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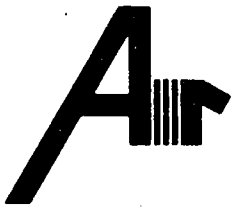
ABSTRACT

Information is provided in this report on existing career-related resources in Boston, and on what can be done to further the implementation of career exploration programs. Section 1 provides the historical and policy context for the information, analyses and recommendations. Section 2 describes national developments and strategies for implementation of career education. Section 3 details Boston's system-wide findings and recommendations related to career education. Section 4 enumerates several alternative designs for implementation of middle school career exploration programs and describes the current plan for implementing career exploration. Section 5 (80 pages) contains information on the existing resources of the Boston middle schools and recommendations for the improvement of the programs at each school. (TA)



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ON THE WAY TO WORK:

A REPORT ON CAREER EXPLORATION IN BOSTON MIDDLE SCHOOLS

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This report could not have been prepared without the cooperation and assistance of Boston Public Schools administrators and teachers. We are particularly grateful to all of the middle school principals, teachers, and counselors who willingly gave of their time to cooperate with project staff. Ralph Clampitt, Director of the Vocational Remedy Component of the ESAA Department, provided continual support and helpful feedback. James Mahoney, Assistant Director of Vocational Education and Industrial Arts, Aurelia Kelley, Director of Home Economics, and Daniel Kearns, President of the Middle School Principals Association, all provided assistance in procedural arrangements and invaluable insight into areas of concern. We sincerely hope that this document provides the guidelines for change that these individuals and their associates are so interested in addressing.

Laura Saunders, representing the Bureau of Equal Educational Opportunity of the State Department of Education, was an excellent "sounding board for ideas," and together with Dr. Harold Resnick of

Boston University provided this project with the results of a survey of middle school principals which has been incorporated into this document.

I am grateful to all of these people and others too numerous to mention for their assistance on this project.

A summary of the recommendations contained in this report were reviewed by middle school principals and central office administrators at a meeting on July 1, 1976. Participants had an opportunity to make suggestions regarding the report's format and content and substantially confirmed the findings.

This report is dedicated to the school children of the city of Boston--the primary source of motivation for this project and for improvement of the Boston Public Schools.

Robert I. Tobin
Project Director

August 1976

PREFACE

This report provides information on existing career-related resources and what can be done to further the implementation of Career Exploration programs. These programs in the Boston Public Schools are already on the way to work.

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INTRODUCTION

Although the origin of recent emphasis in American schools on career education is generally ascribed to the then Commissioner of Education Marland's address before the National Association of Secondary School Principals (1971), Marland (1974) prefers to trace the concept "back at least as far as the great twelfth-century Jewish scholar Maimonides."

Regardless of its theoretical origins, however, there can be little doubt that career education has been widely embraced by schools across the country. For whatever reason -- perhaps as a reaction to the heavy emphasis of the 1950s and 1960s on science and mathematics; perhaps as a result of the economic conditions of the 1970s; or perhaps as a concern for the 30 or 40 percent of our youth who are only modestly served by their secondary school experience, at least as far as transition to postsecondary school work is concerned -- the career education movement reflects a renewed emphasis on the practical utility of an individual's educational experience (NSSE, 1976).

Career education is a generic term being used with increasing frequency to refer to those educational activities necessary to make schools more relevant to the needs of students and to materially enhance young people's ability to make smooth and orderly transitions from the dependent status of students to independent, self-sufficient members of society (Dunn, 1976).

The importance of the close articulation between educational goals and the practical demands of daily life has long been emphasized in American education. John Dewey in Democracy in Education (1916) urged the curriculum to be organized around "various forms of occupations typifying social callings." The Commission for the reorganization for Secondary Education, in Cardinal Principles of Secondary Education (1918), emphasized the importance not only of academic achievement, but also of vocational preparation, citizenship training, and the salutary use of leisure time, as major goals of education.

Historical Antecedents

In the mainstream of educational theory, career education has two major antecendents. The first is vocational education, with its emphasis on task-relevant curricula, functional competency, and training for real-world activities. The second antecedent is the curriculum reform work initiated by John Dewey early in this century. Dewey emphasized the need for education of the total student -- an education that encompassed both practical and academic skills. He also advocated that students take an active role in their education and develop independent problem-solving skills, emphases that are fundamental to contemporary education and to the thrust of career education.

Career education differs in a number of ways from vocational education, though. Rather than providing training for a specific vocation, it emphasizes a broad orientation to the world of work by fostering an understanding of the socio-economic structure of our society. But, more importantly, it places the individual at the center of these studies; it encourages the individual student to know himself or herself, and to view the future, and his or her options, in light of this self-knowledge. In this context, it also stresses clarification of personal values regarding preferred life-styles. Career education also differs from vocational education in that it is designed for all students, not a specific set of students.

Why Teach Career Education?

In the past, people could be fairly flexible in making career decisions. Many jobs did not require specialized skills and knowledge. Only 50 years ago, for example, one out of every five workers in America was unskilled, whereas in 1965 only six out of every hundred were unskilled (Tyler, 1967). And, of course, the ratio will be even lower, perhaps two out of every hundred, by 1985. Preparation for a career often did not involve a lengthy preparation period.

Today, an individual can pay a high personal price for a mistaken choice of occupation. The increasing complexity of work tasks, the expansion of knowledge in all fields, an overabundance of qualified people applying for a fixed number of jobs -- these, and other factors, require better career decisions.

This broad perspective was subsequently reaffirmed in various Educational Policy Commission Statements by the National Education Association (1938, 1944, and 1966).

What is Career Education?

Career education is often broadly defined as the development of the skills and knowledge through which individuals may fulfill their own unique needs with regard to occupational choice, social responsibility, leisure time activity, and personal development. It is presumably comprised of those gradual cumulative educational activities and experiences necessary for students to achieve increasing technical knowledge and personal confidence so they may achieve satisfying, meaningful, and self-sustaining roles in society.

Regardless of specific definition, however, there is strong agreement that career education should exist for the benefit of the student -- that it should recognize the inherent dignity of the individual by making the curriculum relevant to the individual's career needs and by gearing the school curriculum to the individual's goals in life.

Given that career education, as a formal concept, is less than a decade old (indeed, Marland reports that the term was coined in early 1971), interest in the general area was accurately predicted by curriculum theorists in the 1960s. Arthur Foshay, for example (1968), felt that the "redefinition and redevelopment of the concept of general education has reached the top of the educator's agenda, (and that) just over the horizon, perhaps only a year or so away, is a general reconsideration of vocational and technical education."

Career guidance can no longer be of limited importance in our schools. A national survey conducted a few years ago found that high school students' career plans reflected a substantial lack of realism (Flanagan, et al., 1971). For example, when asked five years after graduation about their career plans, only 18.6 percent of the students still planned to pursue the career they had chosen in their senior year. Furthermore, many of these students felt that the schools had not given them adequate preparation to make intelligent long-range decisions.

Also, students are becoming increasingly aware that long-range, personal deicsions include much more than simply "choice of a career." When asked what they considered requisite for high quality in one's life, 60 percent of those interviewed gave the highest ratings to the following factors: 1) health and personal safety; 2) relations with spouse; 3) occupational role; 4) having and raising children; and, 5) understanding and appreciating self. The implications of these studies testify to the need for career education, broadly defined; for an education that would prepare students to appraise themselves, and, on the basis of their appraisal, to make informed decisions about a future life-style.

Career education, then, attempts to prepare students for the eventual realities of the contemporary work world. It assists them in developing personal goals so that they can eventually make sound career choices: choices that not only are relevant to their own interests, but which also will qualify them for the existing job market. By providing students with information and decision-making skills, career education encourages the development of realistic career goals and career plans, as well as the ability to adapt to the changing job market.

