2	1	0.2
Life scientist	4	1.0	5	1.2	7	1.7
Physical scientist	1	0.2	2	0.5	4	1.0
Math specialist	1	0.2	2	0.5	1	0.2
Physician	0	0.0	0	0.0	1	0.2
Registered nurse	90	22.3	87	21.5	84	20.7
Therapist	0	0.0	1	0.2	2	0.5
Veterinarian	0	0.0	0	0.0	1	0.2
Other medical	0	0.0	4	1.0	5	1.2
Medical lab technician	4	1.0	4	1.0	4	1.0
Dental lab technician	1	0.2	1	0.2	1	0.2
Other health technician	1	0.2	1	0.2	0	0.0
Science technician	5	1.2	4	1.0	3	0.7
Aviation technician	1	0.2	1	0.2	0	0.0
Other technician	1	0.2	1	0.2	1	0.2
Computer specialist	2	0.5	2	0.5	2	0.5
Psychologist	3	0.7	8	2.0	8	2.0
Social scientist	5	1.2	5	1.2	7	1.7
Teacher (elementary)	53	13.1	50	12.3	45	11.1
Teacher (secondary)	30	7.4	24	5.9	19	4.7
Teacher (college)	1	0.2	12	3.0	19	4.7
Special education teacher	65	16.1	63	15.6	63	15.6
School counselor	0	0.0	5	1.2	5	1.2
Other education profession	0	0.0	6	1.5	9	2.2
Writer, kindred	3	0.7	3	0.7	5	1.2
Artist, entertainer	2	0.5	4	1.0	1	0.2
Auditor, accountant	1	0.2	1	0.2	2	0.5
Architect	0	0.0	1	0.2	2	0.5
Clergy, kindred	1	0.2	1	0.2	1	0.2
Lawyer, judge	0	0.0	6	1.5	6	1.5
Social worker	20	5.0	19	4.7	20	4.9
Other profession, technical	1	0.2	3	0.7	3	0.7
Managers, Officials, Proprietors						
Bank, financial manager	1	0.2	3	0.7	3	0.7
Buyer	1	0.2	1	0.2	1	0.2
Health administration	1	0.2	1	0.2	2	0.5
School administration	1	0.2	0	0.0	5	1.2
Other administration	1	0.2	3	0.7	2	0.5
Office manager	1	0.2	1	0.2	1	0.2
Other manager	0	0.0	0	0.0	1	0.2

Table 16 continued

Table 16 continued

Occupational Area	Next Fall N	Next Fall %	Five Years Hence N	Five Years Hence %	Ten Years Hence N	Ten Years Hence %
Sales Workers						
Insurance agent	3	0.7	1	0.2	1	0.2
Other sales work	2	0.5	0	0.0	0	0.0
Bookkeeper	1	0.2	0	0.0	0	0.0
Clerical						
Other clerical	1	0.2	0	0.0	0	0.0
Craftsman, Foreman, Kindred						
Construction craft	1	0.2	0	0.0	1	0.2
Metalwork craft	1	0.2	1	0.2	1	0.2
Air, heat, refrigeration	1	0.2	1	0.2	1	0.2
Printing trade craft	1	0.2	0	0.0	0	0.0
Other craftsman	1	0.2	3	0.7	3	0.7
Operatives						
Transportation eqpt opt'r	1	0.2	0	0.0	0	0.0
San. food service worker	2	0.5	1	0.2	1	0.2
Personal service worker	3	0.7	1	0.2	1	0.2
Protective service worker	1	0.2	2	0.5	1	0.2
Laborer, Nonfarm						
Laborer, nonfarm	6	1.5	1	0.2	1	0.2
Farmers, Farm Workers						
Farm laborer, foreman	0	0.0	1	0.2	1	0.2
Other						
Military	1	0.2	0	0.0	0	0.0
Housewife	2	0.5	3	0.7	1	0.2
Student	22	5.4	2	0.5	0	0.0
No response	51	12.6	53	13.1	46	11.4

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TABLE 17: RELATIONSHIP BETWEEN CAREER AND UNDERGRADUATE MAJOR

Relationship	Male N	Male %	Female N	Female %	Total N	Total %
Highly related	59	61.5	240	80.0	299	75.5
Somewhat related	31	32.3	55	18.3	86	21.7
Unrelated	6	6.3	5	1.7	11	2.8

The data of Table 17 report the degree to which the respondents anticipated that their long-term careers would be related to their undergraduate major fields of study. In a manpower sense this question is critically important because it provides the only reasonably solid ground for assuming that graduates aspire to careers which related to their majors. For example, if only 50 percent of education majors planned to enter teaching careers the much publicized surplus of teachers might be exaggerated. Likewise, if 20 percent of engineers expected to pursue MBA degrees and enter immediately into management careers, the shortage of new engineers would be even more severe.

Three-quarters of th Fitchburg State College graduates expected to enter careers highly related to their undergraduate majors. A disproportionate 80 percent of the women fell into this group, compared to only 61.5 percent of the males. An additional 21.7 percent expected that there would be at least some relationship between their careers and their majors and only 2.8 percent anticipated no such relationship.

* * * * *

TABLE 18: UNDERGRADUATE MAJOR AND CAREER RELATEDNESS

Major	Highly Related N	Highly Related %	Somewhat Related N	Somewhat Related %	Unrelated N	Unrelated %	Total N
Biology	12	66.7	5	27.8	1	5.6	18
English	5	50.0	5	50.0	0	0.0	10
Early childhood	24	80.0	6	20.0	0	0.0	30
Elementary ed.	21	77.8	6	22.2	0	0.0	27
Industrial arts	22	66.7	9	27.3	2	6.1	33
Special ed.	66	84.6	10	12.8	2	2.6	78
Nursing	85	94.4	4	4.4	1	1.1	90
Human services	18	58.1	11	35.5	0	0.0	29
Psychology	9	69.2	3	23.1	1	7.7	13
Total	262	79.9	59	18.0	7	2.1	328

The data of Table 18 present the degree to which the respondents saw their careers related to their majors for those fields with ten or more graduates. As can be readily seen, the highest degrees of relatedness are found for those fields which have a major aspect of career preparation built into them. Among these fields were nursing, special education, early childhood education, and elementary education. (Since these were fields dominated by females they explain the difference between males and females observed in Table 17 above.) Human services and English were the two majors for which the lowest degrees of relationship were found. (The overall responses were fairly close to those obtained in the Indiana study.)

* * * * *

TABLE 19: DESIRED CAREER WORK ENVIRONMENT

	Male		Female		Total	
Career Work Environment	N	%	N	%	N	%
Self-employed	22	22.0	25	8.2	47	11.6
Business firm	8	8.0	10	3.3	18	4.5
Educational institution	51	51.0	127	41.8	178	44.1
Research organization	5	5.0	9	3.0	14	3.5
Welfare agency	3	3.0	6	2.0	9	2.2
Military service	0	0.0	1	0.3	1	0.2
Public service	6	6.0	18	5.9	24	5.9
Health facility	0	0.0	96	31.6	96	23.8
Other	3	3.0	6	2.0	9	2.2
No response	2	2.0	6	2.0	8	2.0

The data of Table 19 report the desired career work environments of the respondents. The largest percentage, including 51 percent of the males and 41.8 percent of the females, hoped to work within educational institutions. The second most frequent choice, that of a health facility, was indicated by nearly a third of the females but by none of the males. Almost a quarter of the males hoped to become self-employed, compared to 8.2 percent of the females.

* * * * *

TABLE 20: UNDERGRADUATE MAJOR BY CAREER WORK ENVIRONMENT

	Environment								
Major Field	Self-Employed	Business Firm	Educational Institution	Research Organization	Welfare Agency	Military Service	Public Service	Health Facility	Other
Biology	2	2	2	8	0	0	0	4	0
English	3	0	3	0	0	0	3	1	0
Early childhod	1	2	26	0	0	0	0	1	0
Elementary ed.	0	0	28	0	0	0	0	0	0
Industrial arts	6	1	24	0	0	0	2	0	0
Special ed.	3	0	69	0	0	0	1	2	3
Nursing	6	0	1	0	0	0	3	79	1
Human services	4	1	2	1	8	0	7	4	1
Psychology	7	0	1	2	0	0	2	1	0

The data of Table 20 report the chosen career work environments of the respondents broken down by their major fields of study (for those fields with ten or more graduates). As can be seen, certain fields' graduates fall almost exclusively within one work environment (education/education institution, nursing/health facility) while for others the graduates exhibit a wider range of preferences. For example, the majors in biology, English, human services, and psychology would be more difficult to assign to one or two specific work environment choices.

* * * * *

Table 21 reports the importance of a number of factors often taken into account in making a career choice. The top four factors were far more important than any of the others. (These same factors were dominant in the Indiana study though in a different order.) The desire to work with people rather than things and the desire to perform service to others particularly important among the Fitchburg State students and reflected the nature of their career choices. Factors showing a strongly materialistic or status orientation such as the desire to get ahead rapidly, high income, and status or prestige were evaluated as being relatively unimportant.

TABLE 21: IMPORTANCE OF FACTORS IN CHOOSING LONG-TERM CAREER

Factor	Very Important		Somewhat Important		Not Important	
	N	%	N	%	N	%
Work with people rather than things	310	78.3	61	15.4	25	6.3
Interest in work activities	300	76.5	82	20.9	10	2.6
Service to others	294	74.1	89	22.4	14	3.5
Uses special talents/ abilities	283	72.0	104	26.5	6	1.5
Desire to contribute to knowledge	179	45.4	161	40.9	54	13.7
Security	153	38.5	196	49.4	48	12.1
Leadership opportunity	151	38.3	205	52.0	38	9.6
Independence on job	141	35.8	216	54.8	37	9.4
Initial job opportunities	94	24.0	183	46.7	115	29.3
Free time	66	16.8	138	35.1	189	46.1
Interest in travel	59	14.9	141	35.7	195	49.4
Opportunity to get ahead rapidly	54	13.7	175	44.3	166	42.0
Status, prestige	47	11.9	195	49.4	153	38.7
High income	45	11.5	217	55.2	131	33.3
Education require less time than for other careers	25	6.4	57	14.7	307	78.9

* * * *

The factors considered important by college graduates often differ considerably when viewed by the sex of the respondent. Table 22 considers these factors by sex, reporting the percentages responding to each as being "very important." The significant differences are reported below.

Male High Importance – Female Low Importance	Male Low Importance – Female High Importance
Free time	Work with people rather than things
High income	Being of service

For all other factors there were no differences beyond the $p < 0.05$ level found using chi square analysis.

TABLE 22: FACTORS INDICATED AS BEING "VERY IMPORTANT" IN MAKING CAREER CHOICES

Factors	Male N	Male %*	Female N	Female %*	Total N	Total %*
Work with people rather than things**	58	58.0	251	82.6	309	76.5
Interest in work activities	70	70.0	229	75.3	299	74.0
Service to others**	58	58.0	235	77.3	293	72.5
Uses special talents/ abilities	72	72.0	210	69.1	282	69.8
Desire to contribute to knowledge	45	45.0	134	44.2	179	44.4
Security	43	43.0	110	36.2	153	37.9
Leadership opportunity	38	38.0	113	37.2	151	37.4
Independence on job	34	34.0	107	35.2	141	34.9
Initial job opportunities	22	22.0	72	23.8	94	23.3
Free time**	34	34.0	31	10.2	65	16.1
Interest in travel	13	13.0	46	15.1	59	14.6
Opportunity to get ahead rapidly	14	14.0	40	13.2	54	13.4
Status, prestige	13	13.0	34	11.2	47	11.7
High income**	17	17.0	28	9.2	45	11.1
Education requires less time than for other careers	9	9.0	16	5.3	25	6.2

*Percent of total response.
**Significant at .05 level.

* * * * *

The data of Table 23 reports the percentages of respondents of each major (with more than 10 responses) who indicated each factor as being very important in making their career choices. It was hypothesized that the factors influencing graduates of different majors would show significant differences and this was found to be the case. The knowledge of which factors can be most important to the graduates of specific majors and seeking certain types of careers can be of great value in career and academic counseling.

TABLE 23: VERY IMPORTANT FACTORS IN CAREER DECISIONS BY AREA OF STUDY*

Factors	Biology (18)	English (11)	Early Childhood (30)	Elementary Education (28)	Industrial Arts (33)	Special Education (79)	Nursing (90)	Human Services (21)	Psychology (13)
Work with people rather than things	22.2	63.6	76.7	89.3	54.5	89.9	90.0	83.9	76.9
Interest in work activities	83.3	8.18	70.0	78.6	69.7	72.2	80.0	64.5	84.6
Service in others	55.6	45.5	66.7	82.1	60.6	84.8	84.4	74.2	84.6
Uses special talents/ abilities	77.8	72.7	56.7	71.4	84.8	73.4	66.7	83.9	84.6
Desire to contribute to knowledge	55.6	36.4	46.7	53.6	54.5	39.7	45.6	32.3	46.2
Security	50.0	27.3	23.3	17.9	60.6	27.8	54.4	25.8	38.5
Leadership opportunity	27.8	36.4	26.7	42.9	45.5	25.3	47.8	29.0	53.8
Independence of job	55.6	36.4	30.0	25.0	24.2	29.1	34.4	51.6	61.5
Initial job opportunities	27.8	9.1	16.7	10.7	24.2	19.2	43.3	16.1	0.0
Free time	22.2	27.3	10.0	21.4	30.3	15.2	4.4	12.9	7.7
Interest in travel	11.1	0.0	16.7	7.1	9.1	15.2	10.0	22.6	15.4
Opportunity to get ahead rapidly	22.2	0.0	6.7	7.1	9.1	6.4	20.0	9.7	23.1
Status, prestige	16.7	9.1	6.7	7.1	9.1	6.4	13.3	12.9	15.4
High income	22.2	0.0	10.0	3.6	21.2	5.1	8.9	3.2	23.1
Education requires less time than for other careers	19.4	0.0	10.0	0.0	6.1	7.6	3.3	6.5	0.0

*Figures represent percentages of respondents majoring in each area of study rating each factor as being very important in making a career choice.

TABLE 24: CAREER CHOICE CHANGES SINCE ENTERING COLLEGE

Career Choice Change	Male N	Male %	Female N	Female %	Total N	Total %
Yes	39	40.2	72	23.8	111	27.8
No	58	59.8	230	76.2	288	72.2

Table 24 reports the respondents who had changed their career choices since entering college. Slightly more than one-quarter had made such changes, including 40.2 percent of the males and only 23.8 percent of the females. (These figures were much lower than those found in the Indiana study where nearly half the graduates of both sexes had changed their career choices between high school and college graduation.)

* * * * *

TABLE 25: REASONS FOR CHANGING CAREER CHOICE

Reasons	Male N	Male %	Female N	Female %	Total N	Total %
Few job openings in previous choice	8	21.1	10	14.1	18	16.5
Better financial future	2	5.3	2	2.8	4	3.7
Better use of education	3	7.9	4	5.6	7	6.4
Beter suits talents and aptitudes	10	26.3	23	32.4	33	30.3
Better suits interests	8	21.1	18	25.4	26	23.9
Previous choice only tentative	3	7.9	9	12.7	12	11.0
Training for previous choice too costly	0	0.0	0	0.0	0	0.0
Lost interest in previous choice	2	5.3	2	2.8	4	3.7
Other	2	5.3	3	4.2	5	4.6

The data of Table 25 reports the reasons of the Fitchburg State graduates for changing their career choices. As can be seen, the dominant reasons were the selection of a different occupation which best suited their talents and aptitudes or their interests. An additional 16.5 percent had made this change because their initial selection had few job openings (the response was only 7.4 percent in the Indiana study).

* * * * *

TABLE 26: DEGREES OF INFLUENCE OF SOURCES OF INFORMATION OR GUIDANCE IN MAKING CAREER CHOICE

Influences	Very Important		Somewhat Important		Not Important	
	N	%	N	%	N	%
Previous work experience	164	41.8	156	39.8	72	18.4
College courses	144	36.5	196	49.7	54	13.7
College teachers	142	36.0	175	44.4	77	19.5
Parents or other relatives	74	18.7	191	48.2	131	33.1
Friends	50	12.6	199	50.3	147	37.1
High school teachers/ counselors	48	12.2	149	37.8	197	50.0
Printed materials, radio, TV	25	6.4	160	40.8	207	52.8
College career/ placement counselors	23	5.9	127	32.3	243	61.8
General college counselors	28	7.2	110	28.1	253	64.7

Table 26 reports the influence of a variety of sources of information to the graduates in making their career choices. The most important factor appeared to be that of previous work experience. The next two in importance, those of college courses and college teachers are reflective of the importance of the college classroom experience in the making of a career decision. It is of particular interest that the impact of college counselors appeared to be minimal in this regard. (These were also the least important sources of information found in the Indiana study.)

* * * * *

TABLE 27: OCCUPATIONAL OR CAREER COUNSELING RECEIVED

When Received	Male		Female		Total	
	N	%	N	%	N	%
None received	73	75.3	236	80.8	309	79.4
Freshman year	7	7.2	11	3.8	18	4.6
Sophomore year	7	7.2	17	5.8	24	6.2
Junior year	3	3.1	9	3.1	12	3.1
Senior year	7	7.2	19	6.5	26	6.7

Table 27 reports whether or not the respondents had received occupational or career counseling. Nearly 80 percent said they had not (compared to 59 percent in the Indiana study). Of those who had, there was no particular year of their college experience in which much counseling was received.

* * * * *

TABLE 28: EVALUATION OF CAREER COUNSELING RECEIVED

	Male		Female		Total	
Degree of Helpfulness	N	%	N	%	N	%
Very helpful	10	45.5	23	42.6	33	43.4
Somewhat helpful	9	40.9	26	48.1	35	46.1
Not helpful	3	13.6	5	9.3	8	10.5

The respondents who had received occupational or career counseling were asked to evaluate its helpfulness. Over 40 percent responded that it had been very helpful (compared to 21.2 percent in Indiana) and only 10.5 percent claimed it had not been helpful (compared to 24.2 percent in Indiana). It would appear that those who took the initiative in seeking occupational or career counseling at Fitchburg State felt it had been of value to them.

* * * * *

TABLE 29: EXPECTED CAREER RESIDENCE LOCATION

	Male		Female		Total	
Location	N	%	N	%	N	%
Within Massachusetts	59	62.8	199	68.6	258	67.2
Outside Massachusetts, but within U.S.A.	33	35.1	87	30.0	120	31.3
Outside U.S.A.	2	2.1	4	1.4	6	1.6

The data of Table 29 reports the locations in which the respondents expected to begin their long-term careers. Two-thirds expected to remain in Massachusetts. Slightly over 30 percent planned to work in the U.S.A. but outside Massachusetts and only 1.6 percent anticipated beginning careers outside the country. (Only 44.1 percent of the Indiana graduates, including 49.7 of those in public institutions, expected to begin careers in Indiana.

* * * * *

TABLE 30: EXPECTED CAREER RESIDENCE, BY HIGH SCHOOL LOCATION

High School Location	Career Residence: Within Mass. N	Within Mass. %	Outside Mass. N	Outside Mass. %	Foreign Country N	Foreign Country %	Total
Within Mass.	247	70.2	102	29.0	3	0.9	362
Outside Mass. but within U.S.A.	9	32.1	17	60.7	2	7.1	28
Foreign Country	1	33.3	1	33.3	1	33.3	3
Total	257		120		6		

Table 30 reports the expected career residences of the respondents by their high school locations. As can be seen, 70.2 percent of the students from Massachusetts high schools expected to remain in Massachusetts, compared to only 29 percent of those from outside the State. Fitchburg State would appear to be an overall exporter of graduates from Massachusetts as 362 of those in this table had attended high school in the state but only 257 expected to begin careers in it.

Summary

This section provides data on a sampling of Bachelor degree graduates at Fitchburg State College. While this study does not propose recommendations per se, it suggests further study and analysis by the Institution. At the same time, these data are reviewed they should be examined with other ongoing State College data-gathering reports such as the June graduate study and the placement surveys that follow up on graduates.

The implications of this study seem to suggest that the concept of career guidance and how students receive information should be re-examined. As indicated earlier, 44% seek careers in education while the previous year graduate studies indicate 27% will gain employment in this area. This figure also continues to dwindle as the market becomes saturated.

The Carnegie Commision on Higher Education reported in 1973 that, "Most of the evidence indicates that vocational counseling has tended to be a relatively weak component of college and university student counseling programs, which have, in general, given

greater emphasis to the students' personal and psychological problems. We believe that, in view of the pronounced changes that are occurring in the job market for college graduates, institutions of higher education should place considerably greater emphasis on vocational counseling."

These conditions have led to the recommendation that the Colleges should take immediate steps to strengthen occupational counseling programs available to their students.

REFERENCES

1 Office of Manpower Studies, 1974 Survey Reports: Starting and Employment Status of Chemistry and Chemical Engineering Graduates.

2 Bisconti, Ann S. Careers after College: The Relation Between Plans and Long-Run Outcome. Bethlehem, Pa.: College Placement Council, 1974. (See Also: College Graduates and Their Employers.)