Career education is viewed as a lifelong process, one that is incorporated into all levels of schooling. From the youngest age groups through adulthood, career education concepts build from basic awareness to complex skill development. This development process of career education is generally viewed in three stages:

Awareness stage, at the elementary school level, when students become aware of their own preferences, why people work and the range of occupations.

Exploration stage, at the middle school level, when students explore and compare occupations to determine whether an occupation is of sufficient interest to study further.

Preparation stage, High School through Adult Education, when students develop skills for entry positions or further education. In instruction, attention is paid to training in occupations with related skills in order to attain career mobility.

This report is concerned with the Exploration phase of career education at the middle school level.

Career Education in Boston

The Unified Plan for Occupational and Vocational Education for the City of Boston, submitted to the United States District Court, District of Massachusetts, in September 1975 by the Boston Public Schools and the Massachusetts Department of Education, attempted to address the critical need for upgrading career-related education in Boston. The Unified Plan took into account the national trend toward career education and the need to provide middle school students with career exploratory experiences so that their subsequent career planning and career selection decisions would reflect each student's unique experiences, aptitudes, interests and abilities. The Unified Plan states that:

> "Exploratory clusters offered in grades six through eight will be required for all students in all schools. There will be three groups of clusters: 'Industry-Related,' 'Food-Home-Services/Health-Related,' and 'Business-Distribution-Government-Related.' Every student will receive instruction in each of these three groups of clusters." [2]

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2 Boston Public Schools and Massachusetts Department of Education, "Unified Plan for Occupational and Vocational Education for the City of Boston," September 1975.

The Unified Plan established a 36-month (September 1975 - September 1978) planning and implementation process for middle school career exploration programs. This report represents one aspect of the Boston Public School's efforts in the first period (September 1975 - September 1976) in planning for full implementation of career exploratory programs in September 1978.

Two other groups have also been involved in the planning for implementation of career exploratory programs. First, the Vocational Remedy Component of the Emergency School Assistance Department of the Boston Public Schools has played a major role in furthering the improvement of career-related programs and throughout the year has held parent workshops to insure that career exploratory programs would be responsive to the needs of the community. Second, the Career Exploration Task Force, hosted by the Bureau of Equal Educational Opportunity, State Department of Education, and composed of a broad cross-section of State Department of Education staff and Boston Public Schools administrators, parents and career education consultants has been meeting for the past six months to discuss the strategies for implementation of career exploratory programs at the middle school level.

The implementation of career exploration in Boston is well underway as this report is being prepared. In June 1976, the Bureau of Equal Educational Opportunity under Chapter 636, Massachusetts General Laws, awarded close to $500,000 to the Boston Public Schools for implementation of career exploration in the middle schools, beginning in September 1976. The funds were awarded to the city based upon the "Detailed Design for Implementation of 1976-1977 Career Exploration in the Middle Schools of the Boston Public Schools" which was developed by the staff of this project.

During the summer and fall of 1976, over 150 parents, counselors, teachers and administrators will participate in career education training workshops and will begin implementation of career exploration

in September. Although this represents a significant step towards implementation of career exploration, full implementation of career education cannot be an expected result of one project.

Institutional change takes time. Recognizing this, the Massachusetts Department of Education and the Boston Public Schools need to give priority to career exploration over at least the next two years.

Description of This Report

Today, when one mentions career exploration to middle school teachers, the immediate response generally refers to Industrial Arts and Home Economics. Industrial Arts and Home Economics courses do provide students with some of the "hands-on practical experiences" which are part of career exploration, but to be fully effective career exploration must involve all teachers. This report aims to assist the Boston Public Schools in further implementing career exploration programs and in improving the existing Industrial Arts and Home Economics programs.

This final report contains the results of a three-month project which was conducted under a contract with the Vocational Remedy Component of the Emergency School Assistance Act Department of the Boston Public Schools. The project's key objectives were to:

- Assess the physical and human resources available for career education in the middle schools;
- Assess the physical and human resources in Industrial Arts and Home Economics;
- Assess students' experiences in career-related education;
- Survey national developments in career education;
- Develop alternative program designs for implementation of career exploration in Boston;
- Prepare a final report which will assist the Boston Public Schools in improving career-related instruction in the middle schools.

This final report is based upon a total of over 300 interviews with administrators, teachers and students and a recent national survey of career education conducted by The American Institutes for Research under a separate U.S. Department of Health, Education and Welfare contract. It is our intent that this document will serve as a stimulant for discussion and further planning by the Boston Public Schools administrators who are concerned with continuing the improvement of middle school career-related programs. The report provides information and recommendations relevant to the whole system and to individual schools.

Implementation of some of the recommendations would lead to an immediate improvement of some existing programs, with minimal additional cost. These have been identified for implementation in September 1976. Other recommendations will require more time and in some cases substantial additional financial resources. But the process of addressing even these longer term recommendations can, and should, begin now.

NATIONAL TRENDS IN CAREER EDUCATION

In his 1971 speech, "Career Education Now," Marland brought the goals of general education, vocational education, and technical education squarely into focus. Shortly thereafter, the U. S. Office of Education, through its National Center for Educational Research and Development (which eventually became the National Institute of Education), undertook a series of studies to ascertain the feasibility of four different experimental forms of career education. Each form eventually was funded and became the basis for major research and development efforts by the National Institute of Education. The four forms, or models, were: 1) a school-based model wherein career education was to be provided through the regular educational establishment; 2) an employer-based model wherein education was to be provided by a consortium of employers who would assume the educational responsibilities of the public school system and provide both general and career education to youth in their employ or who had been assigned to them for work-study experience; 3) a home-based model wherein career education was to be provided in the home through the television medium; and 4) a residential model wherein intact family groups would be physically relocated to a central site and all members of the family provided education, training, and career guidance assistance.

Concurrently with the research and development activities of NIE, the U. S. Office of Education's Bureau of Adult, Vocational, and Technical Education funded several hundred demonstration programs and materials development projects throughout the country.

In the process, USOE and NIE offices carefully avoided promulgating an "official definition" of career education, thereby allowing local definitions to be developed. As a result, while there is general consensus regarding definitions at the broadest levels, there are numerous differences of opinion in the field regarding technical and procedural details. These include: 1) the degree to which career education blends with vocational education; 2) the degree to which occupational exploration,

and practice in decision making become, in fact, accelerated career choice; 3) whether emphasis on occupational information in the early grades detracts from the acquisition of more important basic skills; 4) whether, in the face of rapid job obsolescence and the emergence of entirely new fields of endeavor, the content offered in the early grades will remain valid throughout the school years of the student; 5) whether early practice in career planning and decision making will result in premature foreclosure of options through the early delimiting of student interest; and 6) whether or not career education will lead to a greater frequency of "tracking" children, especially minority children, into dead-end or less desirable career paths.

Career education may be broadly defined, however, as the development of skills and knowledge through which individuals may fulfill their own unique needs with regard to occupational choice, social responsibility, leisure activity, and personal development.

Further, career education is generally assumed to be intended for all children as an integral part of their educational experience.

It is also usually assumed that career education should not only enhance a student's awareness of the world of work, but also provide a personal orientation to that world of work, opportunity for the exploration of a variety of options, and the development of basic skills in at least one area of occupational endeavor.

Although the field is replete with unanswered questions of philosophy, methodology, and intent, career education nevertheless appears to have gained widespread social support.

The Scope of the National Effort

A series of studies recently conducted by the American Institutes for Research pursuant to congressional requirement specified in

the Educational Amendments of 1974 provide the best overview yet developed of the current extent of educational practice in career education.

In a survey of a nationally representative sample of over 900 local school districts, enrolling 39 percent of the nation's student population, 60 percent of the nation's school districts reported some activity in career education. Twenty percent of the nation's teachers were involved in career education staff development activities some time during the 1974-75 school year. Twenty-one percent of the nation's students are enrolled in school districts where a broad array of activities in career education are systematically implemented.