3 Malnig, Lawrence R., Morrow, Sandra L. What Can I Do With A Major In.? 190 Careers That More Than 10,000 Graduates of the 19 Most Popular Majors Have Entered from 1950 to the Present. Jersey City, New Jersey: St. Peter's College Press, 1975. ERIC ED 109 552.

4 Freeman, Richard B., The Market for College-Trained Manpower. See Also: Forecasting the Ph.D. Labor Market: Pitfalls for Policy. Technical Report Number 2. Washington, D.C.: National Academy of Sciences, 1974. ERIC ED 089 648.

5 Indiana Commission for Higher Education. Report Number 4. Indiana College-Level Manpower Study. Indianapolis, Indiana: The Indiana Commission, 1975.

6 U. S. Department of Health, Education and Welfare. Projections of Educational Statustics to 1982-83.

Section II

MASSACHUSETTS SUPERINTENDENTS' FIELD SURVEY OF CAREER OPPORTUNITIES IN EDUCATION

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MASSACHUSETTS SUPERINTENDENTS' FIELD SURVEY OF CAREER OPPORTUNITIES IN EDUCATION

Some observations on teacher supply and demand based upon the perceptions of school superintendents.

SECTION II

MASSACHUSETTS SUPERINTENDENTS' FIELD SURVEY OF CAREER OPPORTUNITIES IN EDUCATION

TABLE OF CONTENTS

SOME OBSERVATIONS ON TEACHER SUPPLY and DEMAND--A Report Based on the Perceptions of Massachusetts School Administrators

By now we are too painfully aware of what has occurred in the area of declining enrollments. The expansion of teacher training institutions in the 50's and 60's and the contraction of demand for new teachers in the 70's converted the "teacher shortage" to a surplus. By 1972, the size of the surplus came to be viewed with concern, particularly as projections were made to suggest a continuing oversupply throughout the decade and into the 80's.

In 1972, the Center for Priority Analysis of the National Planning Association, in a study sponsored by the National Center for Educational Statistics, reported:

> *For the decade of the 70's . . . there will be 3,201,711 graduates (with teaching certificates) . . . This would represent over 2,000,000 graduates prepared to teach in excess of the need.*[1]

The Federal response to this oversupply, in Teacher Corps and other teacher training projects, was to curtail funding of new training programs and shift existing funds to inservice training. In Utah, the State Legislature allocated quotas of teachers to be prepared by all state-supported schools whereas other states drastically reduced budgets for teacher training or allowed the local marketplace to perform the allocation function.

Meanwhile, adjustments have actually occurred on the supply side of the market. Students have been opting out of education majors in large numbers in the last few years in response to the unfavorable job market that has developed.[2] However, thus far this type of adjustment has occurred at the undergraduate level, whereas the number enrolled for graduate study in education has been rising.

SURPLUSES AND SHORTAGES

Contrasting this level of oversupply with current estimates of demand reveals that the period of surplus has not ended. However, market dynamics seem to be responding to the imbalance.[3]

- *In aggregate, in 1976 the supply of beginning teachers exceeded demand by approximately 100,000 persons. This excess is half that observed in the most serious surplus year, which was 1973. So it can be inferred that market dynamics are having an effect on the number of individuals who are seeking teaching jobs or preparing for careers in education.*

- *The early projections of drastic surpluses and persistent oversupply have proved to be in error. The market dynamics have in effect modulated the surplus and perhaps a "throttle effect" is occurring.*

- *The supply of teachers has, in fact, dropped by 35 percent (as of 1977) over the previous five year-period. However, the excess of supply over demand remains large.*

- *Specialty areas such as occupational/vocational, special education, and school support services have increased slightly in that same five year-period and may be approaching a relative balance.*

- *Shortages are still perceived to exist in some specialty areas, particularly in bilingual education, industrial arts and in some specialties such as programs for adjudicated adolescents.*

- *While opportunities have increased in special education and occupational and vocational education, results from other states indicate that supply exceeds demand in these areas as wel.*

SURVEY OF MASSACHUSETTS SUPERINTENDENTS

In an effort to examine teacher supply/demand balance, opinions of superintendents in Massachusetts were collected on a survey instrument and the superintendents rated teacher supply/demand in areas for which they employed staff. (See Appendix B for the survey instrument.) The survey was conducted in order to determine superintendents' views toward the current employment situation for teachers in various teaching areas.

Sincere appreciation is expressed to the superintendents of Massachusetts public school districts who responded to this survey and whose cooperation has made this report possible.

THE SURVEY

Superintendents in Massachusetts were contacted through their professional ROUNDTABLE meetings in the Spring of 1978. Letters and follow-up surveys were sent to those individuals not in attendance at these meetings. Over 200 individuals were invited to respond to the questionnaire. The response rate was seventy-eight percent, with a total collection of 176 survey instruments.

The questionnaire assessed the superintendents' views toward the current teacher supply/demand relationship for various teaching areas. Table 1 represents superintendents' opinions concerning this relationship, based upon their current hiring experience within their own districts. A discussion of the data presented in Table 1 follows on the remaining pages of this report.

TABLE I

MASSACHUSETTS SUPERINTENDENTS' SURVEY OF CAREER

OPPORTUNITIES IN EDUCATION

	Great Undersupply	Moderate Undersupply	Relative Balance	Moderate Oversupply	Great Oversupply
Early Childhood Educator (Special Education)	3%	20%	23%	45%	9%
Kindergarten	1%	5%	18%	43%	33%
Elementary	1%	1%	4%	15%	79%
Middle School	4%	2%	6%	37%	52%
Junior High	3%	4%	10%	35%	48%
High School	1%	5%	12%	39%	43%
Adult Education	0	21%	45%	23%	11%
Bilingual Teacher:					
Spanish	8%	42%	25%	17%	8%
Portugese	40%	36%	8%	12%	4%
Tutor	1%	16%	36%	22%	25%
Reading Specialist	2%	13%	44%	32%	9%
Math Specialist	3%	13%	46%	34%	5%
SECONDARY LEVEL					
English	-0-	3%	3%	27%	68%
Social Studies	-0-	1%	3%	9%	87%
Language	1%	6%	20%	41%	32%
Music	1%	13%	43%	43%	14%
Art	1%	10%	33%	43%	13%
Math	5%	17%	32%	35%	11%
Physical Education	-0-	4%	15%	39%	42%
Science	3%	23%	33%	29%	13%
Business	1%	12%	38%	37%	12%
Agriculture	-0-	21%	38%	31%	10%
Home Economics	2%	10%	48%	34%	7%
Industrial Arts	10%	35%	30%	20%	4%
Vocational	10%	38%	28%	21%	3%
SUPPORT PERSONNEL:					
Psychologist	4%	18%	50%	23%	5%
Guidance Counselor	-0-	9%	14%	47%	30%
Career Counselor	3%	23%	33%	29%	12%
Resource Room Teacher	4%	15%	42%	32%	7%
Consulting Teacher	-0-	16%	40%	38%	6%
Itinerant Teacher	2%	13%	33%	40%	13%
Self Contained Special Class Teacher	1%	12%	40%	37%	10%
Speech/Language Ther.	1%	21%	43%	31%	4%
Physical Therapist	15%	35%	35	12%	2%
Occupational Therapist	23%	31%	34%	8%	3%
School Nurse	-0-	9%	33%	37%	21%
Interpreter for the Deaf	26%	41%	37	3%	3%

RESULTS OF THE SURVEY

For almost all subject areas, the superintendents have found an oversupply of teachers compared to their current hiring demand for them. For elementary, English/Secondary, and for physical education, junior high, middle school, and for high school, superintendents indicated that there was a great oversupply of teachers. A moderate oversupply for reading specialists, language art, science, guidance and math was also reported.

For many teaching areas, superintendents thought the situation to be in balance with a minority noting a teacher oversupply: namely, secondary music, home economics, school psychologists, resource room teachers, speech and language therapists, self-contained special education teacher, business, and industrial arts. Tutors and math specialists represent areas of relative balance that may be approaching oversupply.

Two areas appear from the superintendent's perspective to be hopeful in terms of future career opportunities in teaching: persons trained to work with bilingual students, Portuguese and Spanish, are indicated to be in "moderate undersupply." Vocational teachers may be in relative balance with a tendency towards "undersupply;" however, most of the superintendents responding were from public academic school districts and superintendents of vocational districts were not fully represented in the survey sample. Physical therapists and

occupational therapists also represent areas that may tend towards undersupply.

SUPPLY/DEMAND REPORTS FROM OTHER STATES

Teaching fields that currently offer the best opportunities reported in other states are science, especially in the composite science field, physical sciences, and life/earth sciences, math and industrial arts. Meanwhile, an apparent oversupply exists for homemaking, English, business, guidance, and social studies. Illinois rank-ordered subject areas from high need to low need indicating the greatest needs in the following areas:

- *Industrial arts*
- *Agriculture*
- *Natural sciences*
- *Health education*
- *Physical education -- women's sports*

The Texas Educational Supply/Demand Information Center reported state-wide, short term employment opportunities in teaching. Using a scale of "keenly competitive", competitive, good and very good, the following conclusions were drawn.

Fine Arts	Keenly competitive
Elementary Education	Competitive
Health, Phys. Ed., Music, and drama	Competitive
Occupational Education	GOOD
Speech/hearing	GOOD
Bilingual education	VERY GOOD
Special Education	VERY GOOD
Preschool kindergarten	Competitive
Business	Competitive
English	Keenly competitive
Foreign Language	Keenly competitive
Industrial Arts	Very GOOD/EXCELLENT
Math	EXCELLENT
Science	Good/VERY GOOD

Illinois data indicate that "the oversupply of teachers that currently exists is expected to continue, and available data suggest that the gap between supply and demand may widen considerably."

Both the turnover number and turnover rate of full-time elementary and secondary teachers have declined steadily during recent years. Illinois reports an average annual decline of about 1.0 percent (from 14.8 percent in 1970 to 8.7 percent in 1975).

This decline will certainly affect the number of teachers employed; when discussing staffing trends it was noted there was a lag period between the time when enrollments decline and when RIF* occurs. It is clear, however, that fewer teachers will be needed to maintain a given pupil-teacher ratio.

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*RIF - Reduction in Force

CASE STUDIES FROM MINNESOTA

While schools generally are devoting more and more of their resources to planning, the fact is, few school systems make continuing, systematic, and comprehensive assessments of needs. At present, when an LEA reports its teacher "surplus," it indicates that its budgeted positions have been filled. However, that report may or may not reflect whether the staffing pattern of that school system is based on the needs of its students and of the community it serves.

In an effort to assist school districts in planning their staffing ratios, and to make decisions about recruitment, the Minnesota State Department of Education has prepared a series of case studies:

Case Study # 1	*School District--Metropolitan/Suburban Community*
Case Study # 2	*School District--A Small City*
Case Study # 3	*School District--Agricultural Service Center*
Case Study # 4	*School District--Non-Agricultural Service Center*
Case Study # 5	*School District--A Local Village*

These reports present very helpful planning data for analyzing needs and designing staffing ratios. A decline in the school population is often thought to create an unprecedented opportunity to reduce the student-faculty ratio; but in many cases, this type of response has not been feasible for local school districts because

the amount of state aid, and some of the Federal aid, they receive is based on enrollment and the aid declines when the school population declines. Sharply rising costs have also made it difficult to achieve smaller average-sized classes.

In addition, changes in number of teachers and administrators also result in shifts in the teacher/administrator ratios. Data on these shifts have not been collected in all cases. Where these data have been derived, it is often noted that "there are more administrators per teacher in the 70's than there were in the 60's." Some of these increases, however, are quite small, particularly in the case of support staffs being added in special education.

To anticipate staff reductions, school districts must project teacher needs based on average class size or some other measure of student-staff ratios. Class size is a matter of school board policy; declining enrollment districts may need to review policy on maximum and minimum class size. Some school districts define class size as the "relationship between teacher and pupil hours" or service units.

The change of percentage of Title I eligible students is another variable related to class size and fiscal planning. Districts with declining enrollments may also be districts with increased percentages of Title I eligible children. This may also be true in districts other than those experiencing the problem of the flight of middle class

families--i.e., it could be true for the suburbs as well as the urban areas. If data confirm the relationship between decline of students and increase of Title I concentration, then this concentration has implications for staffing ratios, for recruitment of Title I teachers with specialties in bilingual education, and state grant-in-aid formulas.

Districts should try to anticipate the long-range effects on their overall budget of the distribution of staff on the salary schedule and fiscal resources. Additional inferences should be drawn by examining local data in light of Title I enrollments, minority populations and bilingual students. In Illinois, it has been noted that "the larger the minority population, the greater the reduction of teachers." This finding has not been well received by parent advisory groups.

Another variable noted in Illinois is that "the greater the percentage of families over $15,000, the less the reduction of teachers", a fact that is open to several interpretations. One interpretation is that the wealthier districts are more willing to pay for a lower pupil-teacher ratio and perhaps also willing to support more administrators per teachers.

Although the data are not conclusive, the inferences that can be drawn from this and other reports from other states, would tend to indicate that administrators and various types of supporting staffs (e.g., special education) have not been decreased proportionately as pupil enrollments have decreased, and as regular classroom teachers have decreased. Individual districts may have made proportional reductions, and as previously indicated, may perceive an "oversupply" in some teaching areas. The individual district must examine its own staffing ratios to set recruitment strategies and class size policies. This can be done in light of the priorities of the local citizens and the quality of education that they are able to allocate resources for. Also, the board would need to examine the cost of offering courses with enrollments of low teacher-pupil ratio implying a review of curriculum offerings and educational priorities.

The Minnesota case studies emphasize basic tools for collecting, organizing, and presenting information to resolve these problems and the design of the planning studies is addressed at a layman's audience.

FUTURE OUTLOOK FOR TEACHER DEMAND

The lack of quantitative data relative to all of the factors that influence teacher demand prohibits precise or long-term projections. It is known, however, that declining enrollments will mean that fewer teachers will be needed in the immediate future to maintain a given pupil-teacher ratio. This information, together with the knowledge that local school districts are currently faced with severe budget restraints, suggests that total teacher demand will continue to drop substantially in the next few years. Many superintendents report that the demand is expected to further decline due to anticipated enrollment decreases at the secondary level into the 1980's.

Thus, a number of important factors influence teacher demand, very few of which can be quantified or projected beyond a few years at a time. Those factors include teacher turnover, public school enrollment, the financial condition of school districts, planned curriculum offerings, state-mandated initiatives, planned class size or pupil-teacher ratio, school board/teacher organization negotiated agreements.

Favorable factors are the continued demand for teachers trained in certain specialties and the possibility of an increased demand for teachers in early child development programs and day care centers.

NEA[8] has concluded that trends in demand for qualified public school teachers may change as a result of changes in various factors such as the following:

1. *Major modifications in the school program and teacher assignment load (e.g., service units)*

2. *Reduction in the ratio of pupils per teacher to provide special programs encouraged through legislation*

3. *Change in the rate by which persons having substandard qualifications are being replaced*

In conjecturing trends for the State Colleges for the next five years, one must give great weight to what is happening in light of the economy and enrollments of secondary school students (e.g., the future college students).

However, anxiety generated by labor market conditions may well cause over-reaction by students or faculty. For example, as the employment of teachers hits a low spot, more students are opting for the nursing programs, which although they are in relative balance, may in the near future reach a surplus.

As a direct outgrowth of student concern, there are indications of movement of students from the teacher training programs into other courses and an increase in the number of students who, for example, are claiming business and other majors. This will have implications for planning and long-range considerations. The annual Survey of June graduates (cf. 1978) will be useful in this regard.

REFERENCES

[1] A. Kotz, Report on Quantitative Information on Teacher Training Washington, D.C.: National Planning Association, 1972, III, p. 2.

[2] Cynthia Gillis, "Special Education Manpower in Massachusetts: State Report and Recommendations," Boston, Massachusetts: Department of Special Education, July 1976.

[3] J. Stiglmeier, "Employment Rate in Field of Certification of Persons Receiving Teaching Certificates by Certification Category: New York State, 1971-1975." New York State Department of Education, 1977.

[4] Carnegie Commission on Higher Education. College Graduates and Jobs: Adjusting to A New Labor Market Situation. New York: McGraw-Hill, 1973).

[5] NEA, Teacher Supply and Demand, 1977. Research Memo, Washington, D.C.: NEA, 1977.

BIBLIOGRAPHY

Because this type of information can quickly become outdated, the bibliography is organized with newer references first.

ERIC ED 149 832
Texas Postsecondary Educational Supply and Demand Information System. A Preliminary Report by the State 1202 Commission.

ERIC ED 149 432
Illinois Teacher Supply and Demand

ERIC ED 147 299
Constraints on Teacher Education

ERIC ED 143 644
Condition of Teacher Education--1977, Summary Report.

ERIC ED 143 145
Educators in Supply and Demand: Effects on Quality

ERIC ED 139 811
Likely Near-Future Scenarios for Schools, Colleges, and Departments of Education

ERIC ED 128 918
Planning for Declining Enrollments. Planning Assistance Manual and Case Studies. Minnesota Association of School Administrators.

ERIC ED 112 521
The Environmental Impact of School Closures.

Massachusetts Association of School Committees. Journal
June 1978, Vol. 11-No. 4.
Reduction in Force
A Look at Early Retirement
Smaller Class Size can be Helpful
Bumping
Declining Enrollment in Massachusetts

National Education Association
Teacher Supply and Demand in Public Schools, 1977

Section III

A COLLEGE-LEVEL MANPOWER STUDY FOR THE MASSACHUSETTS STATE COLLEGE SYSTEM

Recommendations and Proposed Activities

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INTRODUCTION

In an earlier era when college graduates of virtually any major field of study were actively sought for a wide variety of employment opportunities there was not felt to be a driving need for extensive career counseling and placement activities on the campus. Things seemed to take care of themselves as graduates were faced with a variety of choices and could accept employment or continue on to graduate school. Students who were considering alternatives would generally turn to a trusted individual such as a parent or relative, faculty member, clergyman, or family friend for advice and determine their career directions in this manner. The vast majority was able to gain entry into satisfying and rewarding career areas. Most of those who were unhappy with their initial occupational choices did not find it difficult to shift into other areas, either related or unrelated to their fields of college study.

Monumental changes in this situation became apparent in the late 1960's and led to a situation in which there has been for a decade an overall surplus of college graduates relative to the manpower demand for them. Some of these changes could have been predicted. The effects of the post-war baby boom, for example, hit colleges unprepared and numerous programs to train school teachers were just reaching maturity as the demand for teachers dried up.

The manpower surplus of college graduates has sparked the centuries-old debate of whether the primary goal of higher education is to elevate the cultural and intellectual level of the population, or to prepare the young for professional, technical, and managerial careers. The debate has often been good-natured since both goals appeared to be met for the vast majority of graduates. The new situation has added an urgency to the debate, however, since many graduates have been unable to find appropriate career-entry positions

and, as a result, have questioned the value of their degrees. Ivar Berg[1] in THE GREAT TRAINING ROBBERY and Richard B. Freeman[2] in THE OVEREDUCATED AMERICAN present lucid discussions of the view that, unless appropriate jobs can be found for college attendees, the value of their education is minimized. Their argument is that, in most cases, college is attended as an economic investment and those who do not earn more as a result of college attendance have made a poor investment.

This strict economic view has its weaknesses and those who argue that the entire society benefits from higher levels of education also bear a degree of validity. Governments are thought to be more stable, culture at a higher level, and individuals' derivation of pleasure from aesthetics greater when a high percentage of a population is educated at a postsecondary level.

The problem remains that, when there is a surplus of college graduates relative to the jobs available for them, the expectations of many are not met. A history major who is driving a taxicab is not mollified by the fact that he is aware of the underlying causes of the Russian Revolution; he feels the rainbow at the end of the college tunnel has eluded him. There may be an average of 100,000 such graduates for each year since the late 1960's when the college-level manpower situation reversed from a shortage to a surplus.

The higher education community in the United States has attempted in a variety of ways to meet the problems inherent in a changed manpower situation that has materialized at the same time as a serious limiting of funding for postsecondary education. The concept of "academic planning" has received wide recognition as a means for relating the supply of college graduates to the demand for them. Programs are developed to meet needs in manpower shortage areas while they are cut back in areas of heavy surplus.

In order to identify such areas of shortage and surplus, manpower studies are utilized. In some cases studies are conducted by the higher education community, either a single institution, a state, or perhaps a nationwide association. Often studies conducted by professional organizations such as the American Medical Association or government agencies such as the Bureau of Labor Statistics are used as planning documents. The Carnegie Commission provided numerous detailed studies that related the supply of college graduates to the demand for them and that were used by higher education institutions throughout the nation.

Problems exist in the use of manpower information for higher education planning. There is no way, for example, t assess accurately just how many graduates with each field of study. The problem becomes particularly difficult since educational planning may be based in the past and present, which can be measured, but projection to the future has often been less than trustworthy. Even if manpower planning were reasonably accurate it would be authoritarian to attempt to force students into certain programs because a need might exist.