Staff development activity in a district was significantly correlated with the variety of career education activities offered students in that district. Indeed, one of the best indicators of a high level of career education implementation was the local development, by school staff, of materials to use for career education in the classrooms.

Districts having formal policy statements on career education spent an average of $2.71 per pupil on career education in 1974-75. But, for the most part, the implementation of local school district career education activities was carried out without the stimulus of external funding. And while there was much greater implementation by districts with larger enrollments than by districts with small enrollments, there was no significant difference in career education implementation between affluent and economically disadvantaged districts.

Nor is career education limited to local initiative. In a survey carried out by the Council of Chief State School Officers (1975), formal policy statements regarding career education exist in 42 states. This compares to only two states which had formal policies on career education four years earlier.

In 1975-76, $60 million ($40 million in state aid to districts and $20 million in local resources) were spent by school districts in the implementation of career education.

In brief, then, it would appear that, as the supporters of career education have put it, career education is an idea whose time has come. There can be little doubt that it has captured public attention and professional allegiance. Fundamental questions may be asked regarding the mechanics of its implementation, however, and regarding the most appropriate procedures for its assessment and evaluation.

Strategies for Implementation

The particular strategy a school district uses in its efforts to implement career education is dependent, of course, on a number of factors, not the least of these being the degree of district commitment to career education, as reflected in the amount of energy and resources they are able, and willing, to invest, and the general management pattern characteristic of the school system, i.e., whether district methods typically involve policy and program directives from the board or central administration, whether decision making is decentralized and programs are simply urged by the central administration, "required by the curriculum," at individual teacher or building option, etc.

The selection of a strategy is also influenced by: the extent to which the district wishes to introduce career education; where they expect to turn for the materials necessary to implement the program; and the particular methods they expect to employ in implementing the curriculum. These latter three dimensions provide an effective schema for categorizing alternative implementation models.

For conceptual purposes, six different levels of comprehensiveness to which career education is to be integrated into the school program can be considered.

The most thorough implementation would, of course, be the complete infusion of career education concepts throughout the entire curriculum offerings of the district. This level of thoroughness is implied in the term " comprehensive career education model." It is assumed that career education content will permeate every instructional activity of the district. In this form it represents the most thorough curriculum reform possible. Needless to say, such enterprise would require a major revamping of the entire educational system, but it is for such a revamping that many of the outspoken supporters of career education promise a revitalized interest in learning; maximized academic achievement; reduction in vandalism, school truancy, and drop-out rates; etc. In theory, this would seem reasonable to expect. However, NIE's "Comprehensive School-Based Model" efforts notwithstanding, no program of career education has gone far in this direction. One early experimental effort to teach basic content in an occupation context was Project ABLE in Quincy, Massachusetts, a major school-based vocational education project of the mid-1960s. More recently, even the Employer-Based Career Education Model programs, which were admittedly the most revolutionary in concept, were not able to implement education programs with such sweeping curricular reform.

The second level of introduction would be the introduction of career education content as enrichment content, i.e., content which would enrich the regular academic offerings of the school district. This enrichment could be incorporated either throughout regular course offerings in traditional areas or through miscellaneous "theme" approaches throughout the school year.

A third level of implementation is the "add-on" model. This is the concept of career education that introduces career education content as additional content, either in the form of career fairs, special interest workshops, the establishment and operation of career information centers, or various other add-on programs. These add-on programs may be in the

form of additions available on an ad hoc basis to all students, or on a more formal elective course approach.

A fourth approach used by many school districts is to provide new "services" in career education. Career education at this level of implementation is synonymous with provision of special services, either to teachers or to pupils. For teachers this often takes the form of districtwide efforts to survey, establish, and operate a local speaker's bureau, industry liaison activities, or student part-time job placement services.

A fifth approach, an approach used in Georgia, has been described as an "interlocking" model where, through a series of required "cognates," all students are expected to take a certain proportion of their work in various interlocking sequences of study spanning a variety of curriculum tracks, e.g., college preparation, industrial arts, home economics, business. This approach is, of course, a somewhat older approach and has been in operation in many school districts for many years.

A sixth approach toward introduction is a "parallel but equal" program model which has been the basic model for vocational education in the past: separate curricula, separate tracks, and student guidance into alternative education programs.

As might be noticed, the latter approaches (the special services model, the interlocking model, the parallel but equal model, and even the special electives model) are approaches that have been used frequently in the past and antedate the career education movement. Those who see career education as curricular reform tend to emphasize the earlier configurations, such as the infusion and enrichment models. Those that see career education as an extension of vocational education tend to emphasize the broader availability of interlocking requirements, special services, electives, etc.

A second dimension to the implementation model, aside from the degree of intensiveness of curriculum innovation, is the source of methods and materials for the curriculum. Are the materials to be procured commercially, are they to be developed locally, or is the program to be operated largely through project and work experiences and field trips?

With the onset of emphasis on career education, it became apparent that there were not large numbers of commercial materials, labeled career education, to which schools could turn to implement new programs. As a result, publishers very quickly began to reorganize, and relabel, many of their earlier products as career education. In addition, publishers responded with new text books, workbooks, newsletters, periodicals, resource kits, etc. All too frequently the price tags were very high, and the materials focused only on occupational information rather than career education in the broad sense. Because of the lack of resources and a growing reservation of teachers regarding prepackaged curricula, many districts undertook the development of materials themselves. Indeed, one major project was funded by the U. S. Office of Education to explore alternative ways school districts might approach their own local curriculum development and to evaluate the efficacy of training classroom teachers as instructional materials developers. The results of this project were reported in a series of ten handbooks published by The American Institutes for Research and currently available through ERIC (Dunn, 1974). Several studies have now shown that school districts that were most successful in implementing a variety of student activities and had the highest level of teacher involvement were precisely those districts that were developing their own instructional materials (McLaughlin, 1976; Dunn, 1974). Why this should be the case is, of course, open to much speculation. However, it is noteworthy that the local development of curriculum specifications, the local design and development of instructional materials, and the energetic testing and revision of those materials by local staff, appear to be associated with a great deal of teacher enthusiasm, and effectiveness, in

changing classroom practices vis a vis career education enterprise.

Finally, the third dimension for classifying implementation strategies, i.e., methods of instruction, may be described according to its various aspects: academic study, community resources, projects, developmental tasks, and life-style choice points. For example, the methods of instruction may be quite traditional, e.g., academic study, reports, library research. More frequently, however, classroom teachers are making a concerted effort to involve community resources, community speakers, parents, and the business, labor, and industry community in a cooperative venture in the education of children. This effort may range anywhere from a visiting speaker supplied by a local industry to a field trip or career education fair sponsored by the business/labor community.

Many teachers are also actively exploring a variety of project-oriented approaches to career education. While in its simplest version this may take the form of a "junior achievement" type of project, it can, in fact, range as far as the creation of simulated communities and economies to public service projects, and to activities where the students engage in community self-help organization projects, actually run businesses, or fill such roles in the school district and community.

Still another approach to methods in career education is the method which organizes and sequences the content of career education according to the development tasks or life-style choice points appropriate for the various age groups. While this last example is very similar to the normal development task series, it has somewhat broader application inasmuch as it can involve such social action choices as dropping out of school, applying for a driver's license, accepting part-time employment, paying income tax, career decision making, and family crisis points.

This simple system allows one to better organize the complexity that

can be seen in the implementation of career education programs across the United States. Obviously, there is no way to implement career education. In terms of common practice, however, districts most often are concerned with: the local development of materials; add-on or enrichment programs; staff development that involves staff in the appraisal of the local curriculum and offers the teacher assistance in curriculum analysis and instructional materials design, and provides the district some form of assistance in the evaluation of the effectiveness of their activities.