Manpower planning can be extremely valuable even with its many limitations. Had the teacher surplus been forecast earlier and more widely accepted many human and institutional resources might have been saved. If faculty members, career counselors, and lacement offices had more current and valid information they might be of greater value in their career advising. If college planners had better information on which to make program recommendations they might be better able to generate a manpower supply and demand balance in their own institutions.

This Secti details the current background of College-Level Manpower data, and suggests some proposed activities to collect further data shedding light on State College Manpower planning, should the Board decide to implement these recommendations.

MASSACHUSETTS STATE COLLEGE SYSTEM

The Willis-Harrington Act of 1965 reorganized the Department of Education in Massachusetts. One of the results of the Act as the establishment of a Board of Trustees to administer the State College System. This formation of the Massachusetts State College System was to aid in the provision of a wide range of educational opportunity to the people of Massachusetts. During its first five years the system grew rapidly in the areas of enrollments, land area, faculty, and operating budgets.

In 1972 the Board initiated an effort to set major goals for the entire System. A decline in the growth rate of the System was inevitable and it was apparent that System-wide planning, based upon the needs and capacities of each campus, was sorely needed. The first report of a Long-Range Planning Committee titled AGENDA FOR RENEWAL: A FORWARD LOOK FOR THE MASSACHUSETTS STATE COLLEGE SYSTEMS 1973-80 was produced in 1973.

AGENDA stressed the importance of relating program development to the manpower needs of Massachusetts. The report contained figures reported in manpower projections of the Division of Employment Security of the Commonwealth of Massachusetts, completed in October 1971. The Division used a method developed by the U.S. Bureau of Labor Statistics in generating its projections. The

figures were based upon six major assumptions, three of which will serve to highlight the short-lived value of some very detailed projections.

- *A National unemployment rate of 3 percent is attained in 1975.*
- *The Vietnam conflict will have been over for some time by 1975; defense expenditures will hold at about the 1955-65 rate.*
- *National export-import trends between 1949 and 1968 will continue to 1975 in practically all industries.*

Since projections are only as accurate as the assumptions upon which they are based the 1971 projections of manpower in Massachusetts quickly became obsolete. This is not to say that the assumptions were not reasonable at the time they were made; they simply did not adequately portray future developments.

AGENDA also projected the manpower supply to be produced by the State College System, basing these projections upon enrollments. The diversification of programs in the System was shown as the various campuses appeared to be providing manpower to a wide variety of employment fields within the state. This was in contrast to earlier years when education majors were the bulk of the graduates. The Long-Range Planning Committee expressed pride and satisfaction in the fact that diversification of [illegible]rs and career options seemed to be permitting the institutions t[illegible] erve the state as far more than teacher-training institutions.

FITCHBURG STATE COLLEGE SURVEY OF GRADUATES

In June of 1978 the bachelors level graduating students of Fitchburg State College were surveyed concerning their career plans and aspirations. The instrument used was adapted from a statewide survey conducted by the Indiana Commission for Higher Education in 1975. The Fitchburg study was a pilot project to determine the feasibility of conducting a System-wide survey and whether or not such a survey would provide useful information.

The Fitchburg study received a response rate of 68.8 percent of the bachelor's graduates of May, 1978, and the data reported present a number of important points related to their career plans and aspirations. Eighty percent of the respondents expected that their careers would be closely related to their undergraduate majors though this percentage differed significantly by major. A total of 44.1 percent of the respondents aspired to careers in educational institutions and 23.8 percent in health facilities (all female) with only 4.5 percent seeking to enter business firms and 8.1 percent in welfare agencies or public service. The institution was preparing graduates to work in two primary areas, teaching and nursing, with many other fields gathering in a few graduates apiece.

Particularly alarming was the fact that most of the respondents were extremely uncertain as to what they would be doing only a few

months hence. Though this problem is endemic among teaching aspirants because job offers are late in arriving, the fact that nearly 63.3 percent of the graduates were "highly indefinite" concerning their plans for the next year indicates the possible lack of adequate career counseling and placement help.

This problem was more apparent as only 20 percent of the respondents indicated that they had ever received occupational or career counseling at Fitchburg State. Though their aspirations are high the graduates appeared to be leaving the institution without receiving the type of help that could be of great value to them in planning for their immediate and long-term futures.

The AGENDA report stressed the need for the State College System to provide skilled employees to the private economic sector. To quote that report:

> *If the expansion of the educational systems which is necessary to provide sufficient highly skilled labor does not occur, it is likely that Massachusetts, and New England in general, will find it difficult to compete with other regions of the United States which are more richly endowed with natural resources and locational advantages.*

If, indeed, it is among the goals of the System to provide manpower for business and industry, this goal does not appear to be progressing rapidly.

Teacher training, the former basis of most of the System's Campuses, still appears to be the focus of the System in spite of the nationwide

teacher surplus. A 1974 Task Force on Teacher Education and Laboratory Schools produced a detailed report that emphasized the supply/demand situation for teachers. The Task Force's report stressed that teacher education provided a strong base of general education contributing to the career flexibility of those pursuing education degrees. Though this may be true, the Fitchburg survey demonstrated convincingly that the vast majority of education majors aspire to careers in that field, yet they appear to have received little help concerning the pursuit of alternatives.

Enrollments in education have plummeted on a nationwide level. A focus upon specific teaching areas such as special education and the industrial arts, which have maintained manpower shortages, provide short-term stopgaps but, in a long-term sense, diversity of programs can best serve to maintain a constant level of enrollments throughout the campuses.

A college orientation and career counseling service would emphasize career options open to students enrolled in the college and the validity of those options. The majority of students need guidance in connection with employment opportunities. They need data on the job market as well. Career Planning Centers, at Fitchburg and one or two other Colleges, have initiated these programs that offer career counseling as well as health and other forms of counseling.

CURRENT PLANNING BASE FOR MASSACHUSETTS STATE COLLEGE SYSTEM

The Massachusetts State College System is not a national institution but draws primarily from Massachusetts and a majority of its graduates hope to stay within the State. Most of its graduates are "first generation" college attendees and have enrolled in order to better their positions in life. Under such circumstances it becomes particularly important that institutional planning take statewide manpower supply and demand into account.

There is currently a dearth of information that would be of value in conducting such planning for the State College System. The Massachusetts Division of Employment Security has produced new statewide projections to 1985, more sophisticated than those described above, but such projections serve as very broad guidelines and become less valuable with time. In the areas of business employment, education, government service, and health, the availability of manpower supply/demand information pertaining to the state is sorely limited.

Simultaneously, manpower supply information for the State College System is also not available. A System-wide survey such as that undertaken at Fitchburg would provide such data. A detailed follow-up study of the graduates of each campus, approximately four months after graduation to determine what they actually do the first year after graduation would be of great value.

In order to engage in effective planning related to career opportunities for its graduates the Massachusetts State College System needs a strong planning base. Without the availability of certain types of data planning cannot be effective. The purpose of this Section is to suggest a way in which this needed manpower-related information can be provided.

The current state of the art of manpower planning and analysis cannot measure the future supply of and demand for college graduates with total precision. Too many variables, which tend to experience short-term fluctuations, have strong impacts upon studies in this field. Economic developments, technological developments, and the changing plans of the graduates themselves regarding career and geographic preferences make such planning and analysis an imprecise science.

Manpower studies, however, can be extremely valuable in providing information that aids in moving in the direction of a balance between the supply of and demand for graduates. As information concerning career opportunities is provided to students they tend to make wiser decisions regarding their own plans.

Manpower information also is used by institutions and statewide planning boards in determining new program development. The over-supply of college graduates is not universal but relates most closely

to certain areas of study, geographic regions, and career fields while others continue to experience undersupplies. While some jobs are begging for applicants there are many bright graduates who are forced to accept positions they would prefer not to take. The effective use of manpower analysis by no means guarantees an exact balance between the supply of and demand for graduates but contributes to movement toward such a balance. For this reason manpower supply and demand information is of great value and concern to all postsecondary education institutions in their planning activities.

The Massachusetts State College System initially emphasized the field of teacher training in preparing its students for employment. Recent years have seen numerous new programs initiated at the campuses of the System, some related to career fields and others of a more general nature. As campus enrollments nationwide have leveled off and as the job market for college graduates has become increasingly competitive, the need for manpower data related to the State College System has been intensified. In order to prepare the graduates of the System for the world of work in a manner which best suits the demand for them, the following types of information are needed:

1. *What are the career plans and aspirations of students who attend the Massachusetts State College System?*

2. *What types of jobs are available, in Massachusetts, for the graduate of the State College System?*

3. *What are the major job areas in which the State College System appears to be producing too many or too few graduates relative to the demand?*

4. *How can the State College System develop and implement an effective career counseling and placement system?*

The purpose of the study outlined in the remainder of this section is to answer these questions. It approaches a complex issue and, because of the topic, is broken into a variety of sub-topics, each related to the broad questions posed above.

The Indiana College-Level Manpower Study was conducted by the Indiana Commission for Higher Education in 1974-75. This study provided a great deal of college-level manpower information of the type which could aid the Massachusetts System. Where feasible, aspects of the Indiana study will be used in developing guidelines for the Massachusetts study.

PROPOSED ACTIVITIES FOR 1979

I. Identify materials currently available in Massachusetts that relate to the supply of and demand for college graduates and build working relationships established with those who produce or utilize such information.

A detailed review of related literature and research will be produced. (3 to 4 months)

II Provide information on the manpower supply produced by the Massachusetts State College System.

This objective will be met by means of a survey of students shortly before their graduation from the Massachusetts State College Syst (M.S.C.S.) The 1979 graduates will be questioned about their career plans and aspirations.

Manpower supply will also be assessed by surveying the 1979 graduates approximately six months after their graduation to determine what they actually did.

III. Provide information concerning the demand for college graduates in major employment areas in Massachusetts.

Studies will be conducted in the following areas:

- *Business and industry*
- *Teaching*
- *Government employment*
- *Health Fields*

IV. A proposal will be developed to organize a career planning and placement network for the M.S.C.S.

The network will be developed in accord with study reports and the nature of the State College System's administrative structure.

REVIEW OF RELATED LITERATURE AND RESEARCH

The initial step of the study would last for approximately three to four months and involve an in-depth review of literature related to college-level manpower in Massachusetts. National and regional studies and reports will be reviewed and all state agencies, associations, institutions, etc. will be canvased in order to identify any sources of potential data. A report on the review of literature will be prepared and distributed widely to individuals within the State College System (to aid in counseling students and in publicizing the study) as well as to various other individuals who can benefit from such a report.

Concurrent with conducting the literature review the project director will be establishing contacts within the state. At various times it will be necessary to solicit aid and information from individuals or organizations outside the State College System so the stage of publicizing the study and gaining support for it outside the system will be extremely important.

Within the system a contact person will be appointed at each campus. The cooperation of the contact people will be critical at various stages of the project so they should be kept informed of the study's progress and solicited for suggestions and contributions. The contact people should be designated by the president at each campus (e.g., those persons in the field of career planning),

and their duties should relate to the topic of study. The contact people will also serve as the internal evaluators of the study. For details of this role, see the evaluation procedures described below.

SURVEY OF GRADUATING STUDENTS AT TEN STATE COLLEGES

The best measure of college-level manpower supply is an analysis of the short and long-term occupational plans of those about to graduate shortly before their leaving the campuses. The timing of such a study is of major importance because the students are contacted at a point when they are still in the institution yet most have established strong preferences as to what they would like to be doing the following year.

The Indiana study demonstrated that a survey assessing college-level manpower supply could be conducted on a statewide basis and that the information obtained would be valuable to program, planning and student counseling. A pilot study using the Indiana questionnaire (adapted as appropriate) was conducted in June 1978 at Fitchburg State College. The findings of the study present a profile of the relationships between the academic program at Fitchburg and the employment market. (See Section I for the complete report of the Fitchburg pilot study) The study delves not only in the occupational and career plans and aspirations of the Fitchburg graduates but also looks into the ways in which these decisions were reached.

The proposed manpower study will include a similar survey conducted on each campus of the Massachusetts State College System. Each campus will receive its own detailed report and the data will also be reported

in its total form, offering a view of the total contribution to manpower supply of the State College System.

This proposed survey would be conducted during 1979 at all the State Colleges. The evaluation committee will determine the frequency with which it should be replicated.

The State College System does not currently conduct a detailed follow-up of what activities its graduates actually pursue subsequent to their graduations. A very sketchy survey, focussing upon education majors is conducted but this effort does not provide the type of information needed to determine the degree to which students are able to meet their goals.

The study will monitor the initiation of an aggressive follow-up survey sent out from each of the System's campuses. This survey will be designed in such a way as to become an annual effort so that such statistics as successful placement rates, percentages of students going into specific fields, etc. can be monitored.

The first report of this follow-up survey will be compared to the earlier survey of students conducted immediately before their graduations. An attempt will be made to see if the majority of students appear to be successfully attaining their goals for the post-graduation time frame.

SURVEY OF BUSINESS AND INDUSTRY

The private sector of the economy is a major employer of college graduates, absorbing approximately forty percent of those who receive bachelor's degrees each year. These graduates include not only business or engineering majors but also large numbers of those who have pursued other areas of study.

Assessing the demand for college graduates within the business community is an extremely difficult task because needs are extremely dependent upon fluctuations in the economy and can vary greatly not only from year to year but even from month to month. Projections for statewide manpower demand have been developed by the Massachusetts Division of Employment Security ("Employment Requirements for Massachusetts by Occupation, by Industry: 1970-1985") and though these projections often become dated it would be nonproductive for another agency to attempt to develop new ones. The D.E.S. invests enormous time and resources in developing their employment projections and it would be a quixotic effort to attempt to improve upon their work when so many other things can be done.

Using the data of the D.E.S. as a base, a study will be conducted to relate the types of jobs available in the private sector to college education. There are very few jobs in which a direct one-to-one correspondence between degrees and jobs can be identified. For example, jobs in fields such as accounting and data systems often

require course work in related fields but not necessarily the major. In more general areas such as sales, store management, bank management, personnel administration, etc. it becomes even more difficult to relate entry-level job openings to college majors and degrees yet most of the entry-level openings in these fields are filled by recipients of at least the bachelor's degree.

Business/industry and educational systems will need more mechanisms for sharing experiential data in order to derive mutual benefits. In a 1972 research study of career opportunities for the handicapped and disadvantaged in the Northern Worcester area, such cooperation was evidenced. This research study, prepared in cooperation with Fitchburg State College, stated: "An important source of specific job opportunity information is to be found in the administrative offices and top mangement cadres of the employing establishments of (Massachusetts) communities."[3] Questionnaires similar to those developed for the Barkley & Dexter employment surveys could be utilized:

In order to relate college degrees to entry-level positions in Massachusetts business and industry, an interview study of major business employers will be conducted such as high technology industry (e.g. Digital Equipment Corporation). This study will attempt to accomplish the following:

1. *Identify the types of majors generally sought by business/industry in filling specific entry-level positions.*

2. *Identify the types of positions in business/industry for which graduates of the State College System might qualify.*

3. *Identify apparent areas of college-level manpower oversupply as these relate to local business and industry.*

4. *Determine characteristics of applicants other than education background that are thought by employers to be important.*

5. *Assess employers' views toward the underemployment of college graduates.*

6. *Solicit employers' suggestions as to how the State College System can further its efforts to prepare students for employment.*

The study sample will be drawn with the help of the D.E.S. and will include a wide variety of business employers represented in Massachusetts. The entire state should be represented, particularly those urban areas in which State Colleges are located.

It would appear that the Massachusetts State College System is currently providing few graduates for the private sector employers of the state. The pilot study conducted at Fitchburg State found business employment to be the goal of virtually none of the graduates of that campus.

One of the major goals of this survey will be to assess the employability of graduates of the State College System in business and industry. Not only will areas of manpower undersupply be identified but information will also be gathered that will describe in detail the types of backgrounds sought by employers in filling a majority of their college-level positions.

The methodology for conducting the survey of employers will closely follow that of the Indiana study, with from four to six

student assistants each conducting 50-70 carefully-structured interviews.* One obvious advantage for following the Indiana model is the fact that it has been tested and proved to supply meaningful, useful data. The Indiana methodology and interview format will be critically viewed to assure that all aspects of the survey relate to the needs of Massachusetts and the State College System.

The report of this survey will be of importance in program planning as it may indicate ways in which students may be prepared for private sector employment without an institution's having to develop a large number of new major fields of study. In many cases, it may be a matter of providing a small number of business-related courses to prepare students for the option of private sector careers. Such a program can offer an alternative course of action for education majors who find a difficult job market ahead of them.

The data of the report will also be very useful to those who counsel students in the areas of career planning and placement. It will give them ideas on the best ways to help students prepare for business or industry careers. The reports will be useful to career development centers housed at the various colleges. The personnel at these centers will find the information useful in such activities as (a) preventing premature or unnecessarily delayed vocational decisions; (b) encouraging rational career choices; and (c) providing an early-warning system to detect personal problems related to career development.**

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*These forms of collaboration are presently being explored through the Dover Center--Commonwealth Center for High Technology--and future data collection in employment opportunities could be provided through working with such [illegible] industries in the Commonwealth as Digital Equipment [illegible].

**Felix C. Robb, Director of the Southern Assoc. of Colleges & Schools.

TEACHER SUPPLY AND DEMAND

Historically, the Massachusetts State College System has been a major provider of elementary and secondary school teachers in Massachusetts and outside the state as well. The highly-published surplus of teachers nationwide in almost all teaching areas has resulted in greatly reducing the number of college entrants who plan on pursuing careers in teaching. However, there are some areas in which shortages of teachers exist as well as some combinations in which shortages may exist, and little is being done to anticipate levels of future demand.

A very simple report of teacher demand and supply can be completed by means of surveying all school districts in Massachusetts and by analyzing current enrollments in the state's higher education institutions. A report such as this should be conducted on an annual basis and this study will develop the methodology and instruments for such a report. The information will, however, be somewhat short-term in value.

A survey of this sort was conducted in the spring of 1978 by the Merrimack Education Center. The goal was to determine areas of teacher oversupply or undersupply and to assess whether such a survey could elicit useful information in Massachusetts. A review of this pilot survey is contained in Section II of this report.

In order to develop meaningful projections of teacher demand it is necessary to have accurate and up-to-date information on the teachers currently employed within the State. Essential to projecting future demand for teachers is a detailed knowledge of current teachers including such items as number of teachers, their ages, years of experience, levels of education, fields of specialization, and turnover or attrition rates. This information is not presently collected in Massachusetts and the project director will investigate the feasibility of working with the State Department of Education to determine:

1. *The types of data to be collected.*
2. *The methods to be used in collecting the data.*

The Indiana Manpower Study produced a useful methodology for developing projections of teacher demand. These projections were based upon demographic data maintained by the State Department of Education. The data utilized in the Indiana Study will serve as a starting point in assessing the types of information that might be collected.

As a meaningful data base for teachers within the state is developed it will be possible to develop a far more technical and accurate manpower projection on the demand for teachers in Massachusetts.

Projections of numbers of students within the state's school systems are also important. Such projection can be used to determine

the overall number of teachers that should be employed in Massachusetts in future years. These projections tend to be fairly realistic since the enrollments for future years are based on children already born.

An accurate assessment of the overall new teacher supply in the state would also be difficult to develop. There is no central source of such information and a simplistic method such as including only those who apply for certification would provide inaccurate data since many of those who become discouraged by the job market never seek formal certification.

Special area studies, however, can be conducted. For example, all programs in the state that produce special education teachers could be surveyed for current and projected numbers of graduates. These could then be developed into a projection of the new manpower supply in the special education fields. The same sort of procedures could be followed for other teaching areas of a highly specific nature.

The teacher supply/demand project should be initiated early in the coming year and conducted in two phases. The first phase will include the survey of superintendents (to be conducted annually thereafter) and the work with the State Board of Education to promote the gathering of demographic data on teachers. The second phase will include the development of demand projections (based upon projected school enrollments and the current teacher population) and the conducting of any special area studies.

The research studies annually prepared by National Education Association would be useful to this task. The Director of Research for the Massachusetts Teachers Association could also serve on the advisory committee for this review of teacher supply and demand data as it relates to the State College programs.

GOVERNMENT/PUBLIC SERVICE STUDY

The areas of potential employment in government and public service are highly varied and extremely difficult to assess. State and local government offices may employ college graduates in a number of different positions. Welfare and social service agencies also absorb some of the graduates seeking employment in this type of work environment. These areas have been explored relative to the human service educator.

The supply of graduates from the State College System who anticipate pursuing government or public service work should be identified from the survey of graduating students. Demand will be measured by surveying a sample of state and local government offices and social service agencies to determine the frequency with which they hire State College graduates and the number of applications received for each type of opening. Such a survey should give an idea of the availability of job openings for graduates within this general category.