Staff Development

Regarding staff development, here too a number of models have been attempted. These typically parallel the traditional staff development models that have been implemented for other types of programs in the past. They range anywhere from brief amounts of released time for teachers to visit other classroom teachers engaged in career education, to teacher committees working on career education curricula, to brief one- or two-day teacher workshops or institute days, to actually releasing cadres of teachers for off-campus and extension credit study.

The evidence would suggest, however, that uncoordinated teacher training of this type pays relatively little dividend. Those districts that seem to have made the most inroad on the introduction to career education have chosen those schools that have seemed most ready for an introduction of career education activities and have selected teachers from those schools who were natural leaders and most interested in educational innovation. Such teachers are singled out for special training often on released time, and assigned, or strongly encouraged, to design and create career education lessons, often with the assistance of district-provided consultants and/or special resource personnel. The sets of experiences designed by these teachers provide prototype experiences those teachers can use to redesign learning experiences for children in their respective schools.

These directed training experiences often involve values clarification exercises; some orientation and history to the career education movement; special training for the design and development of instructional materials; sometimes an overview of the use of educational technology; and systems for the review, critique, and revision of instructional materials and for sharing the materials within the district.

One basic question here is whether to spread staff development resources across all teachers and hope for a little leavening for the entire school district, or to concentrate resources on those teachers who are apt to be most pivotal in the introduction of career education activities in their respective buildings. A study of alternative models for the dissemination, implementation, and operation of career education programs has recently been completed by Dunn and associates at the American Institutes for Research (1974).

Curriculum Methods and Materials

Several major career education curriculum efforts have been undertaken in recent years. One very extensive effort was that undertaken by the Ohio State University Center for Vocational/Technical Education for NIE. This was the major investment of the Federal Government in the school-based career education program. A large number of consultants were involved in the design and development of a comprehensive curriculum spanning grades K-12. Instructional objectives were developed and instructional materials written and field tested. These materials were originally developed in cooperation with six public school districts. Upon development of prototype material, 130 instructional units were sent to the American Institutes for Research for revision and national field testing. These materials have recently undergone field testing in over 500 classrooms

in 13 states. Data from 25,000 experimental and control students were collected. In connection with this field test, over 40 teacher workshops were conducted in 31 school districts across the country.

Similar curriculum efforts were carried out by AIR and also by Eastern Illinois University for the U. S. Office of Education, Bureau of Occupational and Adult Education. In these latter projects, comprehensive curricula were designed for grades K-9. Instructional materials were developed and field tested and made available to school districts as a basis for the Bureau of Adult, Vocational, and Technical Education's Career Cluster Projects, which were concerned with the development of secondary school instructional material for various career cluster groups.

Concurrently with these activities, curriculum design and development activities were under way in connection with the Employer-Based Career Education Model and other development efforts being operated by various regional laboratories. While some of these materials are available commercially, the bulk of such materials are available through ERIC and require local reproduction for quantity use.

Regarding the evaluation of materials such as these and others developed commercially, several major reviews of career education materials have been completed, the more prominent being those carried out by Peat, Marwick and Mitchell in 1974, by the Educational Products Information Exchange in 1975, and by the American Institutes for Research in 1976. Basically, the general result of these reviews was the assessment and critique of materials based on their teaching efficacy, their contemporary quality, the degree to which they reflected sex or ethnic group stereotypes, their cost effectiveness, and their appropriateness for career education broadly defined.

Overall, a comprehensive career education curriculum typically is defined in terms of three or four major strands; knowledge of self,

knowledge of the world of work, and career decision making and goal formulation. These strands comprise the basic cognitive content of career education. In addition, developmental stages of career awareness, career information, career orientation, career exploration, and career preparation are often added as orthogonal dimensions. Finally, additional dimensions having to do with attitude development, prevocational skill acqusition, and social skills, are often included in some definitions of career education.

References and Other Sources of Information

The following list of references offers a basic reading list in career education. For additional information, readers might consult the ERIC Clearinghouse for Career Education, the Journal of Career Education, and newsletter services such as the Capitol Publications newsletters and the McGraw-Hill Career Education News.

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FINDINGS AND RECOMMENDATIONS

Introduction

The Boston Public Schools is embarking upon a major effort to improve career education and vocational education programs in the city's schools. This effort is exhibited in numerous activities, including the East Boston Technical School which will open in September 1976 and the expansion of cooperative education course offerings. This project provides an assessment of what presently exists at the middle school level and provides some of the information necessary for program improvement.

Middle schools in Boston range in size from the Champlain with just 225 students to the Cleveland which has 1,521 students. Most of the middle schools can be clustered into two roughly equal groups -- those with just under 1,000 students and those with approximately 500 students. The one aspect of Boston's middle schools which is striking in its sameness is the age of the buildings. Eighty percent of the schools were built before 1938. A number of the schools are relatively well-maintained, but their age often means dark classrooms, teachers assigned to basement rooms, inadequate wiring, and crowded classrooms. That teachers operate strong programs in such environments is quite remarkable.

This section is based upon analysis of data collected from teachers, administrators, counselors and students during interviews at the schools. Our findings and recommendations describe current programs and what can be done to improve the existing career-related resources of the schools.

We have selected three recommendations which can be implemented in September at a very low cost and substantial benefit to the system. These immediate, low-cost recommendations are:

1. Develop a community resource directory for each district which would list area businesses available for field trips and individuals available as guest speakers. These district directories should be jointly developed by parents, teachers and representatives of the business community and should be distributed to all teachers.

2. Develop a directory of high school vocational offerings and distribute this directory to all middle school teachers, administrators and counselors. This directory can assist middle school personnel in helping students with course selection and planning for high school.

3. In each school, teachers in general subject areas should meet monthly with teachers in Industrial Arts and Home Economics in order to plan career exploration activities and develop possible areas of collaboration. This will assist in the implementation of career exploration for all teachers and all students.

These recommendations and others requiring more time and resources are discussed further in subsequent sections. However, the key to improved programs is the appointment of an Associate Superintendent for Occupational Education who is actively committed to career exploration.

The findings and recommendations are grouped under three headings. The first of these deals with the concept of "Career Education for the Entire School Community," and contains a discussion of the needs and concerns of teachers and administrators in relation to career education. The second heading, "Impact of Recent Developments," examines the concerns of teachers and administrators in relation to recent changes, such as the increase of the bilingual student population. The third heading,

"Industrial Arts and Home Economics," contains a discussion of the specific concerns of the Industrial Arts and Home Economics areas.

Career Education for the Entire School Community

Career education involves teachers of all subject areas, as well as administrators, counselors, parents, and employers. A considerable effort is necessary to integrate career exploration into all middle schools. This section describes current involvements in career education and recommends additional necessary steps for implementation of career exploration.

Expansion of Course Focus to Careers

"Sure we have career education -- that's what they do in Industrial Arts and Home Economics."*

-- English Teacher

"No, I don't really spend much time on careers; the students are too young."

-- Industrial Arts Teacher

"I know what I want to do. I want to play for the Bruins."

-- Student

*These comments, which introduce each major area, are approximate quotations from the people interviewed and illustrate the issues addressed in the narrative.

Most Industrial Arts and Home Economics teachers state that the purpose of their courses is to provide students with basic skills. Many of these skills, such as food preparation and utilization of small hand tools, are basic occupational as well as life competency skills. Teachers generally fail to explain to students how these skills are used in jobs, or even which jobs require these skills. Some teachers feel that the students are not interested in careers, and that middle school is too soon to begin teaching about careers.

Teachers in general subject areas, such as English and Mathematics, often make the incorrect assumption that career education belongs only with the Home Economics and Industrial Arts teachers. Some general subject area teachers do integrate career education principles into their courses, but most do not presently see this as part of their role.

Many opportunities exist for all teachers to relate their concerns to careers, but it is an opportunity few take advantage of. To some extent, this is because teachers are not familiar with occupational requirements. For the most part, teachers feel that career education is not appropriate for middle school and that they should concentrate on basic reading and math skills.

Among students, the interest is there and most students have given considerable thought to careers. (How many times are even the youngest children asked, "What do you want to be when you grow up?") Students who participated in a Law and Criminal Justice Workshop sponsored by the Education Collaborative (EdCO) of Cambridge, Mass., enthusiastically discussed how this program had affected their selection of careers. Of course, career selection for middle school students is tentative and sometimes based on fantasy, such as professional athelete and movie star. However, career exploration can assist students in finding out about a large number of occupations and can assist them in the self-assessment processes necessary for career planning.

The integration of career education principles into all courses will take time and training. Teachers will need to learn that career education does involve all teachers. In addition, teachers will need training in how to relate their courses to occupations and how to relate basic skill development in reading, mathematics and life competency to careers.

This summer and fall, almost 150 teachers of all subject areas will receive training in career education and will plan to begin integrating career education concepts into their classes, but all teachers will need more preparation.

Recommendation:

Provide all middle school teachers with training or information relating to career education so that all teachers can begin to relate their courses to careers.

Guidance Resources

> "Most of my time is spent with students who are having problems and thinking of dropping out of school. I don't have the time for career counseling for all of the students. I don't really sense that careers are of interest to students."
>
> -- Guidance Counselor

Guidance counselors should play a key role in career education -- in developing resources and references and in helping students assess their skills and interests. The average guidance counselor in Boston middle schools is responsible for 377 students and must spent most of the day with clerical tasks and students who are failing or facing personal problems.

Most guidance counselors do have some college training in occupational information and counseling, but lack the time necessary to provide students with assistance in career planning. Some counselors, like teachers discussed earlier, do not yet see career education as a priority, and many counselors will need preparation if they are to play an important role in career education.

Recommendation:

> Provide middle school counselors with training in career education and counseling. Counselors need more preparation in career counseling and should see that career counseling is an appropriate function at the middle school level. (This recommendation will have an impact on how guidance counselors spend their time and may result in the need for additional staff.)

Some counselors have developed career information resources in the guidance department, but many guidance departments lack minimal career education resources, such as the Occupational Outlook Handbook. A large amount of printed occupational materials is available, much of which is available free from professional and industry associations. Providing students with some of this occupational information is one way for counselors to capitalize on student interest and assist in career planning.

Recommendation:

> Develop a career resource center for the guidance department of each middle school. This resource center should be designed for use by students and should include books and pamphlets related to careers.

At present, there seems to be confusion among counselors over the policy for vocational testing. Some counselors do administer occupational interest inventories, but most only remember that "it was something we used to do." The use of occupational interest inventories is a controversial area and parents are appropriately concerned that inventories could be used to "track" students or could represent stereotyped roles. However, when interest inventories are free of bias and properly interpreted, they can provide students with additional information for career planning.

Recommendations:

Review the occupational inventories being used in Boston and those available nationwide for any problems of ethnic, race and sex bias.

Select occupational inventories for system-wide use and train counselors in the administration and interpretation of the inventories.

Business and Parental Involvement

"The man across the street who owns the florist shop graduated from this school. I'm sure he'd be glad to come over here and talk with the kids. He used to."

-- Principal

"We had an architect come in and talk with the students, but she talked over their heads."

-- Industrial Arts Teacher

"I used to take the students on field trips before we changed over to a middle school. Now there are too many obstacles that the principal has set up."

-- Industrial Arts Teacher

Considerable business and industry resources are available to the Boston Public Schools, but there is little evidence that the middle schools are utilizing these resources in school programs. Teachers spoke of field trips as "something they used to do," not as an activity that they presently use to supplement what they do in their classes. Teachers also spoke of bad experiences with guest speakers whose presentations were inappropriate for the students.

Teachers do not hold field trips or invite guest speakers for a variety of reasons. First, again, is that the "students are too young." Teachers are concerned that the students may misbehave, or not understand. Second, teachers sometimes lack an understanding of how to make the necessary arrangements for field trips. Third, teachers have difficulty identifying and utilizing community resources appropriate for middle school students. Often, teachers blame the lack of field trips on school administrative procedures, and although a few school principals do discourage involvement with the community, most would welcome it and the teacher initiative that it represents.

Although it is unclear whether large groups of young children would be welcome in some businesses, some business leaders are interested in a more active role in the schools and are willing to lend support to middle school staff. The Tri-Lateral Council, composed of community business leaders, has been working with the Boston Public Schools to determine possible involvement in career exploration programs. In addition, the First National Bank of Boston has sponsored a Youth Motivation Group which provided some middle school students with the opportunity to visit area businesses.

Recommendations:

Develop and distribute a system-wide procedure for guest speakers and field trips. This will familiarize all teachers with the necessary procedures and arrangements.

Develop a handbook for conducting field trips and utilizing guest speakers. This guidebook should contain suggestions for orienting students and the employer representative, as well as guidelines for learning the most from each activity.

Parents must be involved in career exploration programs. Certainly, many parents would be invaluable as guest speakers on their occupations and as liaisons with the business community. Three parents from each of twelve schools will participate in career education training this summer and fall and will assist in the design of the career education programs for the schools which they represent.

Recommendation:

Develop a community resource directory for each district which would list area businesses available for field trips and individuals available as guest speakers. These community resource directories should be jointly developed and annually updated by parents and teachers in consultation with the Tri-Lateral Council and the Citywide Industry Labor Advisory Council. These directories should be distributed to all teachers.

Coordination with High School Program

> "The way these schools change every year, I don't know what the high schools offer. I used to send students to Dorchester High for cabinetmaking, but now I understand that program is being phased out. And who knows what's going on with the Occupational Resource Center!"
>
> -- Industrial Arts Teacher

Career education on the middle school level aims to assist students with career planning and decisions, and one of the most immediate decisions which students face is the selection of their high school programs. But teachers, counselors, and students lack up-to-date information on course offerings at the high school level, particularly in the area of vocational education. Teachers would like to provide students with information on high school course offerings but do not know how to get this information.

As the Boston Public Schools implements the Unified Plan for Occupational and Vocational Education and moves toward opening of the new Occupational Resource Center, the number of vocational offerings at the secondary level will be considerable. But middle school staff and students need to know that these programs are offered in order for students to make informed decisions.

Recommendation:

Develop a directory of high school vocational course offerings and distribute this directory to all middle school teachers, administrators and counselors. It is recommended that this information be disseminated on a regular basis and particularly when there have been changes in high school offerings. Special assemblies should be held to provide students with this information.

Middle school teachers also need to know more about the high school curriculum so that they can give students adequate preparation and not duplicate the content of the high school offerings.

Recommendation:

> Involve middle school teachers in curriculum planning for new high school offerings. This will provide high school teachers with information on the interest and skills of middle school graduates and will assist middle school teachers with their own course planning.

Impact of Recent Developments

Current regulations at the state and federal levels have stressed the necessity of providing all students with equal educational opportunities. The concerns of special needs, bilingual education, and sex discrimination are highly compatible with career exploration, which stresses the importance of widening the future options available to students.

Already, teachers in Industrial Arts and Home Economics have felt the impact of co-education, the increase in bilingual enrollment, and the increased mainstreaming of special needs youngsters. This section describes response to the new developments and suggests additional steps for successful implementation of the regulations. Many of the findings and recommendations are relevant to the entire school community and career exploration.

Co-Education in Industrial Arts and Home Economics

"The best student I ever had was a girl. She eventually went on to Wentworth to study architectural drafting."

-- Industrial Arts Teacher

"The mixed classes are a problem. I have to teach the boys the basics, like the difference between ½ tablespoon and ½ cup. It's hard to keep them interested and they hold the girls back."