This segment of the study will not begin until the overall effort has been underway for approximately two months. This will allow time for contacts within various areas of government to be established. Some initial efforts have already taken place in the State College System's on-going relationships through the Federal Cooperative Educational programs in conjunction with Section I, Civil Service division.

HEALTH FIELDS ANALYSIS

The manpower supply/demand situation in the health fields is extremely complex. Some occupations in these fields are now approaching serious oversupply situations while others remain in serious undersupply. Problems in trying to achieve balances are heightened by the fact that some of these "undersupply" areas have jobs available only on late night shifts or in "undesirable" locations where few trained people desire to work.

Another problem faced in meeting manpower demand is the fact that many of the health technician occupations are little-known. Beyond the professions of doctor-nurse, most high school graduates can name precious few of the technical occupations practiced in a health facility.

Manpower demand to the health fields is difficult to assess because of the plethora of occupations and the variety of work environments (hospital, school, private practice, clinic, etc.) However, an assessment of the supply demand balance will be attempted by contacting the hospita. in Massachusetts. Oversupply and undersupply areas will be identified and those that relate to educational programs (present or potential) at the State College System will be investigated in greater detail in a second phase of this study.

The study of the health fields will begin approximately six months after the initiation of the overall study.

EVALUATION

This study will be subject to both internal and external evaluation. The goal of the evaluation will be to keep the project directed toward its long-term goals as well as conducting a detailed analysis at the end of the first year of the study's activity.

The internal evaluation will be conducted by the study's contact people at each of the Massachusetts State College System campuses. These contact people will be apprised of each development in the study's progress and will have the opportunity to critique methodologies, questionnaires, and procedures.

At the initiation of the project the contact people will be brought together for an extensive meeting in which the project's goals and their roles in conducting the project will be explained. Their suggestions will also be solicited as the initial stage of the work will involve not only the review of literature but also will entail the formulation of much of the study's methodology.

Approximately 4-5 months after the beginning of the study's activity another meeting of the contact people will be conducted. They will assess the progress made and offer further suggestions as to how long-term goals might be achieved. The final meeting of this group will be held at the end of the proposed project year of the study when projects completed during the year will be formally evaluated.

The internal evaluation group will include representation from other organizations that might have significant interest in seeing the study completed. Among these potential members would be representatives of the governing board of the State College System, the Merrimack Education Center, and whatever organizations provide the bulk of the findings for the study.

An outside consultant will also be used as a formal evaluator. Appropriate candidates would be the director of the Indiana Manpower Study, a private consulting agency, or a known authority in the field of manpower analysis. This evaluation will, on a consulting basis, preview drafts of proposed methodologies and survey instruments. Approximately six months into the study the external evaluator will meet with the project director, review all progress to date, and write a report evaluating the degree to which work is progressing toward meeting its goals.

The evaluation process will act as a compass, continually assuring that the overall project is moving in the appropriate direction. As the proposed activity approaches its close, both internal and external evaluations will play a major role in the charting of the course of the study for the following year.

REFERENCES

1 Berg, Ivar. Education for Jobs: The Great Training Robbery. New York, New York: Praeger Publishers, 1970.

2 Freeman, Richard. The Overeducated American. New York: Academic Press, 1976.

3 Barkley & Dexter, a Research Study of the Handicapped and Disadvantaged in Northern Worcester County leading to a pilot program in Occupational Education and Career Development. Fitchburg, Massachusetts: Barkley & Dexter Laboratories, Inc., 1972, pg. 5.

Section IV

CAREER OPPORTUNITIES IN SPECIAL EDUCATION AND HUMAN SERVICES

Planning Recommendations

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RECOMMENDATIONS

Several opportunities are available for the State Colleges of the Commonwealth of Massachusetts to increase their contribution to the education and to other human services for people with special needs. Recommendations for future contributions address policy changes in education programs. These changes are in the direction required by Section 504 of the Rehabilitation Act of 1973, and with the priorities established for funding personnel preparation programs by the U. S. Bureau of Education for the Handicapped. More importantly, these recommendations reflect a commitment from the Massachusetts State College System to the broadening of existing efforts so as to optimize current programs for persons with handicaps as well as to an expansion of services available to them.

Each recommendation indicates ways that opportunities for increased contributions might be approached. Each recommendation can be implemented with existing resources or through applying and obtaining various discretionary funds available through the state or Federal government. The theme running through all of the recommendations is that the State Colleges of Massachusetts can focus their efforts and resources on developing, testing and disseminating new models of training staff and delivering human services to citizens with handicaps.

RECOMMENDATION 1: ***ESTABLISH A CEILING ON THE NUMBER OF SPECIAL EDUCATION MAJORS IN MASSACHUSETTS STATE COLLEGES***

The ceiling and a timetable for its implementation should become a matter of public record. This could be accomplished by setting a limit on the number of students who graduate with a special education major with a baccalaureate or graduate degree or by putting a ceiling on the total number of students enrolled as special education majors at any one time.

RECOMMENDATION 2: ***ESTABLISH THREE ACTIVE SPECIAL EDUCATION PROGRAMS IN THE COMMONWEALTH WITH AN EMPHASIS IN SPECIALTIES IN WHICH THEY NOW EXCEL***

a Bridgewater State College

Establish a limited number (to be determined by the State College Board of Trustees) undergraduate program for:

1) special education majors with a concentration in adaptive physical education;
2) secondary education of students with special needs; and
3) programs for adjudicated youth (those with severely socially maladjusted behavior resulting in court action or residences like Bridgewater State Hospital).

b. Fitchburg State College

Establish a limited number (to be determined by the State College Board of Trustees) undergraduate program for special education majors in:

1) services to people with severe and profound special needs;
2) vocational training for people with special needs.

The current program at Fitchburg State for teachers concerned with severe/profound special needs is of exceptional quality. The industrial arts program is also recognized across the nation. These quality programs should be retained and improved upon in the years ahead.

c. Westfield State College

Establish a limited number (to be determined by the State College Board of Trustees) undergraduate program for:

1) music therapy and art;
2) consulting and resource teachers;
3) juvenile justice.

The basis for this recommendation is the experience of the special education staff with the consulting and resource teacher model as well as the strengths of music, art and cuminal justice.

RECOMMENDATION 3: ESTABLISH A CONCENTRATION OF STUDY IN INDIVIDUALIZATION OF PROGRAMS FOR SECONDARY EDUCATION MAJORS

This focus would provide extensive practicum experiences with mainstreamed secondary school-age students who have special learning needs. The concentration would be intended for teachers who will offer all of the standard secondary school courses such as English Literature, foreign languages, physical sciences and mathematics. Worcester, North Adams and Boston State College faculties have shown initial interest and have an emerging capacity to offer such a concentration. In addition, Westfield State has received a three-year BEH grant to focus on the secondary school needs.

RECOMMENDATION 4: REQUIRE TEN (10) CREDITS OF STUDY IN SPECIAL EDUCATION FOR ALL EDUCATION MAJORS, INCLUDING ELEMENTARY AND SECONDARY TEACHERS, ADMINISTRATORS, AND SCHOOL SUPPORT SERVICES PERSONNEL SUCH AS SCHOOL PSYCHOLOGISTS AND COUNSELORS

a. Three (3) credits should be awarded for successful completion of a course, Introduction to the Field of Services to People with Handicaps. The course should provide an overview of the array of generic and supplementary services available in and out of schools. Services to be reviewed include group homes, independent living arrangements, vocational opportunities, sheltered employment, income maintenance programs, special school arrangements, and adaptive equipment etc.

b. Three (3) credits should be awarded for successful completion of a course, Methods for Individualized Instruction. The course should emphasize ways to design new individual education plans, adapt existing education programs and offer non-classroom learning opportunities for people with unique learning styles. The course should review goal setting, objective writing and prioritizing, task analysis, resource planning and program evaluation, as they relate to assisting people with special needs to live a more normal and independent life.

c. Four (4) credits should be awarded for the successful completion of a Practicum that has extensive contact with people with special learning needs. The practicum could occur in a generic setting (such as an integrated regular English literature classroom) as long as at least fifty contact hours with handicapped people are accumulated. The emphasis in the practicum should be in gaining supervised experience and proficiency in individualizing instruction for people with special needs registered in a regular program.

RECOMMENDATION 5: ESTABLISH FORMAL RELATIONS WITH THE MASSACHUSETTS DEPARTMENT OF EDUCATION AND EXECUTIVE OFFICE OF HUMAN SERVICES IN ORDER TO PLAN INNOVATIVE USES OF CURRENT LABORATORY SCHOOLS AND PROGRAMS

Some Laboratory Schools should be converted into Research and Development Units for the design of innovative models and programs for youth and adults who require special attention. The Dover Center should provide the technology to support such a venture. Each Research and Development unit should be established to use the most sophisticated technology available in that campus to solve pressing, current and emerging problems. The following priorities should receive the initial focus of research and development efforts.

a. Develop innovative secondary school models for serving students with and without handicaps

Components of a continuum of service models are needed. These components would fill out the continuum between alternative schools and

comprehensive high schools. The idea would be to bring the personnel trainers and service providers together so that both can contribute their views and experiences to the statements of needs and to ways that these needs can be resolved. Together, they would design a service delivery component, train staff, implement the model in a laboratory setting (not necessarily on a state college campus), evaluate the new program, train other service people to use the model and provide technical assistance to other schools or agencies that will use the model to offer routine services to people with special needs. Although the focus is on secondary education, models should be developed that use the educative opportunities in conventional community life, as well as those on school campuses.

b. Develop innovative programs for adjudicated youth

Additional service models are needed to identify more ways of contributing to the growth of youth with histories of chronic encounters with the law. Existing service models might be replaced or supplemented with models developed in state college research and development units. This would involve combining efforts with private vendors that are currently operating programs. Together, college faculty, public school staff and private entrepreneurs could design and implement different service models. Successful parts of models could be replicated by arranging the joint training and retraining service for staff.

c. Develop training models for bilingual special educators

Boston, Bridgewater, and Westfield State Colleges could be emphasized because of the high proportion of Spanish and Portuguese-speaking students within their geographic areas. The same research and development pattern could be used to design, test-evaluate, train and provide technical assistance to education and service agencies.

d. Develop innovative early childhood education programs that unite into one common effort of family support systems, human service systems and schools

Family members, children with special learning needs, educators and family support agency staff members should work together to design ways to combine efforts. Family members should be supported to state their dreams and aspirations for their child. Educators and service agency staff should contribute to the design of service patterns that support the family to approximate its goal more closely than if the services were not available. Staff training would focus on ways for family members to express and realize expectations through efforts of professional educators and service agency staff who work in family settings.

e. Develop new models for adult vocational and rehabilitation programs

Interviews suggest that many private agency staff would welcome cooperative involvement with state college faculties. Models should be developed to apply existing technical information about human potential to adult life. Information from both the behavioral and social sciences could be used to construct adult service and training much the way it has been used for constructing and using models for children's education and development. Adult-oriented models should explore the opportunities offered in industry, agriculture, and commerce, as well as those providing more sheltered experiences.

f. Develop innovative programs for providing respite care for families with a member who requires extraordinary care

The models should arrange expanded community living opportunities for the person with special needs, as well as relieve other family members of their constant obligations. State colleges could contract to run community living programs, and also to train student educators and others to use their skills in non-school settings. A laboratory approach could be used to insure that a model is designed, tested and evaluated. Models

could be designed for supporting independent living arrangements, supervised apartment living, and adult foster-family care. A very pressing need exists for creative effort to design and operate respite homes and other community living arrangements for people unable or unwilling to care for themselves.

g. Establish a model behavior-shaping program to meet the needs of severely disturbed youth

The model program would probably include a highly-controlled environment, although innovative, unobtrusive controls would be preferable. The model would be to offer short but varying time in the program. Consideration could be given to the various education and developmental models used throughout the country for reducing severe behavior problems.

These seven model programs are examples of the direction of cooperative research and development efforts that might result from formal relations with the Massachusetts Department of Education and the Executive Office of Human Services. Once these relationships are established, new opportunities are very likely to be identified, which could be very challenging and exciting. The Research and Development Units would, in effect, be returning to the original idea of laboratory schools: i.e., providing a controlled enrivonment to address basic problems in education. The Research and Development Units can extend educators' commitments contributing the cutting edge of resolution of problems in non-school settings.

RECOMMENDATION 6: ESTABLISH A HIGHLY SUPERVISED AND SPECIFIED PRACTICUM DURING THE ONE OR TWO YEARS BEFORE THE STUDENT DECLARES A MAJOR

A significant program strengthening is recommended for practicum activities. A specified number of different kinds of exposures are recommended to be structured into the program. The advisor to the student would check-off completed, supervised early practica. These would be done in small groups, with direct faculty involvement, and significant discussion

after observing each program. For example, each student would see nine different programs a year (one per month of the school year). Observation would be structured to include different age groups, different living settings, teaching settings, habilitation settings, and a variety of other opportunities to see how human service systems do and do not work to the benefit of people with special needs.

a. The culmination of the early practicum and observation should be a series of structured counseling sessions. In these sessions, the faculty would have the opportunity to counsel-out students for whom special education does not appear an appropriate choice.

b. Senior faculty, not young specialists, with a broad view and an experienced in-depth technical understanding of possible educational and service opportunities should conduct the early practica, observations and discussions.

RECOMMENDATION 7: ESTABLISH A CLEARER RELATIONSHIP BETWEEN METHODS COURSES AND PRACTICUM COURSES

For the purpose of this report, methods courses should be viewed as formal learning opportunities where students are provided information on various approaches and strategies for teaching others. These approaches and strategies can be described behaviorally as specific competencies. Practicum courses are supervised opportunities for students to demonstrate these competencies with structured procedures for feedback.

a. The link between the two should include at least these three elements:

1) description of approaches for working with children and adults in various settings;
2) opportunities to observe these approaches in use;
3) opportunities to try these approaches under supervision.

b. Available technology for facilitating human development and education is too sophisticated and complex to leave the link between methods and practicum to chance.

1) more faculty time is necessary to establish a rational relationship between practica and methods;
2) more importance in the curricula should be given to methods courses;
3) the best, most currently-experienced faculty should be assigned to the practical parts of personnel preparation;
4) expand the number of appointments of adjunct faculty with routine assignments in the field settings (like public schools and community agencies) to assure that training regardless how "innovative" is also relevant to existing schools and service systems;
5) provide more planning time for faculty and field staff to design relevant practica and methods experiences, and relate them to a wide variety of potential jobs for students in education and human services.

RECOMMENDATION 8: ***DEVELOP OPPORTUNITIES FOR CAMPUS FACULTY TO PARTICIPATE MORE IN THE IN-SERVICE TRAINING OF BOTH PUBLIC SCHOOLS AND PUBLIC AND PRIVATE HUMAN SERVICE AGENCIES***

One mechanism to provide these opportunities is to prepare for legislation a full-time equivalency formula that would credit campus-based faculty for their contribution to agency staff development time. This formula would complement the existing student-faculty formula for establishing the college budget.

RECOMMENDATION 9: ***ESTABLISH FORMAL PLANNING LINKS BETWEEN STATE COLLEGES AND THE AREA PLANNING TEAMS REPRESENTING MASSACHUSETTS EDUCATION AND HUMAN SERVICES AGENCIES IN THEIR GEOGRAPHIC AREA***

Also establish a comparable link between the Massachusetts Department of Education Policy Group, the Executive Office of Human Services Policy Group, and the Office of the Chancellor, Massachusetts State Colleges.

Someone from the Chancellor's office should be assigned as a liaison to work with these groups so that cooperative planning will receive a high priority. Joint planning will facilitate the State Colleges' preparation in meeting up-coming needs in education and human services.

RECOMMENDATION 10: ***STRONGLY RECOMMEND THAT AT ONE SITE AN EXPERIMENTAL FIVE (5)-YEAR DOUBLE MAJOR IN EDUCATION AND HUMAN SERVICES BE ESTABLISHED***

The design and testing of the program could be a joint effort by the State College, the Massachusetts Department of Education, and the Massachusetts Executive Office of Human Services. This program could be designed to prepare generalists who know how to draw together and apply creatively existing technical information about ways to facilitate human growth and independence of service recipients. Consequently, the program should focus heavily on generalizable competencies in problem solving in the design and implementation of programs and services for persons with handicaps.

The five-year program is suggested as one way to try to avoid certifying dilettantes. Options for implementation could include:

a. attendance at one or two colleges, one of the two being outside of the state system. The major at one college could be completed in three or four years, the major at the cooperating college could be completed in one or two years.

b. provision of a Master's degree for successful completion of the five-year program.

RECOMMENDATION 11: *MUCH HEAVIER EMPHASIS SHOULD BE GIVEN TO THE DEVELOPMENT OF WRITING AND PEOPLE-MANAGEMENT SKILLS DURING THE FIRST TWO YEARS OF COLLEGE*

All human service staff members interviewed pointed out that writing and human management skills are highly desirable for all entering-level employees, and are a requirement for those wanting to receive promotion.

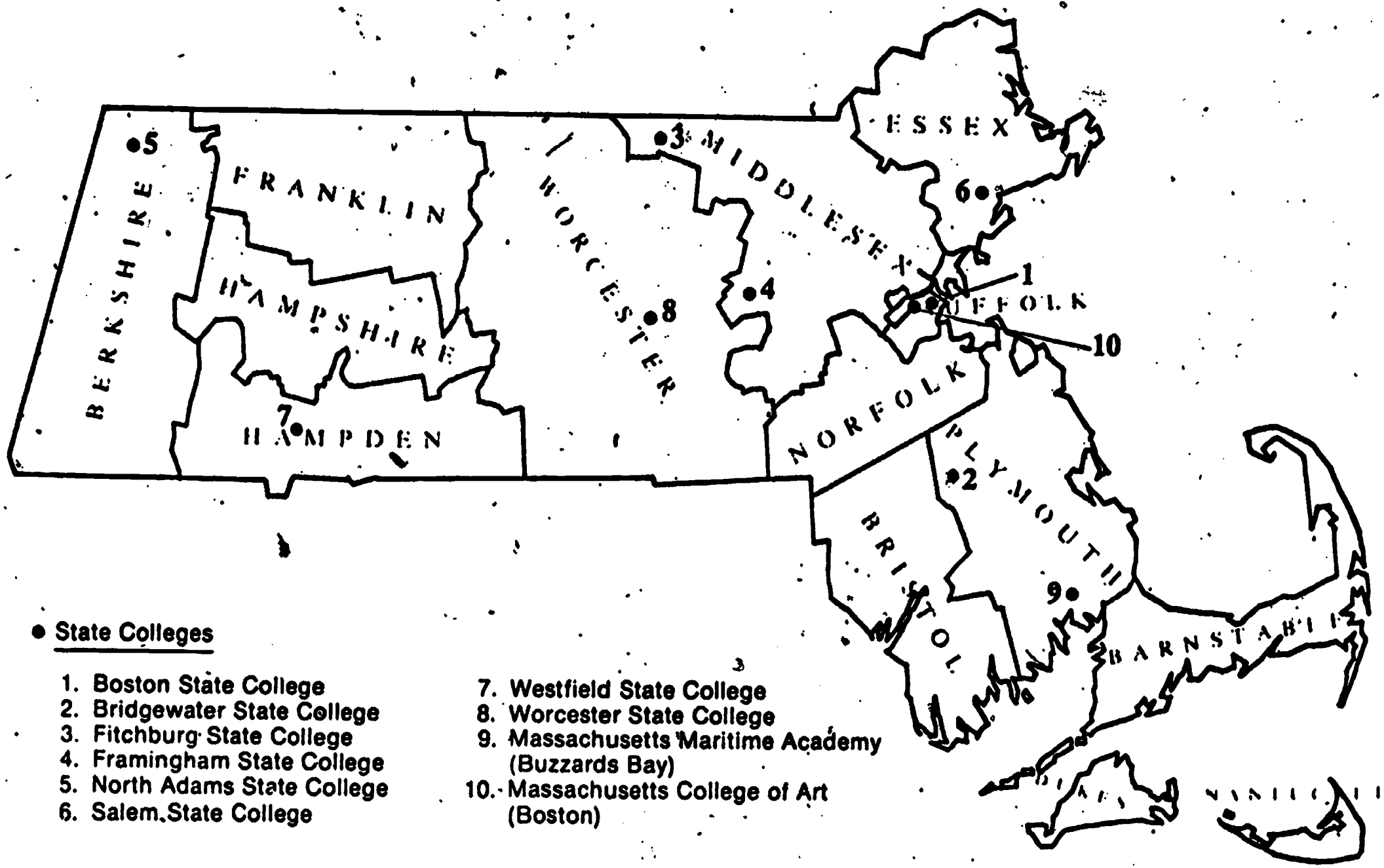
Secondary skills identified, which are equally important for career advancement, are those in analysis and synthesis of practical, every day service situations. Analysis is needed in situations to identify why a particular situation is a problem for one person and facilitating for another. Synthesis skills are needed to be able to create and initiate adjustments in the situation so that more benefits are available to service recipients. An example of the applicability of these skills is the process of relating referral and appraisal information to the design of a total living and service plan for a client moving from the institution to a community program.