-- Home Economics Teacher

Co-education in Industrial Arts and Home Economics is still in the planning stage in most middle schools in Boston. In the past year, only six schools had an equal enrollment of male and female students within both Industrial Arts and Home Economics. At the Cleveland, Curley, McCormack and Horace Mann, female and male students are scheduled into these courses just as they are into any other major course or elective with boys and girls taking the same classes together. While at the Thompson and the Wilson, all female and male students are assigned to both Home Economics and Industrial Arts, but they remain in separate classes.

Though almost all of the other schools in the system offer open enrollment, few students -- on the average less than 10% -- take advantage of the opportunity. With the exception of the King, observation suggests that currently more female than male students are taking a course not traditional for their sex.

The continued separation of boys and girls limits the diversity of learning opportunities for both sexes. The disparity between all of the courses available in a given school and those accessible to

female students is particularly great. Most female students in the system are limited to Foods and Clothing courses offered in Home Economics, while most male students have up to six possible options in Industrial Arts.

All middle schools are planning to move towards full co-education next year in compliance with Massachusetts Chapter 622 regulations. Administrators and teachers, however, have some substantial concerns about the implementation of these plans. There is still some confusion among school staff about the exact requirements of the law, particularly over the obligation to have male and female students in the same classes. In fact, Chapter 622 does require mixed classes, and some schools may need assistance in understanding and planning for the changes required.

Many parents and students in Boston are reluctant to see these changes implemented, and school staff are rightly concerned about handling adverse reactions from parents to co-education in these areas. Boys, and their parents, seem to have greater difficulty in adjusting to Home Economics courses than girls have in Industrial Arts courses. School staff will need support in helping parents and children appreciate the positive effects of the move to co-education, increased skills and opportunities for all children.

In time, Boston schools will also need to make compatible adjustments in their staffs. There are no male teachers in Home Economics at the middle school level, and there is only one woman teaching Industrial Arts.

The adjustments problem involved in the transition require special ingenuity from teachers. Those who have faced these difficulties report particular problems in motivating boys in Home Economics, but they also indicate a marked sense of accomplishment in having modified their curriculum to interest male students and in having devised projects which hold the boys' attention.

The introduction of more career-related activities have proved helpful in making the transition. By emphasizing job opportunities which are related to Home Economics and Industrial Arts courses, teachers can ease some student and parent concern about self image.

Recommendation:

Provide training for teachers in Industrial Arts and Home Economics to ease the transition to co-education in these areas.

Special Needs Children

> "I'd really like to do more for special needs students, if I didn't have to give so much time to the rest of the class."
>
> -- Home Economics Teacher

Chapter 766 of the Massachusetts State Law called for the integration of students with special needs into those courses where students had sufficient abilities. Today, Home Economics and Industrial Arts teachers seem to have little difficulty when working with students who are still in special categorical programs, but teachers do have concerns about the integration of students into their regular classes. Teachers of all subjects tend to report that the "766" students are "discipline problems who can't keep up with the rest of the class and take most of the teacher's time." Such comments represent real concern for students' needs, as well as simple complaints on the part of the teacher.

The integration of special needs children into the regular classroom does, of course, affect all teachers. Home Economics and Industrial Arts teachers share with their associates the need for more understanding of the purpose of mainstreaming and better techniques for handling the classroom problems it raises. However, Industrial Arts and Home Economics teachers do have additional concerns specific to the nature of their classrooms. These rooms are filled with equipment and supplies which are potentially hazardous. In Industrial Arts and Home Economics, where students can injure themselves on equipment, teachers are concerned about student safety.

Recommendation:

The Core Evaluation Team Leader at each school should work with Industrial Arts and Home Economics teachers when working out student programs and assigning students to classes. In this way, Industrial Arts teachers and Home Economics teachers can be included in the decisions regarding student assignment.

Bilingual

"I have one student who just moved here from Puerto Rico. I don't speak Spanish, so I've paired that student with a bilingual Spanish student. I don't know how much gets lost in the translation."

-- Home Economics Teacher

The Unified Plan for Occupational Education expresses considerable concern over the needs of bilingual, bicultural students. The Boston Public Schools Title VII program has received federal funds for implementation of career exploration programs for bilingual students. To date, Title VII staff have trained school bilingual staff, general subject area teachers, and selected Industrial Arts and Home Economics teachers at several schools in the principles of career education. The Title VII staff is interested in expanding their services to other bilingual groups including Greek, Haitian, Chinese and Portuguese students.

The needs of bilingual, bicultural students are especially critical in Industrial Arts and Home Economics since very few of these teachers are bilingual. In those schools where there is a special bilingual program, aides sometimes accompany students to Industrial Arts and Home Economics classes to assist with translation, but often they do not.

The number of bilingual students in Boston is increasing, and students need bilingual, bicultural teachers to teach them in their native language and to serve as role models. But recruiting bilingual teachers often proves difficult. In the meantime, Home Economics and Industrial Arts teachers need bilingual aides in their classrooms to ensure that students understand course content and to provide the necessary cultural perspective.

Recommendations:

Assign bilingual aides to work with Home Economics and Industrial Arts teachers, in course planning and during class periods, in those schools where there is significant bilingual enrollment.

Hire bilingual, bicultural Industrial Arts and Home Economics teachers in those schools where there is significant bilingual enrollment.

Industrial Arts and Home Economics

Many teachers, parents and students presently think of the activities and skills training provided by Industrial Arts and Home Economics as "career exploration." In actuality, career exploration, as discussed in previous sections of this report, involves a far broader concept than this. However, since Industrial Arts and Home Economics courses can provide the opening wedge for career exploration by giving students hands-on experiences, an in-depth examination of these areas is essential.

The findings and recommendations in this section focus on concerns of Industrial Arts and Home Economics teachers, but they are relevant also to the concerns of the entire school community and to the general area of career exploration.

Expansion and Diversification of Course Offerings

> "I have the World of Construction in six schools now, and I want to put it in more. We're also one of three school systems which now have the Megatech program. There's still the 'World of Manufacturing' and 'World of Transportation.' That's the direction of Industrial Arts."
>
> -- Assistant Director of Vocational Education and Industrial Arts
>
> "I've written proposals for new programs but all have not been funded. We need them to support new directions."
>
> -- Director of Home Economics
>
> "Special Education wants more space! Bilingual wants more space! Tell me where I have the room for all this and new courses in Industrial Arts and Home Economics!"
>
> -- Principal

The administration of the Industrial Arts and Home Economics departments are to be commended for their interest and accomplishments in expanding their course offerings. In Industrial Arts in particular some of the shop areas in the schools bear little resemblance to the "old wood and metals shops" we may remember from our own experiences. Some of the schools have implemented the "World of Construction" where students build a section of a house from scratch. Other schools have started a small engines course that includes such recent developments as the Wankel engine. In Home Economics, where equipment is not necessarily needed for course modification, teachers have added nutrition and consumer education to their courses.

The Boston Public Schools should continue to seek funding for new Industrial Arts and Home Economics courses so that students will learn principles and skills that are current with societal and technological developments. As Boston begins implementation of career education, the expansion of course offerings can provide students with more of the hands-on experiences which are part of career education.

In addition to the need to expand course offerings, there is also a need to compensate for the disparity of offerings among schools. Some schools, such as the Cleveland, have six Industrial Arts areas while others, like the Holmes, have only two. The disparity among school offerings in Industrial Arts is a function of transition, age of the building, space availability, size of the building, and teacher and administration initiative. However, the result is that some students miss opportunities open to their peers in other schools. When school space allows for only two Industrial Arts areas, these areas should be multi-purpose classroom areas. When a school offers only two courses, teachers should diversify their courses to include family living, nutrition, and consumer education. In fact, many teachers have begun to diversify their courses in the directions discussed here. Nevertheless, additional diversification is necessary to enable students to have a variety of experiences.

Students are generally enthusiastic about their experiences in Industrial Arts and Home Economics. In particular, students like "using their hands," "doing something practical," and "making projects they can bring home." Students would welcome the opportunity to explore additional areas in Industrial Arts and Home Economics.

Recommendations:

Promote expansion and diversification of Home Economics course offerings and content. Informal content, such as nutrition and consumer education, should be developed and instituted as formal course offerings. Teacher training and orientation sessions should be included as part of this process. Schools in particular need of diversification and expansion in Home Economics includes the Taft and the Cheverus.

Promote expansion and diversification of Industrial Arts course offerings and content. When space constraints prevent the allocation of additional space, the equipment in existing Industrial Arts shops should be diversified so that students have a variety of opportunities within the same classroom. In Industrial Arts, there is a critical need for upgrading of equipment and diversification at the Dearborn, Roosevelt, Michelangelo, Lewis and Champlain schools.

Curriculum

"I know all the concepts of child development, but could use some help in developing activities."

-- Home Economics Teacher

"When the equipment was stolen, I thought I'd take a break from my regular lesson plans and teach the students bricklaying. We bricked up the window the robbers came through."

-- Industrial Arts Teacher

Some Industrial Arts and Home Economics teachers show considerable ingenuity in developing projects for their classes. Many of the Industrial Arts teachers capitalize on their own industrial experience in designing projects for the students. In Home Economics, teachers have begun to diversify their course offerings, and show considerable flexibility in defining the content of their courses. Teachers within Home Economics tend on the whole to have fewer years of teaching experience and strikingly less industry experience than Industrial Arts teachers, and this information correlates with our observations that Home Economics teachers are, in fact, more interested in pursuing the theoretical aspects of their subjects.

While the efforts of Industrial Arts and Home Economics teachers in making their own decisions has resulted in a rich diversity of offerings, and while these teachers can and do develop their own course content, they would like some assistance in setting objectives and developing activities for their courses.

The Central Office of the Boston Public Schools' Home Economics Department has published a curriculum guide which has been well received by teachers. Developed by teachers, the guide is organized by concept, such as family living, and provides a modular curriculum format with suggestions for projects, resources and references, objectives, and relationships to other courses.

Industrial Arts teachers would welcome similar efforts which could provide guidelines for their courses. With the advent of career exploration, the curriculum guide could help teachers effectively relate their courses to careers. The guide could also prove of great value in coordinating middle school efforts with the high schools.

Recommendation:

Develop a curriculum guide for Industrial Arts courses. This guide should provide content outlines, course objectives, and suggested resources and references.

Communication within Schools

> "You can meet with all of the Industrial Arts teachers in the boiler room during the third period. They're all free then and that's where they meet together."
>
> -- Principal
>
> "I never get a chance to meet with the English and Social Studies teachers because I'm teaching when they're free."
>
> -- Home Economics Teacher
>
> "What we're talking about here is the English teacher beginning to talk to the guy in the shops who wears the green coat and is covered with sawdust."
>
> -- Principal

In most schools, there is a strong comaraderie within the Industrial Arts and Home Economics areas. Some teachers have been working together for well over ten years and have built up friendships that are common when people share the same interests and are in close proximity to each other in the same building. Many of these teachers are free during the same periods, and meet together informally. When the Industrial Arts and Home Economics departments are located near each other, such as at the McCormack, the comaraderie of one department extends to colleagues in the other department.

Among general subject area teachers, there seems to be little understanding of what teachers in Industrial Arts and Home Economics are doing. Since Industrial Arts and Home Economics teachers are usually in separate parts of the building, they generally stay there and do not meet with the subject area teachers.

This communication gap is further widened by the cluster system of scheduling which has been adopted by many of the middle schools. Under the cluster system of scheduling, approximately 100 students are assigned to a team of teachers representing English, Social Studies, Math, and Science, with these teachers making the decisions about how students spend their time in each of these areas. The cluster system is a step forward for general subject area teachers since they can meet together when their students are in the specialty areas such as Industrial Arts, Physical Education, and Home Economics. When the specialty teachers are free, however, the general subject area teachers are in class, and there is little opportunity for either formal or informal meetings of specialty and non-specialty teachers.

Scheduling procedures also contribute to making teachers in Industrial Arts and Home Economics feel as if they have no status in the school, since their courses are peripheral to the cluster schedule. In fact, some general subject area teachers think of Industrial Arts and Home Economics, or Art, as "where we ship students to," without much consideration of what students are learning there. In addition, in some schools students who are considered discipline problems or "not motivated" are assigned to ten periods of Industrial Arts or Home Economics, which makes students and teachers alike think of these subjects as "dumping grounds."

The implementation of career exploration demands that teachers of all subject areas work together in order to assist students in career planning. Career education can be one of the mechanisms to help all teachers gain a better understanding of the importance of what they all do in their classes. Moreover, the focus on career exploration can contribute to improved status for teachers in Industrial Arts and Home Economics since many of them have had industrial experience and are viewed by the other teachers as knowledgeable about careers.

Recommendation:

In each school, teachers in general subject areas should meet regularly with teachers in Industrial Arts and Home Economics in order to plan career exploration activities and develop other possible areas of collaboration.

Communication with Teachers in Other Schools

> "What with desegregation and bilingual, 766 and 622, I would really like to meet with teachers from other schools to find out what they're doing. Maybe they can tell me something about these kids that will help my classes be more interesting."
>
> -- Industrial Arts Teacher

Teachers in both Industrial Arts and Home Economics have an interest in improving their courses, and do meet together regularly within the school on an informal if not a formal basis. However, teachers would like the opportunity to interact with their colleagues in other schools. These meetings would provide them with the opportunity to "compare notes" and to find out about specific projects which other teachers have found successful that could be replicated in their schools.

Obviously, there have been significant changes in the middle schools during the past five years. Desegregation, changes from junior high schools to middle schools, dramatic increases in bilingual enrollment, and new state legislation have all changed the student population and school administrative policies. These changes have meant significant adjustments for teachers as well. Meetings could provide teachers with the ideas and support needed to help them make these adjustments.

Recommendation:

Institute meetings six times a year for teachers of Industrial Arts and Home Economics. These meetings should be organized by area, such as Foods or Graphic Arts, and should focus on current developments in the field.

Equipment and Supplies

"Give me an offset press! Just give me an offset press and I'll turn this course around."

-- Industrial Arts Teacher

"When I first came here, the room was not set up and there was hardly any equipment. I went to see teachers in other schools who taught drafting and I took the equipment and materials they didn't need."

-- Industrial Arts Teacher

"Whenever the machines break down, I just fix it myself."

-- Home Economics Teacher

"I've got a whole closetful of equipment just sitting there, but I can't get anyone to install it -- there's no funds for installation."

-- Industrial Arts Teacher

In general across the system, teachers view the equipment in Industrial Arts as either outdated, inoperative or more up-to-date than the teachers who use it. In particular, the Graphic Arts teachers almost unanimously indicate that their equipment is antiquated and that they are concerned that students are not gaining experiences which are common in industry.

The present ordering system in Industrial Arts requires that teachers anticipate their needs one to two years in advance. Consequently, when teachers are reassigned to a school, or when a new program is installed, it is common to find no equipment or materials available for the students. Teachers frequently bring in equipment from home and borrow materials from friends in other schools. Present regulations also require that most major purchases be put out to bid. While this practice does allow for competition, and an assessment of offerors' bids, it also slows down delivery of equipment to schools.

Recommendations:

Initiate a plan for the systematic replacement and upgrading of equipment.

Replace outdated equipment in graphic arts areas with offset and darkroom equipment for current methods of composition.

Improve ordering procedures in Industrial Arts so that certain items can be ordered from an approved list of suppliers.

The problem with equipment extends beyond age and ordering to problems of installation, repair, and inventory. Teachers frequently cite "equipment in storage," or "equipment in the closet but not installed." The classrooms of Home Economics teachers often have stoves and sinks in the middle of the area which prevents flexibility in classroom activities.