RECOMMENDATION 12: *ESTABLISH CONSORTIUM WITH PRIVATE INSTITUTIONS OF HIGHER EDUCATION AROUND SPECIFIC ISSUES ENCOUNTERED IN THE RESEARCH AND DEVELOPMENT UNITS AS WELL AS OTHER FORMS OF PREPARATION OF PERSONNEL FOR HUMAN SERVICES*

a. Cooperatively design undergraduate programs that lead directly to private institution graduate programs.

b. Integrate technical aspects of model program development with policy study capacity of private institutions.

MASSACHUSETTS STATE COLLEGES



- State Colleges

1. Boston State College
2. Bridgewater State College
3. Fitchburg State College
4. Framingham State College
5. North Adams State College
6. Salem State College
7. Westfield State College
8. Worcester State College
9. Massachusetts Maritime Academy (Buzzards Bay)
10. Massachusetts College of Art (Boston)

STATE COLLEGE PLANNING PROJECT
FOR RESPONDING TO NEW CAREER OPPORTUNITIES

GENERAL INFORMATION AND BACKGROUND

This study investigated the relationship between (1) the present thrust of special education and related personnel training programs in Massachusetts State Colleges, and (2) the changing employment market in the service of handicapped people and the need for institutions of higher learning to respond to the emerging needs of persons with handicaps in Massachusetts. Returns from a survey questionnaire identify which areas of specialization need more educators to teach students with special needs. Interviews with state college faculty, students and administrators, state human service agency training officers and human service vendors yield descriptions of expectations and needs for training special educators and related human service workers. Results from the study are used to recommend specific action that might be taken in the State College system to relate training efforts more effectively to the changing opportunities for persons with handicaps in all aspects of society and the consequences of these changes on the job market for educators and service workers concerned with people with special needs.

Background

Recent legislation and court actions in Massachusetts and the Federal government have brought the training of special educators and other human service workers into public view.

Chapter 766 of the Massachusetts Acts of 1972 mandates that education be provided to all children of school age, including those with special needs.

Public Law 94-142 (Education of All Handicapped Children Act) requires that all children in the United States, including those with handicaps, receive a free, appropriate education.

Section 504 of the Rehabilitation Act of 1973 guarantees the civil rights of people with handicaps, including their right to equal access to any program building or employment situation which is provided by Federal funds.

The combination of these state and Federal laws result in some fundamental changes in today's society.

1) *Education has been redefined as fully including all children regardless of the type or degree of their handicapping condition.*

2) *All persons involved in public and private education in the United States have new responsibilities to assure that this newly won right to education is implemented in a manner designed to meet the individual education needs of each child in the least restrictive environment.*

3) *Standard school programs as well as all elective and extra-curricula opportunities must be redesigned to accommodate otherwise qualified persons who have handicapping conditions.*

4) *Employment opportunities must be developed to assure that persons with handicaps who are otherwise qualified can reasonably support themselves and advance in the careers of their choice.*

5) *Programs in higher education must be re-examined to assure that persons with handicaps who are otherwise qualified will have reasonable opportunities to prepare themselves for the careers of their preference.*

6) *All agencies receiving funds from the Federal government (colleges, hospitals, private contractors, libraries, etc.) must perform a rigorous analysis of their program and employment practices to assure that persons with handicapping conditions who are otherwise qualified have reasonable access and opportunity to receive services and earn a living.*

Judge Broderick of the United States District Court for the Eastern District of Pennsylvania rendered the opinion in December, 1977, that custodial institutions (state-operated total care facilities) are unconstitutional, regardless of their intended services to residents and that Pennhurst State School in Pennsylvania should be closed.

While the implementation of Chapter 766 has significantly changed the configuration of public education in Massachusetts over the past four years and while it has significantly changed the manner in which special education services are delivered, it has even more dramatically changed the role of human service agencies. For example, in 1972, the Department of Mental Health administered programs in local day care centers for youngsters with severe handicaps. As recently as 1975, they were operating preschool programs for over 1,000 children with handicaps. Now, these programs are administered across the Commonwealth by local public schools through educational collaboratives. Similar major changes are very probably occurring in other human services as awareness of the implementation of Section 504, including

awareness of its use in Judge Broderick's opinion about total care institutions being unconstitutional.

The changes in service demands have been dramatic; the future may bring changes at least as dramatic to the locations and arrangements for education and related services. Two areas of human services are growing at a very rapid pace. These areas are but two of an evolving human service system in the Commonwealth.

First, there is a burgeoning industry in providing community-based living recreational and vocational arrangements for children and adults with disabilities. Historically, many of these people would have remained in state institutions or private schools and would have had limited access to conventional community experiences. Second, is the immense and unmet need to provide family support services for families with a member who has a disability. This need has emerged because children with disabilities, who typically would have been settled away from the family, are increasingly being provided school and related services within their own community. The strain and demand this has placed on families who are not prepared to cope with the special needs of their children is enormous. Homemaking services are needed for some parents in order for them to minimally meet the demands of their family. Maintaining a nurturing home environment is significantly compounded when one or more of their children has special needs.

When these mandates are considered together, much public attention has been given to educational and human development services to people with disabilities. In addition to the attention to programs, preparation of staff to work in these services is also shifting. Five years ago no money was available from the Federal government to colleges and universities to train special education teachers. Over the past ten years, there has been a 200% increase in training funds with increasingly heavier emphasis on mainstreaming for children. Further, new funds have been appropriated for specific categories of children who were previously unserved. Other opportunities exist through Title XX Training/Retraining of the Social Security Act for funding preparation of human service workers to perform many of the same tasks in non-school settings that special education teachers perform, in schools.

Demands for human services for people with disabilities are expanding. Funding sources and uses of funds to prepare personnel for these services are also growing. These evolving shifts in employment opportunities to serve persons with handicapping conditions are identified in order to plan for ways that the State Colleges might be on the cutting edge of new career preparation patterns.

Review of Literature

The literature reflects patterns about the provision of special education and related services to children and adults with disabilities. These patterns

are exemplified by a few references.

Stedman[1] and colleagues issued a series of reports from the Teacher Education Review Program. Several general areas of recommendation resulting from their review summarize themes found in other studies:

1) *Increase coordination between public schools and university preparation programs.*

2) *Establish a University Council on Teacher Education as a forum for discussion among faculties responsible for preparation of personnel.*

3) *Provide university-wide planning to teacher education.*

Nash and Ducharme[2] (1976) contend that teacher education programs must enlarge their missions and diversity of training formats and delivery systems in order to produce what is called the professional human service educator. The authors maintain that no teacher, administrator or counselor should expect a lifetime of uninterrupted public school service in a specific role. Therefore, personnel preparation programs should be re-examined and rearranged to prepare educators who are able to move with horizontal effectiveness in and out of several human service roles during their career.

From a similar view, Heiny and Cunningham[3] (1972) observe that educators, including those who work with people who have handicaps, can use their skills in non-school settings. Since most people are not now and will not at any time in the future be in school, educators should look also to non-school

settings to facilitate human growth and independence. They sugge. hat field teachers can be trained to use tools-of-educators to accomplish tasks defined and expressed by individual families with a handicapped member.

Clark and Guba (1977) review basic data about education and suggest "likely near-future scenarios for schools, colleges and departments of education." They foresee:

1) *A decrement in funds available;*

2) *A decline in fiscal support for knowledge production activities;*

3) *A slight decrease in support for knowledge use activities;*

4) *Stabilization of the pre-service teacher enrollment decline, and a decline in graduate enrollment;*

5) *Program quality decline;*

6) *Dissatisfaction in performance of teacher training and knowledge production and use activity;*

7) *A loss of autonomy for teacher education programs; and*

8) *A shift from experimentation upon substance to experimentation on the form or structure of teacher education.*

They anticipate:

1) *A reduction in administrative services in order to minimize program losses while maintaining standards;*

2) *Less faculty turn-over and mobility, and more concern for position and rights as employees; and*

3) *Courting of students in ways which do not increase school expenditures such as through lower entrance and softer program requirements.*

Gillis[5] (1976) reports that the supply of special educators in Massachusetts exceeds the jobs available, although several conditions are added to that conclusion. She reported that during 1975-1976, at least 4485 Commonwealth of Massachusetts approvals and certificates were issued to teach in special education programs. A maximum of 853 openings were expected in all public school special education programs. The greatest oversupply of special educators was in the specialization of teachers for students with moderate needs (2212 approvals and certificates for an expected 109 openings) and of instructors for students with perceptual handicaps (1914 approvals and certificates for 116 openings). In addition, at least 2708 undergraduate and 1300 Masters' students were enrolled in the State preparing to be teachers of students with moderate special needs. Although the imbalance between supply and jobs is not as great in other specializations as it is for teachers of moderate needs, the same pattern exists in preparation, availability and job-openings. Recommendations from the Gillis study are especially important.

- *The current and projected balance of personnel supply and demand must be assessed separately for each specialization.*
- *Institutions of higher education should continue to reorganize training programs to provide a common initial training base leading to specialization in regular education, special education and related fields.*

A review of the literature leads to the suggestion that the most important information that can be gathered for the current study comes from people responsible for administering programs within the Commonwealth of Massachusetts rather than from the literature about special education and human services. However, the literature survey has identified a number of important training models that have relevance to this study, and has clarified that careers in at least two specializations appear promising in Massachusetts.

Design of Study

This study was conducted through analysis of information collected in interviews and through a survey questionnaire. Focused interviews were conducted with a representative of the President's Office, representative special education faculty, and students at each of the State Colleges. (See Appendix C for interview questionnaire.) In addition, a survey questionnaire was distributed to local public schools soliciting their rating of the supply of educators prepared to assume school responsibilities in each of the major specialties serving students with special needs. (See Appendix B for the Superintendents' Questionnaire.)

Interviews with State College Personnel

After sessions with various State College personnel, a number of advisory meetings that included representatives from five of the State Colleges, a one-day conference with State College personnel and school Superintendents (January 23, 1978), and some important discussions with Dr. Donald Stedman, a consultant to the project, it was determined that an interview approach would be utilized. Consequently, with the assistance of Dr. William Kvaraceus of Bridgewater State College, a personal interview approach was developed. This method of obtaining information regarding the nature and extent of training efforts at the State Colleges used focused interviews with a representative of the President's Office, representative special education faculty, and students at each of the State Colleges.

The first interview was conducted on a field-test basis at Bridgewater State College and proved satisfactory in obtaining both quantitative data and judgmental information regarding the magnitude and thrust of the present State College efforts. This interview approach examines trends within the

programs and the future directions for the college as they are viewed by persons at the State College level. Subsequent appointments and interviews were arranged at all of the State Colleges participating in the study. This occurred at approximately the same time as interviews of human service personnel in the field.

Interviews were conducted with the central office management personnel responsible for staff training and in manpower development in the:

1) *Department of Mental Health;*
2) *Department of Public Health;*
3) *Office for Children;*
4) *Department of Public Welfare;*
5) *Massachusetts Vocational Rehabilitation Agency;*
6) *Department of Corrections.*

RESULTS AND CONCLUSIONS

Results of this study are divided into those that represent views of field service personnel and those that represent State College personnel. In general, both groups acknowledged that more people are available for jobs than can be hired, and that new cooperative relationships are needed between State College and state human service programs.

Manpower Needs--Education

The situation in Massachusetts is somewhat unique in the United States and consequently, much of the effort reflected in the literature is not directly relevant to the circumstances in the Commonwealth. Specifically, as the fifth year proceeds with the implementation of mandatory education for all school-age students with special needs, the availability of traditional professional employment serving the handicapped is atypical rather than representative of the supply and demand situation in most states.

In a number of states, particularly the Southwest and Southeast, there is still a serious demand for special education teachers who serve children in traditional self-contained classrooms.

In other parts of the country, there is still a healthy demand for teachers who are trained to work in resource rooms and other consulting roles.

The market for people to work in early childhood education is quite good nationally. None of these markets appears to be very healthy in Massachusetts. However, two areas do seem to be not only hopeful in terms of future career opportunities, but actually wide open in Massachusetts. One area is for persons training to work with older students and adults in the public schools. The second is for persons trained specifically to work

with bilingual children with special needs.

Survey Questionnaire--Local Schools

A questionnaire was developed and distributed to superintendents of schools across the Commonwealth. The questionnaire, based on a survey approach used in the State of Indiana, provided a quick and easy method for superintendents of schools to indicate those areas of professional and paraprofessional effort where they considered the market to have a great or moderate undersupply, where they believed there is relative balance, and where they felt that there is a moderate or great oversupply. While the instrument is quite simple, using it results in a basic description of projected public school hirings as viewed by those responsible for local school programs and staff. (See Section II of this Final Report for details.)

Superintendents rated the supply of educators prepared to assume school responsibilities in each of the major specialties serving students with special needs. (See Appendix B for instructions and questionnaire.)

One hundred seventy-six superintendents were surveyed to determine the current supply of teachers and other school personnel in Massachusetts. These data are reflected in the table below. Comments by superintendents reflected a need for more persons skilled in working with acting out, behavior disordered, and incarcerated youth.

TABLE 1

MASSACHUSETTS SUPERINTENDENTS' SURVEY OF CAREER OPPORTUNITIES IN EDUCATION

	Great Undersupply	Moderate Undersupply	Relative Balance	Moderate Oversupply	Great Oversupply
Early Childhood Educator (Special Education)	3	22	25	49	10
Kindergarten	1	6	21	50	38
Elementary	1	1	5	17	89
Middle School	4	2	6	38	54
Junior High	3	4	10	36	49
High School	1	5	12	41	45
Adult Education	0	15	33	17	8
Bilingual Teacher					
Spanish	4	20	12	8	4
Portuguese	10	9	2	3	1
Tutor	1	18	40	25	28
Reading Specialist	2	14	48	35	10
Math Specialist	3	13	46	34	5
SECONDARY FOCUS					
English	0	3	3	30	75
Social Studies	0	1	3	10	92
Language	1	7	22	45	36
Music	1	13	43	43	14
Art	1	11	37	48	15
Math	5	19	36	39	12
Physical Education	0	4	17	44	8
Science	3	25	37	32	14
Business	1	12	38	37	12
Agriculture	0	6	11	9	3
Home Economics	2	10	49	35	7
Industrial Arts	11	37	32	21	4
Vocational	6	22	16	12	2
SUPPORT PERSONNEL					
Psychologist	5	22	61	28	6
Guidance Counselor	0	10	16	55	35
Career Counselor	3	22	32	28	12
Resource Room Teacher	4	16	45	34	7
Consulting Teacher	0	8	20	19	3
Itinerant Teacher	1	8	21	25	8
Self-Contained Special Cl.	1	13	42	39	10
Speech/Language Ther.	1	25	50	36	5
Physical Therapist	10	23	23	8	1
Occupational Therapist	15	20	22	5	2
School Nurse	0	8	31	35	20
Interpretor for the Deaf	9	14	9	1	1

VIEW FROM THE FIELD

Education

Massachusetts superintendents estimate that more professional educators are available than can be employed. However, several exceptions exist where the superintendents report that either a great or moderate undersupply of qualified teachers exists.

1) *Undersupply exists for bilingual special education teachers, especially those fluent in Spanish and Portuguese.*

2) *Undersupply exists for vocational and industrial arts teachers in secondary schools.*

3) *Undersupply also is reported to exist for physical therapists, and occupational therapists and interpreters for the deaf as school support personnel (with a smaller number reporting).*

The undersupply of these educators should be approached cautiously. Since so many certified teachers are already available for employment, training programs to prepare new educators may not be as needed as are interim retraining programs to qualify them for other specializations. Retraining could occur on campus, or through in-service training programs offered cooperatively with public schools and funded with Federal in-service training grants.

In 1972, the Department of Mental Health administered programs for the severely handicapped youngsters in day care centers, and as recently

as 1975, they were operating preschool programs for over 1,000 children with handicaps. Now these programs are being administered by public schools in collaboratives across the Commonwealth.

State Human Service Agencies

Formal estimates of the need for professionals in state human service agencies do not exist. It is common knowledge among state employees that more staff members are needed in every human service department. However, the number of state positions available at any one time is controlled to a large extent by state legislative appropriations, not by assessments of needs for services for particular clients. Appropriations for increasing numbers of staff members in state schools for the retarded came only after a Federal Court order for increases. However, that same court order did not require funds to pay for increasing numbers of staff that are needed to fill entry-level positions with community agencies under contract for the Department of Mental Health.

In similar ways, other departments have employment openings, but the kinds and occasions for employing staff vary according to funding, not just service requirements.

A reliable figure of existing and needed community service positions is being generated and should be available in another month from the Division of Mental Retardation, Department of Mental Health. Similar figures need to be generated in other state agencies.

Employment opportunities in three state human service agencies are reviewed as examples of emerging careers and of preparation that is preferred. These examples represent similar patterns in other state agencies.

Department of Mental Health

The Massachusetts Department of Mental Health has approximately 8,000 staff members at entry levels grades 1-4. Only a few at any one time are at the B.A. level. The younger, brighter ones pass through these jobs rather quickly. The turnover in these grades is estimated to be approximately 100 staff members per day. Most of this turnover is in the State Schools for the Retarded. Also, the Department employs approximately 2,500 licensed practical nurses. In the not-too distant past, there was an excess of LPNs. Now, there are only a few available for hire. There is a "high need" for physical therapists.

The staff most rapidly encouraged to work in growing areas of employment is in community services, especially prevocational, vocational, residential and sheltered home care for people with developmental disabilities. One of the major problems in establishing more programs is hiring qualified staff.

Approximately 1,500 community agency staff members are now working with the Department under contracts with private community agencies. The State Colleges have a Title XX training program that could be used as a model for establishing other training of direct service staff members. Basically, they broker training to agency staff through DMH Regional administrators.

Bridgewater State College and Taunton State Hospital have developed a model working relationship that provides exemplary in-service training and staff development programs. This effort has highlighted the need for high school equivalency screening of state staff. A large, undetermined number of staff are not eligible for state college programs leading to academic degrees because they do not have prerequisite credentials. CLEP* would be used to establish eligibility; however, employees prefer the high school equivalency exam.

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*CLEP--College Level Examination Program

Department of Corrections

Many employment openings are occurring in this Department because of the growth of new facilities and an increase in the number of persons incarcerated. Three main areas of openings exist: custodial, administrative and treatment. Most of the openings are at the entry level for correction officers. Lateral as well as vertical career movement is possible within the Department. Preference is given to hiring people who want a career versus a job.

The academic preparation of prospective employees is not as important as experience. However, three basic skills are important: interpersonal skills, human management, and writing. Background should include familiarity with the state-of-the-art in government service. Preference would be that the undergraduate background be in behavioral science, and graduate background in public management.

Training incumbent staff should be practical, offered during working hours, offered on-campus, be short (1 day to 2 weeks) and offer college credit.

Department of Public Health

Emerging employment opportunities exist in at least five (5) areas at the Department of Public Health. These opportunities are the result of changes in the structure as well as priorities for public health.

- *Preventive Health through HMO's*, especially concerning weight control, smoking prevention, and CPR.*
- *Health regulation through official inspections to identify the degree to which health related agency is in compliance.*
- *Emergency medical services, a Federal priority.*
- *Institutional Domestic Aides and Service Workers to fill entry-level positions where there is a high turnover.*
- *Family health services, an area of growing current interest.*

Preference in hiring is given to people with experience and exposure to public services through internships or volunteer service. Familiarity with the state-of-the-art of human development services and of government/political sciences is important. An academic degree is not important for many positions unless career advancement is intended within the public health system.

Training should be interagency oriented and offered at the service site during regular working hours. Public health agencies and State Colleges could cooperate on the design of training program including the content, sequence, etc.

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*HMO = Health Maintenance Organization

Three main skills needed are:

- *Writing and other communication and interpersonal skills to facilitate the exchange of information and ideas among staff members and clients. These skills are needed to translate regulations to solve "real" problems, to conduct working groups, and to complete program and fiscal responsibilities.*

- *Analytic skills to separate and review ideas, materials and activities through surveys, statistics and data processing.*

- *Synthesis skills to create and initiate new ideas and information about ways to solve existing public health problems.*

Office for Children

Two main employment foci are emerging and opening through the Massachusetts Office for Children. This agency is new. Its main functions are advocacy, monitoring and evaluating services. The agency has been involved in community dispute arbitration, teaching and administration. The two career routes are:

- *traditional, state government career ladder in an area such as planning.*

- *non-traditional route through community organization working with citizen-based groups such as Massachusetts Fair Share, or through electoral politics as a candidate or staff person.*

Skills necessary in an agency like Office for Children are:

- *Analytic skills to take unrelated events and legislation and see their implications for human services.*

- *Community development skills to organize people into small and large groups.*
- *Facilitating groups to move a group to common objectives.*

In addition, candidates for employment should understand how state government operates, how legislation gets passed, how to lobby, and how to understand the difference between human services and the politics involved in human services.

Academic training would be helpful if appropriate training sequences could be made available with practicums. If a degree is offered, one in Human Services or in urban planning would appear to be most closely related. Training should be offered in consultation with agencies. People who offer the training should be currently familiar with the practical field. Theory should be reconciled with the realities of the specific needs of an agency. Training should be directive, structured and competency based.

Human Service Agencies

From responses about preparation for employment that occurred repeatedly during interviews with state training officers and with local agency providers, the following four generalizations are drawn.

1) Colleges and agencies should jointly plan training programs, including basics like content, location, scheduling and funding.

2) Practical training should be emphasized, using theory only to expand the implications of practices.

3) Traditional, liberal arts educated people are preferred over specialists who use their skills in only limited ways.

4) Basic writing, analysis, synthesis, and people management skills are important for any prospective employee considering career advancement.

The employment opportunities are increasing for generalists who can talk with each other and with specialists and who can use basic skills and information in real-agency settings to solve existing service delivery problems.

State Colleges

Interest and capacity exist in State Colleges to train special educators as well as to prepare people for other human service agencies. The students are bright, enthusiastic and interested in gaining ever more practical experience with children and adults who have special needs. Some of the students are exceptionally insightful. Faculty are open to suggestions of additional ways to contribute to services for people with special needs. There is a growing excitement about the potential of State Colleges taking a leading role in working more closely with service agencies.

Student Views

Students are looking forward with anticipation to their future work as special educators. Although they are vaguely aware that the job market is tight, they are proceeding with their preparation as though at least one position will open for each of them.

During the presentation, they routinely, informally critique their classes, faculty and State College they attend. These critiques provide insights into possible internal adjustments in special education programs. Some of the critiques were shared with the interviewer.

Students express a strong wish for much more practical knowledge of public school practice and more opportunity to truly study children and the realistic situations of school problems, rather than hearing about children and the classroom generally or, at best, limited situations of practical experience. They are concerned that coursework may not be related to the rest of their preparation as a special educator in a "tight" job market.

Another repeated comment is that students want more public school practicum experiences with excellent or master teachers. Students appear to be asking for a greater emphasis in learning to use teaching techniques rather than the current program emphasis on learning about such techniques.

In general, the students are responsive to the opportunity to be a special education teacher as they perceive the role. Further probes should be made to determine how clearly they understand the job market, and the extent to which their perceptions of an emphasis on theory contribute or restrict development of available, sophisticated technical skills for increased learning in students with special needs.

Faculty Views

Special education faculty are aware that the employment field for public school teachers is declining. They are not satisfied with their current programs and they are open to considering new opportunities for contributing their knowledge about human development.

One repeated observation that special education faculty make is that regular education faculty are not responsive to the special training that all teachers need. A repeated comment heard from regular education teachers is that special educators are not sensitive to the demands that mainstreaming imposes on other educators. Interestingly, both of these comments

are made about faculty in other colleges, not about colleagues in their own school.

A second repeated observation is that faculty are not overly current with the rapidly expanding technology and changing emphasis in delivery of human services. While special education faculty as professionals may espouse principles of normalization and mainstreaming, their courses are basically the traditional didactic review of personal traits which characterize "exceptional children," and of ways to change-the-student-to-make-hime-more-normal. Faculty seem aware and uncomfortable with the incongruity between their professional beliefs and their actions. They appear open to developing ways to reduce the incongruity.

The third major observation is that faculty want to get to the front-end of the human service and education movement. They are exploring ways to work with parents of young, preschool children and other non-school based contributions by educators. They are shifting the emphasis in personnel training to concentrations on students with severe and profound special needs. They are aware of changing service patterns that are moving students from residential schools to local schools and community residences.

In general, special education faculty in State Colleges are making tremendous efforts to update their skills and contribute to their

changing field. Further probes should be made to determine ways that their efforts to "teach the front" can be supported even more than they are now. Also, probes should be made to clarify additional ways to support further colleagual efforts of special educators, regular educators and various disciplines that support educators. These probes might stress ways to reduce unnecessary overlap of effort and to encourage broader interdisciplinary efforts.

CONCLUSIONS

The employment of entry level special educators is very limited in Massachusetts. This limitation is expected to continue for at least the next few years.

However, the employment market in the generic human service field is opening very rapidly. This increase in employment opportunities is also expected to continue for at least the next few years.

Education

Special educators are still needed with specialized experience in vocational and technical education and secondary education. Professionals that contribute related services like physical and occupational therapy are also needed, as are interpreters for the deaf.

Even though numbers of available special educators are greater than available positions, caution should be exercised before assuming that training of special educators is not needed. Now, State Colleges have an opportunity to contribute to increased quality of education for school-age students with disabilities.

The quality of public school special education programs is underdeveloped. It will not be improved by attrition of current public school faculty. State Colleges could contribute research and development efforts to increasing the quality of public schools' special education programs.

Human Services

Human service agencies need experienced and educated new staff to provide community and other support programs for people with disabilities. Many of the skills special education teachers learn are needed in generic human services.

Human service agencies are open to cooperative planning of personnel training programs with State Colleges. Human service agencies are seeking large numbers of staff to fill entry-level positions. They are also seeking additional staff with basic liberal arts information and skills (as contrasted with highly specialized technicians) to establish careers in public service. State Colleges could contribute faculty and other resources to developing a cadre of educated, experienced new staff members

who are being trained before and during their employment in a human service agency.

In short, while one employment market is closing, another i expanding. Administrators in the new market welcome the possibility that State Colleges might provide a cooperatively-designed training program for new and incumbent staff. The time appears right for exploring ways to adjust State College resources to address needs in the new market. The Executive Summary makes recommendations for next steps under diversification.

Implications for Diversification

The recommendations to the Chancellor and to the State College Board have two primary thrusts.

First, new career opportunities are emerging to replace the fading opportunities in special education. These new opportunities can be made available to State College students through specific modification of existing programs. Modifications could be expansion or reduction according to the current and projected job markets and new entry-level careers.

Second, training needs exist for people already working in the field. There is an enormous need for on-going training and support for people working in public schools and human service environments (e.g., Title XX programs.)

The state-of-the-art has changed dramatically in serving handicapped persons in the last decade. There is no indication that the rate of change is likely to be reduced. In fact, the new problems and solutions that are evolving as handicapped persons are increasingly served in less restrictive environments are changing the technology at a faster rate than has been experienced at any other time in history of special education. A number of areas are available for training undergraduates and graduates. In our judgment, it will be helpful to planners and administrators in the State College system to consider expanding programs in these areas.

Insightful reflection from people working in the field, as to how training could more adequately prepare students to work effectively in the real world of serving handicapped persons is a primary requisite for planning diversified programs. Recommendations should focus particularly on the manner in which practicum activities are administered and supervised, and the relationship of these activities to formal course work and employment. Several other areas of special concern can be highlighted as innovative efforts are pursued by the State Colleges. These are as follows:

1. A need to provide focus and clarity for any innovative, individually designed majors that might be proposed.

2. The tendency to organize courses and practicum experiences around vague or "fuzzy" interdisciplinary principles should be avoided.

3. As new majors are created, the result may be to "play down professional certification without anything to replace it, which only increases student anxieties that they may not be truly marketable."[6]

These pitfalls can be avoided by carefully thought through alternatives and the addition of diversified programs developed through the expertise of college faculty based upon well-established criteria.

REFERENCES

[1] Stedman, Donald; Smith, Roxie; and Williams, Clegg. "The Education and Training of Teachers and Other Educational Personnel. Report #2." Chapel Hill, North Carolina. The University of North Carolina. 1977.

[2] Nash, Robert J. and Ducharme, Edward. "A Future Perspective on Preparing Educators for the Human Service Society. How to Restore a Sense of Social Purpose to Teacher Education." Teachers College Record. May, 1976.

[3] Heiny, Robert. Review of Literature in Human Services. Waltham, Massachusetts: Brandeis University, 1972.

[4] Clark, David and Guba, Egan. "Likely Near-Future Scenarios for Schools, Colleges, and Departments of Education." Bloomington, Indiana: Indiana University, 1977. ERIC ED 139 805

[5] Gillis, Cynthia. "Special Education Manpower in Massachusetts: State Report and Recommendations." Boston, Mass.: Department of Special Education. July, 1976.

[6] Journal of Teacher Education, Vol.XX19, No. 4, July-August, 1978, page 39.

BIBLIOGRAPHY

Brown, Tom, et. al. "Interagency Cooperation in the Delivery of Services to Severely and Profoundly Handicapped People." In Education of Severely and Profoundly Handicapped Children and Youth. Hightstown, New Jersey: Northeast Regional Resource Center, 1977.

Denver University, Colorado. "State of the Art in Defining Social Services." Center for Social Research and Development, 1976. (Available from National Technical Information Service, SHR #659.)

Department of Health, Education and Welfare. "Toward Integrated Human Services." Washington, D.C.: Services Integration and Capacity Building. 1974.

Joint Committee on Human Services and Chapter 766 for the Governor's Task Force on Chapter 766 and the Task Force on the Administrative Reorganization of Children's Services. "Report on Human Services/ Education Coordination." April, 1976.

Meals, Donald. "Organizing for Improving Delivery of Educational Services in Massachusetts. Volume 1." "A Process Approach to the Development of Regional Educational Delivery Systems." Merrimack Education Center; Arthur D. Little, Inc. March, 1974.

Oregon University. "Educational Model for Social Services Administration and Management." Summary Progress Report. Eugene, Oregon: School of Community Service and Public Affairs. Social and Rehabilitation Services, 1975.

Regional Planning Council. "The Coalition Approach to Improved Services for Handicapped Children in the Baltimore Region." Models of Delivery Systems. Final Report. Baltimore, Maryland. April, 1976.

Twiname, John. Using Title XX to Serve Children and Youth." New York: Child Welfare League of America. 1975. ERIC ED 112 276

University of Colorado. "Youth Development Program." A Strategy for Youth Development. A report of ideas developed and implemented under the direction and sponsorship of the Office of Youth Development. 1975.

University of Massachusetss. "The Children's Puzzle: A Study of Services to Children in Massachusetts." Amherst, Massachusetts: Institute for Governmental Services. 1977.

Section V

CAREER OPPORTUNITIES IN SPECIAL EDUCATION AND HUMAN SERVICES

Implementing Recommendations at Three State Colleges

SECTION V

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Implementing recommendations at three state colleges

SECTION V
CAREER OPPORTUNITIES IN SPECIAL EDUCATION AND HUMAN SERVICES

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OVERVIEW

The recommendation for the State Colleges to establish specialties at three of the Colleges is developed in this section. The intent of these recommendations is to elevate the emphasis of planning, evaluation, and staff development and directly apply the resources of the Massachusetts State College System to the problems of local school districts through inservice application.

Inservice Application

Specific training in procedures for implementing program change to achieve compliance with P.L. 94-142 would include:

a) *Program evaluation procedures*
b) *Model search procedures*
c) *Program plan and design procedures*
d) *Staff training procedures*
e) *Pilot program implementation and evaluation procedures*
f) *Program operationalization procedures*

A training curriculum and a capacity for future cooperative efforts between Institutions of Higher Education, the Massachusetts Department of Education, educational collaboratives, and local school districts in training personnel to implement change would result.

Program focus should be placed upon:

a) *Programs for the severely and profoundly handicapped*
b) *Physical education for handicapped children (adaptive physical education)*
c) *Designing and implementing IEPs for mainstreaming*
d) *Offering services for adolescents with handicaps*

PROBLEM--Need for Inservice and Preservice Education

Local school districts throughout Massachusetts and the Nation are today faced with the challenge of State and Federal legislative mandates--most recently P.L. 94-142 and Section 504 of the Vocational Rehabilitation Act--and court orders to serve children. With limited resources available to meet these mandates, local school districts are increasingly resorting to highly visible, short-term solutions that often address only the letter of the law (P.L. 94-142) rather than the spirit underlying the statute. This behavior is part of an historic pattern on the part of local school districts wherein they have delayed and reacted to State and Federal mandates and court orders and consequently they have reduced the level of local school district planning, evaluation, and staff development efforts to a point where it is almost nonexistent. However, it is clear that proactive planning and staff development efforts at the local level must be drastically increased if the rights granted to handicapped children by P.L. 94-142 and Section 504 are to be secured.

In Massachusetts, the historical reluctance of local school districts to engage in significant proactive planning and staff development activities can be attributed to two factors. First, the general public and many school committees have not understood or appreciated the importance of such activities to the provision of quality programs to children (and thus have not allocated funds for this purpose). Second, there has been a strict division of labor with regard to staff development (preservice training being the responsibility of State Colleges

and universities, and inservice training that of local school districts) while neither preservice nor inservice training has been formally aligned, in a systemic way, with the ongoing structure for serving children in the public schools.

In a period of declining public school enrollments, Massachusetts State Colleges are no longer being asked to simply supply qualified teachers to the State's school systems. There are today over 6,000 unemployed teachers in Massachusetts. Classes in the primary grades are significantly smaller and this trend has served to reduce the frequency with which teachers change jobs--in some districts, upwards of 85 percent of the teachers are tenured. Under these circumstances the Massachusetts Department of Education, through the monitoring activities of its Division of Special Education, continues to uncover deficiencies in local school district programs for special needs children, particularly in planning, evaluation, and staff development.

Furthermore, in those districts where efforts have been made in staff development, the traditional models of need assessment that have been employed have not demonstrated themselves to be effective in catalyzing system change.

Typically, the needs assessment model satisfies the needs of some teachers for additional skills. (See Insert) However, there is little

1. *Needs Assessment Instrument Designed*
2. *Voluntary Participation by Teacher*
3. *Results Tabulated and Training Priorities Derived*
4. *Courses and Workshops Offered*
5. *Voluntary Teacher Participati*

relationship between the acquisition of new skills and the support system necessary to assure that these skills can be properly utilized in serving children. Typically, there is a mismatch between the program model and the skill inventory of the teacher. (See Figure 1).

In far too few instances, the program audit teams that conducted site reviews of local school systems in Massachusetts found a match between an explicit program model, teacher skills, and the support necessary for successful program implementation.

In some instances, competent teachers were working without the understanding or support of other program and administration personnel necessary for meeting the objectives that had been established for the children.

In other instances, teachers were unsuccessfully seeking inservice assistance to acquire necessary skills for well-supported programs that were not succeeding because of the absence in their own repertoire of certain important competencies. However, the overall requests for training in these skills had been very low during the annual needs assessment and consequently no inservice program was available.

The traditional needs assessment approach has not addressed the problem of this mismatch nor does it provide a basis for training to be part of a systematic process for improving the programs offered to handicapped children.

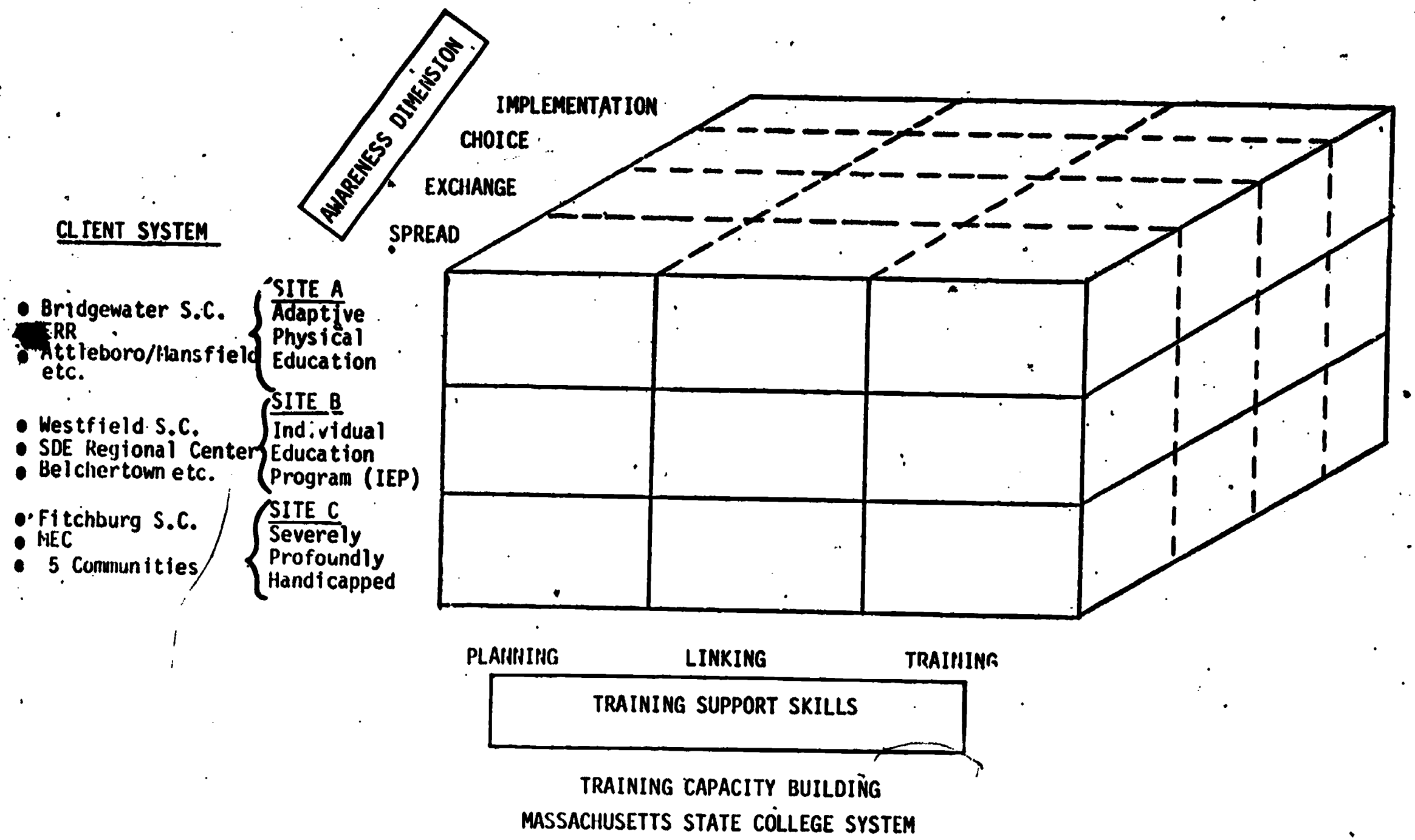


FIGURE 1

CENTRAL DISSEMINATION

This proposed model would provide a new approach to system change that elevates the emphasis of planning, evaluation, and staff development and directly applies the resources of the State College System to the problems of local school districts.

The uniqueness of this approach is the membership of the team and the focus of the evaluation and planning. This team is made up of members from every level of decision making necessary for successful implementation of the program. Composition of the team is determined by the program under consideration. It may include children (when appropriate) parents, teachers, teacher aides, professionals and para-professionals from related disciplines, principals, inservice coordinators, directors of special education, superintendents, school board members, college faculty, graduate and undergraduate students, and others.

The focus of the team's initial effort is different from the traditional needs assessment in that they are trained to review the program rather than the teacher. The program audit conducted by the Massachusetts Department of Education (Division of Special Education) provides the catalyst for the proposed process. (A school district does not have to wait for a program audit but rather can conduct a self-audit to initiate this process.) Upon the identification of an inadequate program, the process begins by the determination of appropriate team membership for the program under consideration. The most important criterion for membership is the level of understanding and support (decision making) from the school and community that is

necessary for successful implementation. For example, if the elementary level physical education program is being reviewed in a community because it was found inadequate by the program audit team, membership might include a parent, physical education teachers and coaches, principals, the inservice coordinator, the physical education department head, collaborative staff, special education teachers, psychologists, State College physical education faculty and students.

Under the supervision and direction of a project coordinator, the team reviews the program audit report to determine identified legal and qualitative inadequacies. These inadequacies are noted and the team, with particular assistance from state college physical education faculty, is assisted in designing standards and criteria for a new or modified physical education program. Using these standards as descriptors, the State College conducts a national search for validated program models that satisfy the descriptive standards generated by the team under the supervision of a project coordinator.

The team reviews the identified models and selects one for modification and/or implementation. The selection process includes the application of a needs assessment technology by the teachers who will be implementing the program. In other words, each teacher, and other support staff personnel, is assisted in reviewing the skills necessary for implementing the model program in terms of his own skill repertoire. Further, a review is conducted to assure that appropriate materials, facilities, support services, and even school building policies are in harmony with the model program.

Based on the modified needs assessment data, a time line implementation plan is prepared by the team that includes a field-based staff development program for all concerned parties.

The process is concluded when the staff has been trained and evaluated and the new program model has been implemented. Four characteristics of this process are worthy of review:

1. *Team membership is broad enough to incorporate all decision makers who are important to the program*

2. *The program is evaluated by the team*

3. *Needs assessment of staff is based on a specific program*

4. *All personnel participating in the program are trained*

This proposed model would implement new ways to use training in support of Public Law 94-142. Three program areas are suggested based on the results of evaluations of school districts conducted by the Massachusetts Department of Education and represent personnel preparation priorities identified by the Bureau for the Education of the Handicapped:

- *Physical education for handicapped children*
- *Programs for severely and profoundly handicapped children*
- *Individual Education Programs (IEPs) for mainstreamed children, especially for adolescents*

ACTIVITIES TO ACCOMPLISH THESE RECOMMENDATIONS

The suggested activities are as follows:

1. To establish three teams (86 trainers) that can function as change agents/trainers representing a cross-section of local school administration, teachers, specialists, parents, college faculty, graduate, and undergraduate students.

These trainers can be used in subsequent years to assist other districts in implementing comparable procedures for modifying programs. This cadre of change agents will represent a powerful force for change when used in conjunction with the program audit procedures of the Massachusetts Department of Education.

2. To develop and publish a curriculum manual for training physical educators to implement specific programs for handicapped children.

3. To develop and publish a curriculum manual for training regular class teachers to work with the implement components of individual education plans.

4. To develop and publish a curriculum manual for training special educators to implement certain programs for severely and profoundly handicapped children.

These manuals will be made available to school districts as part of the training offered by the teams trained during the project. Furthermore, they will be distributed to all school districts through the collaboratives and the State Colleges.

5. To train at least forty-five direct service teachers.

These teachers will be implementing the model programs and will serve as trainers at the model demonstration sites.

6. To stimulate desirable modifications to State College curricula for undergraduate and graduate students in physical education, regular elementary and secondary education, and special education.

This most important objective assures more efficient feedback system for those planning and implementing curricular and practica offerings within the state college system. This strengthening of pre-service curricula should reduce the present discrepancy between graduate competencies and program needs.

7. To establish consortia models for collaboration among state institutions of higher education, local school districts, local cooperatives, and the State Department of Education.

While the new cooperative efforts have already resulted in improved programs, this project will represent a milestone in the relationship between organizations which must succeed together if handicapped children are to be well served.

OUTCOMES

A number of outcomes of the project will be derived:

1. Parents will be trained to participate as informed team members in evaluating local school district capabilities, and will make recommendations to the school committee with regard to modifications in change processes, service delivery capacity, and school

building policy. Parental involvement is paramount in assisting both the local school district and the supporting state college in delivering the best services to handicapped children within the school district.

2. LEA: Administrators/Planners and Teachers and Trainers

The local education agency will be afforded the opportunity to have its staff trained to participate in an assessment of LEA program procedures and service delivery capacity, and to consequently receive training that will upgrade its direct service programs. The State College will assist the local education agency by conducting a national search for model and validated programs as a first step in redesigning local programs, training practitioners, and updating performance responsibilities to meet both current and future needs. Thus, the local education agency will receive a technical assistance action plan that incorporates the State College for curriculum support; the educational collaborative for dissemination, validation and replication; and most important, a tangible basis for decision-making with regard to the allocation of resources and associated budgeting actions.

3. Massachusetts State College System

As a system, the Massachusetts State Colleges will have an opportunity to provide successful and efficient field-based technical assistance directly to practitioners within the local school district. This will not only allow a more congruent leadership capacity among the State Colleges, but will also enhance the redesign of program offerings, inservice training, curriculum, and research and evaluation methods, in the most cost-effective manner. The Massachusetts State College System will also improve its employment capabilities through

temporary appointments of adjunct staff assigned to the local school district as field-based trainers. Finally, the Massachusetts State College System will be able to sustain this model, without duplicative efforts.

4. Collaboratives

The primary outcome for educational collaboratives will be an improved and updated dissemination capability. The collaborative structures will assist local school districts by providing not only a national search of program models and information pertinent to systems evaluation, but also a redesign and delivery of practitioner training.

5. Massachusetts State Department of Education

This project will have major implications for the Massachusetts Department of Education, Bureau of Program Development and Evaluation, which includes Program Audit and the Massachusetts State Manpower Planning Group.

First, the project will set into motion a process for capitalizing upon local school district and manpower need identified through previously conducted program audits. The program audits have established priority areas for training efforts that are consistent with those identified by the Federal government (e.g., severely and profoundly handicapped, adapted physical education, individualized educational plans, vocational and career education, etc.) Second, the process establishes a technical assistance response system that delivers cost-effective training at the school building level utilizing State College personnel and successful local practitioners.

METHODOLOGY AND PROCEDURES

Three consortia models would address the three topical areas identified through the Massachusetts Department of Education's monitoring activities and the Bureau of Education for the Handicapped personnel preparation priorities (i.e., special education programs for severely and profoundly handicapped children, IEPs for mainstreamed children-regular class teachers, and physical education for handicapped children-physical educators.) The topical areas for subsequent years will be determined by both Massachusetts State Department of Education program audits and priorities identified by Bureau of Education for the Handicapped (BEH). Three new topical areas are then chosen for the continuation years for a total of nine topical areas.

MODEL A	State College (Fitchburg State College) Educational Collaborative (Merrimack Education Center)
Topic:	Programs for Severely and Profoundly Handicapped Children
Trainees:	Faculty and students from Fitchburg State College and special educators from Merrimack Education Center. A prototype is already in place.
MODEL B	State College (Westfield State College) SEA (Springfield Regional Education Center) LEA (Town of Belchertown,etc.)
Topic:	IEPs for Mainstreamed Children
Trainees:	Faculty and students from Westfield State College. Regular class teachers from Belchertown, parents, principals, special education directors, inservice coordinators.
MODEL C	State College (Bridgewater State College) Educational Collaborative (Project ERR) LEA (Towns of Attleboro/Mansfield, etc.)
Topic:	Physical Education for Handicapped Children
Trainees:	Faculty and students from Bridgewater State College, Collaborative Staff, LEA Staff, physical educators and coaches, principals, parents, special education directors, and inservice coordinators.

An inservice coordinator will be assigned to each site for full-time supervision of training. The inservice coordinator in consultation with the State College President, School Superintendent, and Collaborative Director will select the members for each team of trainees. The selection process will assure that all direct service practitioners as well as key decision makers are assigned to the trainee team.

After two orientation sessions in June, each team will be presented with the program audit results by the inservice coordinator and the special education director. The program audit results will be explained so that the trainees will be able to distinguish between issues of legal compliance and those of program quality. Using the program audit results as a foundation and under the supervision of the inservice coordinator, the trainees will generate a set of standards (description) from which the State College can conduct a national search for program models. This search will be conducted during early summer so that the trainees can meet regularly (weekly) over the course of the summer to review models and ultimately select and/or modify a model for implementation. Upon selecting a final model and receiving school committee support, the trainees will use August and early September to develop a time-framed implementation plan. This process will provide the trainees opportunities to work individually as well as in a group. Each trainee will be knowledgeable regarding all aspects of the plan and primary authors of certain components of the plan. For example, the State College faculty and inservice coordinator will author the training section of the plan. The plan will have the following components:

a) Model Description

b) Description of materials and facilities to be acquired or modified

- Steps and time lines

c) Job descriptions prepared for all direct and inservice practitioners

d) Modified needs assessment of all direct and indirect service practitioners based on job description.

e) Inservice plan developed

- Steps and time lines

f) Pilot implementation

g) Evaluation

h) Program operational with an annual evaluation and planning cycle

Upon completion of the plan, the training program for direct service practitioners will be designed by the inservice coordinator and State College faculty. Implementation of training will begin in September. This training will be essentially field based as the teachers, trainees, faculty and trainers implement the program model together. A list of specific competencies will be determined for each direct and indirect service provider. They will receive individual, group and practicum instructions. Each trainee will be determined to have achieved mastery only by recorded demonstration.

Following the field-based training phase, the trainees will be supervised for four months of practicum during which time the program will be refined and consequent training can be provided.

This process will be monitored by the entire team and resource consultant. The group will meet periodically (at least monthly) to review progress and as necessary modify the plan.

In April, a four-part evaluation will be conducted by the training team and a representative of the State Department of Education Program Audit Bureau. Based on the evaluation, the program will be modified and operationalized with a built-in annual evaluation and planning cycle.

Each team will produce a curriculum guide (manual) that reflects the program in operation, the conditions under which it is implemented and the evaluation data.

COORDINATION

The State College System implements, as part of the State network, a support training system for the development of individualized educational programs (IEPs) for every handicapped child.

The network of collaboratives, LEAs, and Regional Education Centers, will be coordinated by a project team from the Massachusetts Board of State Colleges. This series of three consortia will offer training to strengthen local capabilities to plan and implement IEPs for students.

Although services vary depending upon the needs of the LEA and expertise of the specific colleges, the design is built around successful implementation of P.L. 94-142 and the IEP components. The service strategy will engage LEAs and the SEA in efforts to build state and local capacities in partnership with the colleges.

The organizational structure will concentrate on three specific levels of the State educational system.

- *Teaching-learning systems*
- *Management and leadership*
- *Policy-making systems*

The project coordinated by the Board of State Colleges will manage the development, validation, and delivery of training support services in the three specific collaborating areas.

DISSEMINATION OF THE MODELS

The publications of this State College project play an important role in motivating and facilitating rational decisions for program improvement in the districts. All exemplary programs and guides to the models will be published and publicized to encourage program replication. Inservice Coordinators may be needed to provide technical assistance on development of reference tools used for training programs.

Joint planning of the State Department of Education, Regional Education Centers, local schools, collaboratives, and Teacher Education Institutions can conduct these special studies into new approaches to training and service programs. And, once the models are fully explored, the dissemination component of the network shares them state-wide. The program proposed is designed to develop those components that can be absorbed by the State Colleges and disseminated state-wide.

Each program will be used in subsequent years as a demonstration and training site. The trainers will be available to provide consultation and training for other districts in both the process and the program through the education collaborative and the State College System. Each site will have incorporated through this model the most important aspects of planning, linking, and training into one process.

By publication and distribution of the manuals through the collaboratives and State College System other districts will become aware of this process. The spread of information and exchange of ideas which results can lead to comparable choices for program improvement by other districts. This training has implementation implications for every school district in Massachusetts.

EVALUATION

A four-part evaluation will be conducted according to the following formative and summative design. All instruments will be developed and

published.

- *Implementation Evaluation: The data for this portion of the evaluation is provided by a review of records, time lines, etc. It essentially assesses how effectively the training was planned and executed. Trainees and other concerned parties will be asked to respond to such questions as "Was the planning useful?", "Were time lines met?", etc.*

- *Process Evaluation: This concerns format, staffing, materials, etc. Opinion questionnaires will be administered to trainees and other concerned parties. Questions will include "Was there enough time to cover the material?", "Were materials useful?", etc.*

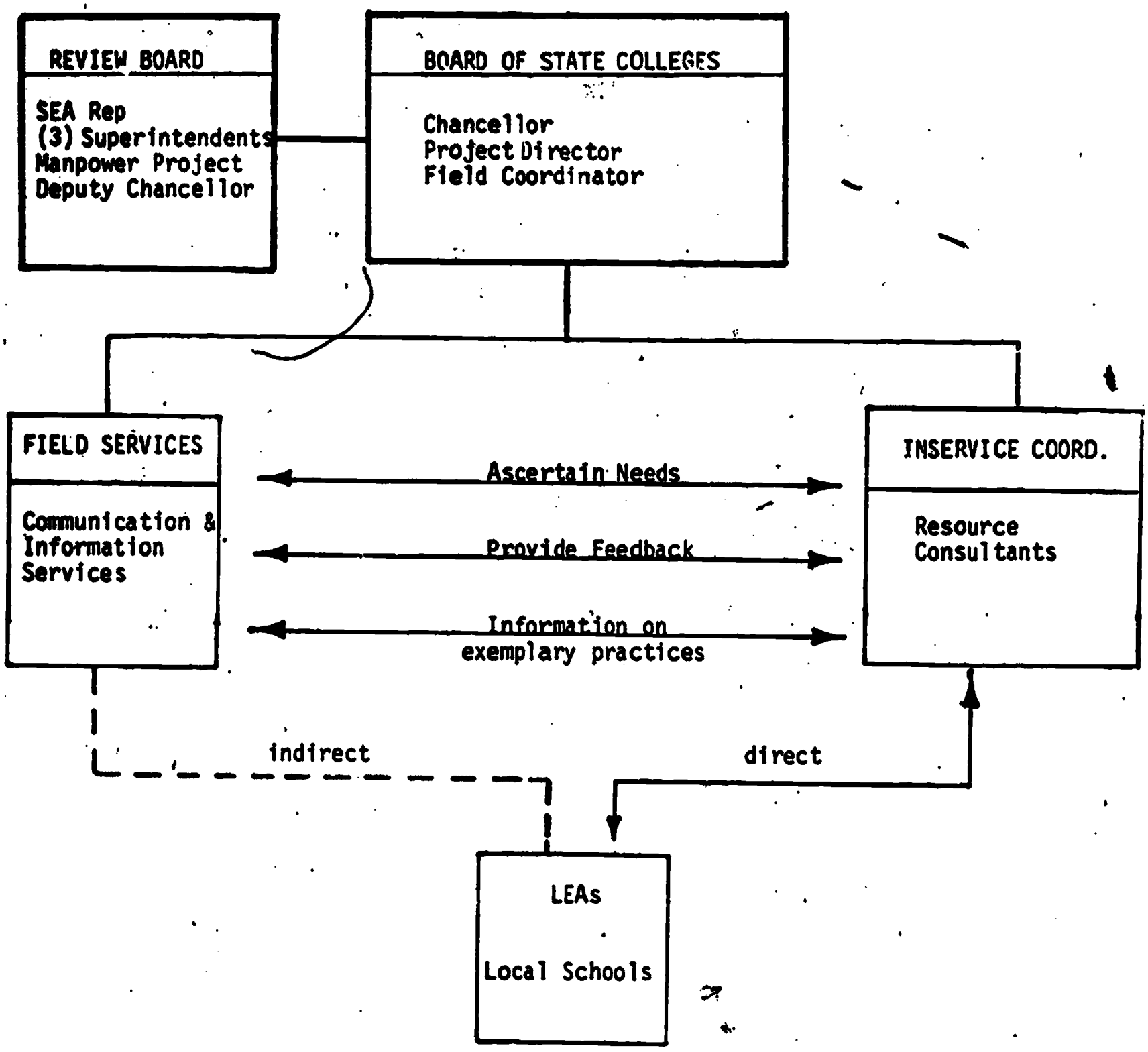
- *Content Evaluation: This evaluation will examine the content of the training. Included in this evaluation will be the test data from trainees. Other questions of trainees will include "Did the content respond to the need?", "Was the subject adequately covered?", etc.*

The summative evaluation will be conducted at the completion of the first year's training efforts according to three topical areas: (1) severely and profoundly handicapped, (2) adapted physical education, and (3) individualized educational plans.

The summative evaluation will closely examine the precisely stated behavioral objective/competencies for each topical area. This list of objectives/competencies represents the set of priorities provided by the practitioners. Therefore, this design will maximize the development and use of self-appraisal instruments as well as pretest-posttest measures in accordance with the specified set of behavioral objectives. The summative evaluation will employ the following:

- *Outcome Evaluation: This is the summative part of the evaluation. "Were the project objectives met?". "Have trainees successfully completed the program?". "Were the manuals produced?", etc. This evaluation approach should provide a thorough review of project efforts and effectiveness, and provide a basis for future planning and implementation.*

ORGANIZATION CHART


REVIEW BOARD
SEA Rep
(3) Superintendents
Manpower Project
Deputy Chancellor
BOARD OF STATE COLLEGES
Chancellor
Project Director
Field Coordinator
FIELD SERVICES
Communication &
Information
Services
Ascertain Needs
Provide Feedback
Information on
exemplary practices
INSERVICE COORD.
Resource
Consultants
indirect
direct
LEAs
Local Schools

APPENDIX A

OCCUPATION AND CAREER INTEREST SURVEY
Fitchburg State College

OCCUPATION AND CAREER INTEREST SURVEY

The Occupation and Career Interest Survey is part of the Fitchburg State College Manpower Study. The brief survey will provide information whereby we can better identify relationships between the occupations desired by college graduates and the types of degrees they receive.

Please complete the following questionnaire by marking your responses on the questionnaire and return it, in person, to the Academic Dean's office when you pick up your graduation tickets. If you do not expect to complete the requirements for a bachelor's degree during the spring or summer of 1978 please return the questionnaire unmarked.

The individual responses to this questionnaire will be confidential. Do not sign the questionnaire.

PLEASE MARK MOST APPROPRIATE RESPONSE ON THIS QUESTIONNAIRE AND RETURN TO ACADEMIC DEAN'S OFFICE WHEN YOU PICK UP GRADUATION TICKETS.

---

1. What is your sex?
   (a) Male
   (b) Female

2. How old will you be on July 1 of this year?
   (a) 17 or younger
   (b) 18 or 19
   (c) 20 or 21
   (d) 22 or 23
   (e) 24 to 29
   (f) 30 or older

3. What is your current marital status?
   (a) not married
   (b) married

4. Where did you live when you last attended high school?
   (a) Within Massachusetts
   (b) Outside Massachusetts but within the United States or its possesions
   (c) in a foreign country

5. Since completing your high school studies, have you ever interrupted your formal education for an extended period of time (semester, quarter, term or longer) other than a semester break?
   (a) yes
   (b) no

---

6. What is your approximate overall average grade in college?
   (a) 3.5 to 4.0
   (b) 3.0 to 3.5
   (c) 2.5 to 3.0
   (d) 2.0 to 2.5
   (e) below 2.0

7. What is your approximate average grade in your major field of study?
   (a) 3.5 to 4.0
   (b) 3.0 to 3.5
   (c) 2.5 to 3.0
   (d) 2.0 to 2.5
   (e) below 2.0

Use List A, "Degree Programs and Major Fields of Study" (Blue sheet attached) to answer the following three questions. Please enter the appropriate code numbers next to the corresponding question on the answer sheet.

8. What was your earliest declared degree program or major field of study?

9. What is your current degree program or major field of study?

10. If you plan to attain a higher degree, what will be your future field of study?

How important has each of the following been to you in the selection of your present degree program or major field of study? Please fill in one space for each potential influence.

N = Not important
S = Somewhat important
V = Very important

11. (N) (S) (V) The status or prestige of my major field.

12. (N) (S) (V) The influence of parents, relatives, or friends.

13. (N) (S) (V) The relationship between my major field of study and my talents and aptitudes.

14. (N) (S) (V) The relationship between my major field of study and my interests.

15. (N) (S) (V) The relationship between my major field of study and my career choice.

---

16. What is the highest level of education you expect to complete?
    (a) Bachelor's degree
    (b) First-professional degree (D.D.S. or D.M.D., L.L.B. or J.D., M.D., B.D., D.V.M., D.S.C. or D.P.S.)
    (c) Master's degree
    (d) Specialist's degree (Ed.S. etc., NOT a first-professional degree).
    (e) Doctor's degree (Ph.D., Ed.D., etc., NOT a first-professional degree).

Use the following choices to answer questions 17 and 18.
(a) Less than high school graduation
(b) Received a high school diploma or G.E.D.
(c) Received an associate degree or equivalent
(d) Received a bachelor's degree
(e) Received a first-professional degree
(f) Received a master's degree
(g) Received a Specialists degree
(h) Received a doctor's degree

17. What is the highest educational level completed by your father?

18. What is the highest educational level completed by your mother?

Use List B, "Occupational/Career Categories" (Yellow sheet attached) to answer each of the following five questions. Please enter the appropriate code numbers next to the corresponding question on the answer sheet.

19. What is (was) your father's primary occupation?

20. What is (was) your mother's primary occupation?

21. What is your long-term career choice?

22. In which occupation do you expect to be working next fall?

23. In which occupation do you expect to be working five years from now?

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24. To what extent do you expect your long-term career to be related to your undergraduate major field of study?
    (a) Highly Related
    (b) Somewhat Related
    (c) Unrelated

25. When did you make your present choice of career?
    (a) I am presently undecided
    (b) During my 4th or senior year in college
    (c) During my 3rd or junior year in college
    (d) During my 2nd or sophomore year in college
    (e) During my 1st or freshman year in college
    (f) During or before high school

26. Have you changed your career choice since entering college?
    (a) yes
    (b) no (if no, go to question 28).

27. If you have changed your career choice since entering college, why did you do so? Mark ONLY the one most important reason for your most recent change.
    (a) The previous choice seems to have few job openings
    (b) Present choice offers a better financial future
    (c) Present choice makes better use of my education
    (d) Present choice better suits my talents and aptitudes
    (e) Present choice better suits my interests
    (f) Previous choice was only tentative until I decided my actual field of interest
    (g) Training for my previous choice would cost too much.
    (h) Lost interest in my previous choice
    (i) Other

How important has each of the following been to you in your choice of a long-term career? Darken one space for each factor.

N = Not important
S = Somewhat important
V = Very important

28. (N) (S) (V) High income

29. (N) (S) (V) Independence (Extent to which you can work along)

30. (N) (S) (V) Being of service to others

31. (N) (S) (V) Security

32. (N) (S) (V) Opportunity for leadership

33. (N) (S) (V) Interest in work activities

34. (N) (S) (V) Allows more free time than other fields

35. (N) (S) (V) Makes use of my special talents and abilities

36. (N) (S) (V) Interest in working with people rather than with things

37. (N) (S) (V) Education needed for entrance to the career takes less time than for entrance to other careers

38. (N) (S) (V) Interest in travel

39. (N) (S) (V) Status, prestige

40. (N) (S) (V) Opportunity to get ahead rapidly

41. (N) (S) (V) Desire to make a contribution to knowledge

42. (N) (S) (V) Initial job opportunities

How influential has each of the following sources of information or guidance been to you in making your long-term career choice? Please fill in one space for each potential source.

N = Not important
S = Somewhat important
V = Very important

43. (N) (S) (V) Parents or other relatives

44. (N) (S) (V) Friends

45. (N) (S) (V) High school teachers or counselors

46. (N) (S) (V) College courses

47. (N) (S) (V) College teachers

48. (N) (S) (V) College career or placement counselors

49. (N) (S) (V) Other counselors

50. (N) (S) (V) Printed materials, radio, or TV

51. (N) (S) (V) Previous work experience

52. Did you receive occupational or career counseling while attending college? Indicate as many as are appropriate.
(a) No (If no, go to question 54)
(b) Yes, during my 1st or freshman year
(c) Yes, during my 2nd or sophomore year
(d) Yes, during my 3rd or junior year
(e) Yes, during my 4th or senior year

53. If you answered yes to the previous question, how helpful was the counseling?
(a) Very helpful
(b) Somewhat helpful
(c) Not helpful

For questions 54-56 select the best response for each question from the five-item list below. Fill in only one response for each time period.

(a) Working full time at a job which I expect to make my career
(b) Working full time at a job which will probably not be my career
(c) Military service
(d) Graduate or professional study
(e) Not in the work force

54. Which one of the five choices above best describes what you expect to be your primary activity this fall?

55. Which one of the five choices above best describes what you expect to be your primary activity about five years from now.

56. Which one of the five choices above best describes what you expect to be your primary activity about ten years from now?

How definite do you consider the expectations marked in your last three responses?
V = Very important
S = Somewhat important
N = Not important

57. (V) (S) (N) This fall

58. (V) (S) (N) Approximately five years from now

59. (V) (S) (N) Approximately ten years from now

---

60. In which of the following work environments do you hope to make your long-term career? (indicate only one)
(a) Self employment or private practice
(b) Business or industrial firm
(c) Educational institution
(d) Private research organization
(e) Welfare agency
(f) Military service
(g) Government or public service (not educational, welfare or military)
(h) Health care facility
(i) Other

61. Where do you expect to be living when you begin your career?
(a) Within Massachusetts
(b) Outside Massachusetts but within the United States or its possessions
(c) In a foreign country

LIST "A"

"Degree Programs and Major Fields of Study"

Please use this list when you answer questions 8 through 10 in your questionnaire. Review this list carefully, find the degree program or major field of study you are looking for, and enter the corresponding two digit code number in the spaces provided on the answer sheet.

BACHELORS DEGREE PROGRAMS

Code	Field of Study
01.	Biology
02.	Business Administration
03.	Chemistry
04.	Communications/Media
05.	Computer Science
06.	English
07.	Industrial Science
08.	Mathematics
09.	Physics

Education Fields

10.	Early Childhood Education
11.	Elementary Education
12.	Industrial Arts
13.	Secondary Education
14.	Special Education
15.	other Education fields

Health Fields

16.	Medical Technology
17.	Nursing
18.	other Health fields

Social Science

19.	Geography
20.	History
21.	Human Services
22.	Psychology
23.	Sociology
24.	other Social Sciences
25.	other _____

LIST "B"

OCCUPATIONAL/CAREER CATEGORIES

Please use this list when you answer questions 19 through 23 in your questionnaire. Review the entire list before you select the category that most accurately identifies your response to each of the questions, then enter the corresponding two digit code number in the spaces provided on the answer sheet.

PROFESSIONAL, TECHNICAL AND KINDRED

Code	CATEGORY
01	***Engineers***
02	***Life Scientists*** (Agricultural, Biological, Marine, etc.)
03	***Physical Scientists*** (Astronomer, Atmospheric and Space, Chemist, Geologist, Physicist, etc.)
04	***Mathematical Specialists*** (Actuary, Mathematician, Statistician, etc.)
	Medical Workers
05	Dentists
06	Optometrists
07	Pharmacists
08	Physicians and Surgeons
09	Registered Nurses
10	Therapists (Occupational, Physical, Respiratory, Speech, etc.)
11	Veterinarians
12	Other Medical Workers (Chiropractor, Dietician, Sanitarian, etc.)
	Technicians — Health [for assistants, see Service Workers: Health Service Workers]
13	Clinical or Medical Lab Technicians
14	Dental Hygienists and Dental Lab Tech.
15	Licensed Practical Nurses
16	Therapy Technicians
17	Other Health Technicians (Health Records Technician, Radiologic Tech., etc.)
	Technicians — Science and Engineering
18	Science Technicians (Agricultural, Biological, Chemical, Mathematical, etc.)
19	Engineering Technicians (Draftsman, etc.)

Code	CATEGORY
	Technicians — Other
20	Aviation Technicians (Airplane Pilot, Air Traffic Controller, Flight Engineer, etc.)
21	Other Technicians not elsewhere classified
22	***Computer Specialists*** (Programmer, Systems Analyst, etc.)
23	***Psychologists*** (not a teacher)
24	***Social Scientists*** (Economist, Historian, Political Scientist, Sociologist, Urban and Regional Planner, etc. — not a teacher)
	Education Professions
25	Elementary and Pre-School Teachers
26	Secondary School Teachers
27	College Teachers
28	Special Education Professions
29	School Counselors
30	Other Education Professions
	Writers, Artists, Entertainers
31	Writers and Kindred (Author, Editor, Reporter, etc.)
32	Artists and Entertainers (Announcer, Artist, Athlete, Composer, Designer, Performer, Photographer, etc.)
	Other Professional Technical and Kindred
33	Accountants and Auditors
34	Architects
35	Clergymen and Kindred
36	Lawyers and Judges
37	Librarians, Curators, Archivists, etc.
38	Social Workers
39	[illegible] Labor Relations Negotiation Worker, Research [illegible] etc.)

(continued)

MANAGERS, OFFICIALS AND PROPRIETORS

Code	CATEGORY
	Buyers, Sales, Loan Managers
40	Bank and Financial Managers
41	Buyers (Wholesale, Retail, Shipper, Farm Produce, Purchasing Agent, etc.)
42	Sales Managers (Wholesale and Retail Trade)
	Administrators and Public Inspectors
43	Health Administrators
44	School Administrators (Elementary, Secondary and College)
45	Other Administrators (Local, Public, Postmaster, Mail Supervisor, etc.)
46	Inspectors, Public
	Other Managers, Officials and Proprietors
47	Office Managers, not elsewhere classified
48	Other Managers and Administrators (Funeral Director; Hotel, Motel, Restaurant, or Bar Manager; Superintendant and Building Manager; etc.)

SALES WORKERS

Code	CATEGORY
49	***Insurance Agents, Brokers, etc.***
50	***Real Estate Agents, Brokers, etc.***
51	***Stock and Bond Salespeople***
52	***Sales Clerks — Retail Trade***
53	***Other Sales Personnel*** (Wholesale and Retail Trade, Manufacturing Representative, Service and Construction, etc.)

CLERICAL WORKERS

Code	CATEGORY
	Secretaries, Stenographers, and Typists
54	Secretaries and Stenographers (Personal, Legal, Medical, etc.)
55	Typists
	Office Machine Operators
56	Keypunch and Computer Equipment Operators
57	Others (Bookkeeping and Billing Machine, Calculating, Duplicating, etc.)
	Other Clerical Workers
58	Bookkeepers
59	Cashiers
60	Other Clerical Workers (Bank Teller, Clerk, Receptionist, Telephone Operator, etc.)

CRAFTSMEN, FOREMEN AND KINDRED

Code	CATEGORY
	Construction Craftsmen
61	Construction Machinery Operators (Bulldozer, Excavating and Grading Machine, etc.)
62	Electricians
63	Other Construction Craftsmen
64	***Metalworking Craftsmen*** (Not mechanics)
65	***Foremen, not elsewhere classified***
	Mechanics, Repairmen, and Installers
66	Airconditioning, Heating, Refrigeration Workers
67	Automotive Workers (Accessories Installer, Body Repairman, Mechanic, etc.)
68	Heavy Equipment and Diesel Mechanics
69	Other Mechanics and Repairmen
70	***Printing Trade Craftsmen***
71	***Transportation and Public Utilities Craftsmen***
72	***Other Craftsmen and Kindred Workers*** [illegible] Optician, Stone Cutter, Tailor, Upholsterer, Window Dresser, etc.

[continued]

OPERATIVES

Code	CATEGORY
	Operatives other than Transportation Equipment
73	Semiskilled Metalworking Operatives (Drill Press, Lathe, Welder, etc.)
74	Semiskilled Textile Workers (Knitter, Spinner, Weaver, etc.)
75	Semiskilled Packing and Inspecting Workers
76	Other Operatives (Assembler and Production [illegible]orker, Bottling and Canning W[illegible] [illegible]ressmaker, Garage Worker and G[illegible] [illegible]ttendant, Laundry and Dry C[illegible] Operative, Meat Cutter and B[illegible], Mine Operative, etc.)
77	***Transport Equipment Operatives*** (Bus and Taxi Driver, Railroad Operative, Truck Driver, etc.)

SERVICE WORKERS

Code	CATEGORY
78	***Cleaning Service Workers — not Private Household*** (Maid, Cleaner, Janitor, etc.)
79	***Food Service Workers — not Private Household*** (Bartender, Cook, Waiter, etc.)
80	***Health Service Workers*** (Dental Assistant, Health Aid, Nurse's Aid, Orderly, etc.)
81	***Personal Service Workers*** (Airline Steward and Stewardess, Barber, Child Care Worker, Hairdresser and Cosmetologist, Welfare Service Aide, etc.)
82	***Protective Service Workers*** (Fireman, Policeman, Watchman, etc.)
83	***Private Household Workers*** (Cook, Housekeeper, Servant, etc.)

LABORERS

Code	CATEGORY
84	***Laborers, not Farm Workers*** (Construction Laborer, Freight Handler, Garbage Collector, Gardener, etc.)

FARMERS AND FARM WORKERS

Code	CATEGORY
85	***Farmers and Farm Managers*** (Manager, Owner, or Tenant)
86	***Farm Laborers and Farm Foremen***

OTHER CATEGORIES

Code	CATEGORY
87	***Military Services***
88	***Housewife***
89	***Student***

APPENDIX B

SUPERINTENDENTS' EMPLOYABILITY RATING SCALE

merrimack education center

May 1, 1978

Dear Superintendent:

At the recent Tri-County Roundtable meeting the enclosed questionnaire was distributed to determine employment information as it relates to positions within the school systems. This project is being conducted cooperatively with the State College System and has the support of Chancellor Hammond and George Hill of the Massachusetts Association of School Superintendents.

Each Roundtable is being contacted and information will be gathered from Superintendents across the State. Results of the information requests will then be made available to each of the Roundtables.

The instrument has been designed so as to require a minimum amount of your time in completing it. Your cooperation will be greatly appreciated in returning it to me here at the Center or to Bill Flaherty, Superintendent of Schools in Billerica.

Thank you for your assistance in the Massachusetts State College project and we look forward to hearing from you. Should you have any questions please don't hesitate to contact us.

Sincerely,

Richard J. Lavin
Executive Director

RJL:dp
Enclosure

101 MILL ROAD
CHELMSFORD, MASSACHUSETTS 01824
(617) 256-3985 256-3986

SUPERINTENDENTS' EMPLOYABILITY RATING SCALE

Your name: _____ Name of district: _____

No. of students in district: _____

Please make a check mark under each item reflecting your judgment of the employment market based on your experience in your present school district.

	Great Undersupply	Moderate Undersupply	Relative Balance	Moderate Oversupply	Great Oversupply	No Experience
Early Childhood Educator (Sp. Ed.)	—	—	—	—	—	—
Kindergarten	—	—	—	—	—	—
Elementary	—	—	—	—	—	—
Middle School	—	—	—	—	—	—
Junior High	—	—	—	—	—	—
High School	—	—	—	—	—	—
Adult Education	—	—	—	—	—	—
Bilingual Teacher: Spanish	—	—	—	—	—	—
Portugese	—	—	—	—	—	—
other: Specify _____	—	—	—	—	—	—
Tutor	—	—	—	—	—	—
Reading Specialist	—	—	—	—	—	—
Math Specialist	—	—	—	—	—	—
Secondary Focus:						
English	—	—	—	—	—	—
Social Studies	—	—	—	—	—	—
Language	—	—	—	—	—	—
Music	—	—	—	—	—	—
Art	—	—	—	—	—	—

	Great Undersupply	Moderate Undersupply	Relative Balance	Moderate Oversupply	Great Oversupply	No Experience
Secondary Focus (Continued)						
Math	___	___	___	___	___	___
Physical Education	___	___	___	___	___	___
Science	___	___	___	___	___	___
Business	___	___	___	___	___	___
Agriculture	___	___	___	___	___	___
Home Economics	___	___	___	___	___	___
Industrial Arts	___	___	___	___	___	___
Vocational	___	___	___	___	___	___
Support Personnel:						
Psychologist	___	___	___	___	___	___
Guidance Counselor	___	___	___	___	___	___
Career Counselor	___	___	___	___	___	___
Resource Room Teacher	___	___	___	___	___	___
Consulting Teacher	___	___	___	___	___	___
Itinerant Teacher	___	___	___	___	___	___
Self Contained Special Class Teacher	___	___	___	___	___	___
Speech/Language Therapist	___	___	___	___	___	___
Physical Therapist	___	___	___	___	___	___
Occupational Therapist	___	___	___	___	___	___
School Nurse	___	___	___	___	___	___
Interpretor for the Deaf	___	___	___	___	___	___
Other						
Specify ___	___	___	___	___	___	___
Specify ___	___	___	___	___	___	___
Specify ___	___	___	___	___	___	___

APPENDIX C

STATE COLLEGE INTERVIEW GUIDE

State College Interview Guide

1.
   a. How many students are being prepared to serve handicapped children or adults?

Under-graduate		Graduate	
Full time		Full time	
Part time		Part time	

   b. How many staff are assigned to each of these programs?

Under-graduate		Graduate	
Full time		Full time	
Part time		Part time	

2. In the under-graduate program, what courses are required and what courses are optional?
3. Is there a document which conveys the philosophy of the program and the rationale for the intended knowledge competencies which they provide the students?
4. What is the range of practicum opportunities offered to students (what environments and working situations)?
5. What knowledge does each course intend to impart?
6. What applicable competencies should be derived from each of these courses?
7. What professional titles are graduates eligible to utilize?
8.
   a. How many students move in and out of programs?
   b. Is there documentation regarding attrition?
   c. How many students move out of the college and how many move to other majors?

9.

a. How long have these programs been in place?

b. Have there been any shifts in the size or emphasis of the program?

10. Within special education, are you seeing any shift in student interest regarding what they want to do with their degrees?

11. Can you share with me any documentation listing the required optional course work and practica for your program?

12. Can you give me any documentation regarding the knowledge and competencies associated with each component of the program?

13. Is there a rationale beyond achieving certification for the profile course offerings, especially among the electives?

14. What is the range of college arrangements for practicum (one hour credit-two hour credit)?

15.

a. How are decisions about practicum placement made and who makes them?

b. Is previous course work a factor?

c. Are specific objectives established for each practicum?

d. How are practicum programs evaluated both in terms of the individual student and the practicum situation itself?

e. Is there an effort to select practicum situations for the application of certain specific competencies?

16.

a. What amount and form of field supervision is involved with these practicum placements?

b. How often do campus faculty see the students?

c. Do field supervisors assist students in establishing objectives?

17.

a. What is the relationship between campus and field supervision?

APPENDIX D

STATE AGENCY INTERVIEW GUIDE

STATE AGENCY INTERVIEW GUIDE

1. WHAT CAREER OPPORTUNITIES ARE AVAILABLE IN THE AGENCY?
2. WHAT ACADEMIC BACKGROUND IS NECESSARY?
3. WHAT SKILLS ARE NECESSARY?
4. WHAT IS THE MINIMUM REQUIREMENT FOR ENTRY LEVEL POSITIONS?
5. WHAT ON-GOING TRAINING IS NEEDED?
6. IS THERE A MARKET FOR INSERVICE TRAINING?
7. HOW LONG SHOULD INSERVICE COURSES LAST?
8. ARE FUNDS AVAILABLE IN THE AGENCY FOR STAFF TRAINING?

APPENDIX E

PROJECT ACTIVITY SCHEDULE

PROJECT ACTIVITY SCHEDULE

Dates	Milestones	Calendar of Events
1977 October 11	Proposal Development	Meeting with Office of the Chancellor
October 15		Proposal completed for 3 State Colleges
November 3		F.S.C. meeting
November 14		M.D.E. Interagency meeting Title XX
November 14		Consultant meeting
November 15		State College meeting
November 16		Meeting with Consultant(s)
November 18		Boston State College meeting
December 1	TITLE XX Proposal Development	Title XX meeting with Office of the Chancellor
December 6		M.D.E. Special Education Division -- Interagency
December 9		Planning meeting--Office of the Chancellor with consultant(s)
December 13		Meeting at F.S.C.
December 20		Meeting--Office of the Chancellor
1978 January 3	Conference of State College Faculty Representatives	Planning Meeting
January 5		Advisory Council Meeting
January 17		Planning Meeting
January 23		Conference for State College Advisory Committee
January 29		Planning meeting--consultant(s)
January 31		M.D.E. Interagency meeting
January 31		Meeting--Office of the Chancellor
February 2	Manpower Study Initiated	F.S.C. planning meeting
February 8		Conference--F.S.C.
February 9		Consultant(s) meeting
February 13		Collaborative meeting with M.D.E. and consultant(s)
February 15		Consultant meeting
February 15		Meeting--Office of the Chancellor
February 22		Meeting at F.S.C. relative to manpower study

March, 1978	Superintendent's Survey Initiated	Visits to Superintendents Roundtable Groups (consultant)
		North Shore
		Old Colony
		South Shore
		Tri-County
		Worcester County
		Merrimack Valley
March 2		Consultant(s) meeting with M.D.E. project
March 14		Advisory Board meeting
March 26		Consultant Meeting
April 2	Proposal Development	F.S.C. meeting--manpower study
April 5	Manpower Study	Human Services meeting (consultants)
April 14		F.S.C. Meeting
April 27		Consultant--Robert Greenberg
April 28		State College meeting Boston
April 29		R. Greenberg consulting
May 5		Meeting with F.S.C. president
May 8		M.D.E. Springfield Office
May 11		Meeting--Office of the Chancellor
May 18	Preliminary Report	Meeting--Office of the Chancellor
May 25	College On-Site	F.S.C. planning meeting
May 26	Visitations	Meeting--Office of the Chancellor
June 4		Human Services meeting
June 27		Human Services meeting
June 27		M.D.E. Interagency meeting
July 6	Preliminary Report on Human Services	M.D.E. Inceragency meeting
August 1		M.D.E. project meeting
August 1		F.S.C. on-site planning meeting
September 18		Mass. State College Report to Office of the Chancellor--preliminary report
September 29		Meeting--Office of the Chancellor
October 5		Meeting--Office of the Chancellor
October 13	Final Report	Meeting--Dover Center, Wellesley
October 19	Submitted	F.S.C. meeting
November 1		Meeting with the Office of the Chancellor

APPENDIX F

TITLE XX PROGRAMS

TITLE XX PROGRAMS

During the period of the planning project entitled "Responding to New Career Opportunities" the Massachusetts State College System was undertaking an approach through Title XX funds to link State Colleges with one of the major program endeavors of the Office of Human Services. This effort by the Massachusetts State College System is to be commended and represents an excellent example of interagency cooperation, between Higher Education and Human Services, as suggested in this Final Report.

The planning project provided assistance to this effort through meetings, designing requests for proposals (RFPs), and proposal reviews. The central office of the State College System, through the offices of Dr. Lawrence Quigley and with the efforts of Mr. David Parachini of the Massachusetts Department of Education, have provided support and technical assistance to the respective State Colleges in this endeavor.

As of this writing, seven State College campuses have delivered approximately one million dollars worth of services in a nine-month period under Title XX. Some 1700 personnel from the State's Public Human Service Agencies have received training and retraining through these State College programs.

The evaluation ratings of the delivery of the instruction and training programs have been high and this is encouraging for future

expansion of this successful interagency endeavor. The following is a listing of College campus participation in the 1978 calendar year.

SITE	AREAS
Central Office	Planning and Coordination
Boston	Alcoholism Case Management Juvenile Court Job Readiness
Bridgewater	Adolescence Juvenile Court Mental Health
Fitchburg	Alcoholism Case Management Juvenile Court Job Readiness
Framingham	Elderly
North Adams	Case Management Juvenile Court Job Readiness
Salem	Juvenile Court
Westfield	Adolescence Elderly Juvenile Court Job Readiness