Many Industrial Arts and Home Economics areas also lack sufficient electrical outlets and, when new equipment arrives, have no place to

plug the equipment in. The lack of electrical outlets not only prevents new equipment installation but also has significant impact on the courses in other ways. For example, teachers do not have the flexibility and mobility in their classrooms that they would prefer, and teachers are limited in their ability to utilize audiovisual materials.

Equipment problems do not seem to be as critical in Home Economics as they do in Industrial Arts since teachers in this area are more dependent on supplies and materials than on equipment. Each school receives an allocation for consumable items, such as food or clothing, but teachers would like to have more flexibility in ordering. At present, each teacher purchases food items from the supplier awarded the food supplies contract. Instead, teachers would prefer discretionary funds that would enable them to shop locally and purchase "ethnic" foods. In the clothing area, teachers would like a larger allowance for the purchase of materials in order to provide a wider variety of projects and to assist those students who are not able to afford their own fabrics. While the Home Economics Department does provide some fabric, teachers feel that more is needed since many students cannot afford to purchase their own.

Another equipment problem cited by teachers is the difficulty of arranging for repairs. Frequently, teachers make repairs themselves. Not all teachers, however, are able to make proper repairs, especially when the equipment is old. The present procedure for equipment installation and repair requires the completion of "Form 20," which is then sent to the department head at the Central Office for authorization, and to the Planning and Engineering Department for scheduling. Although the Industrial Arts and Home Economics administrators want to be responsive to the teachers, the Planning and Engineering Department may have other priorities that delay intallation of, or repairs to, equipment.

Recommendations:

Allocate $2,000 for each middle school to the districts for the purchase of equipment and materials for Home Economics and Industrial Arts. This fund would provide

a needed resource for the purchase of equipment and materials not anticipated in advance, and for repairs to or installation of equipment.

Rearrange the Foods rooms in most middle schools to remove fixed stoves and sinks from the center of the rooms.

Install three electrical outlets in each Industrial Arts and Home Economics classroom. This will allow maximum utilization of equipment on hand and audio-visual aids.

The present inventory system in Industrial Arts and Home Economics also contributes to teacher dissatisfaction with equipment. The inventories reflect not only what is on hand but also what is on order. Given the previously mentioned problems in ordering and installation, these inventories portray a more favorable situation than that which exists in reality.

Recommendation

Modify present inventory forms to show what is on hand and installed, on hand but not installed, and on order. This will permit schools to assess materials and equipment needs realistically, as well as assist both teachers and central office administrators in their planning efforts.

CAREER EXPLORATION PROGRAM DESIGN

Introduction

Career exploration should be an integral part of the total curriculum on the middle school level. It can provide students with information on a wide range of existing and emerging occupations, give all students an opportunity to explore occupations which are of interest to them, and provide them with the self-assessment, career decision-making and career planning processes necessary for career development.

The Unified Plan defines career exploration as a program which provides students with the opportunity to observe and participate in a variety of work-related situations in order to determine whether they wish to pursue certain careers and to ascertain their suitability for particular occupations. The purpose of career exploration programs is not to develop saleable skills -- it is to provide students with an experiential base for choosing skills training programs, and careers, in the future. Further, the Unified Plan states:

> "Exploratory clusters offered in grades six through eight will be required for all students, in all schools. There will be three groups of occupational clusters: Industry-Related, Food-Home Services-Health Related and Business-Distribution-Government Related. Every student will receive instruction in each of these three groups of clusters."[1]

The program design presented in this section is excerpted from the "Detailed Design for Implementation of 1976-1977 Career Exploration in the Middle Schools of the Boston Public Schools", which was submitted

[1] Boston Public Schools and Massachusetts Department of Education, "Unified Plan for Occupational and Vocational Education", September 1975, p. 12.

as an interim report of this project on June 9, 1976 and submitted by the Boston Public Schools for state funding. The "Detailed Design" was based upon several efforts. First, the Career Exploratory Task Force, composed of a broad spectrum of Boston Public Schools and State Department of Education personnel, parents and career education consultants, began meeting in February 1976 to identify career exploratory needs and possible models of implementation. Second, the Vocational Remedy Component of ESAA, held a series of workshops for administrators, parents, and students to determine program guidelines. Third, the national survey and the survey of schools conducted by the American Institutes for Research, as part of this project, assisted in the development of program designs which would be in keeping with national trends and appropriate for the Boston Public Schools.

Career education demands a new level of collaboration, planning and joint program development on the part of all teachers and administrators. All phases of the middle school curriculum can be involved in career exploration. Subject area teachers, industrial arts and home economics teachers, guidance counselors and principals must work together to implement career exploration and infuse a new and strengthened understanding of the world of work into all learning activities.

Program Objectives and Guidelines

Career exploration at the middle school level must emphasize an investigation of the large number of occupational choices available to students. Career exploration programs in Boston should aim to enable students to:

- Identify their interests, values and abilities related to occupations;
- Explore through in-class and out-of-class activities the wide range of occupations, industries and employers that exist;
- Identify the training and educational requirements for occupations which are of interest to them;

- Identify the decisions required for career planning;
- Perform certain basic tasks required for employment in selected occupations; and
- Understand the impact of work on personal satisfaction and lifestyle.

The Unified Plan specifies that the exploratory programs be related to three specific clusters, or groupings, of occupations:

- Industry-Related;
- Food-Home Services-Health Related; and
- Business-Distribution-Government Related.

Every student is to receive instruction in each of these three groups or clusters. These three clusters are intentionally broad in scope so that students will be able to examine the full range of employment possibilities. Chart 4-1 indicates the occupational areas which are included in each of these three clusters.

Career exploration in each of these three clusters can be an integral part of those subjects that are already taught at the middle schools. Students need to understand the relationships between career preparation and school, and the existing curriculum of Boston's middle schools needs to be informed by career-related information, activities, and materials.

CHART 4-1

OCCUPATIONAL AREAS WHICH ARE INCLUDED IN THE THREE CLUSTERS SPECIFIED IN UNIFIED PLAN

Cluster	Occupational Areas
Industry-Related	Construction Manufacturing Transportation Natural Resources & Energy Environment
Food-Home Services-Health Related	Health Hospitality and Recreation Personal Services Consumer Affairs
Business-Distribution-Government Related	Business and Office Occupations Marketing and Distribution Public Services

Career exploratory programs must not supplant what students and parents presently view as being important aspects of the school curriculum. Nor should career exploratory programs perpetuate any stereotypes associated with occupations. All career exploratory programs in Boston must follow the following guidelines:

1. Career Exploratory programs will offer a balance of conceptual and hands-on experience.

2. Self-assessment, self-discovery and knowledge of career planning will form a significant portion of career exploratory activities.

3. The utilization of community resources, through guest speakers and field trips will be an important part of each school's program.

4. Career exploration activities and basic skills, such as mathematics and reading, will reinforce each other to make both more meaningful for students.

5. Career exploration programs will be non-stereotyped by race, ethnic background, or sex.

6. All components, activities and classes will be fully co-educational as well as racially and ethnically mixed.

7. All students will be exposed to the full range of occupations for each of the three clusters.

8. Bilingual students will be offered the same opportunities as other youngsters.

Options for Program Design

Career Exploration programs must build from the already substantial strengths of the school system in career-related areas to the broader goals of career exploration as addressed in the Unified Plan. Although considerable modification of existing program directions is required, skilled, experienced, and interested teachers in a variety of subject areas are to be found throughout the school system to initiate the process of change.

Boston middle schools differ considerably in terms of enrollment, course offerings and scheduling patterns. Other factors, such as ethnic makeup and proportion of bilingual, bicultural students, also vary. For these reasons, one program design for all schools would be inappropriate. Therefore, various options have been suggested. The options described below represent scheduling and organizational options for implementation of career exploratory programs. These options do not place additional schedule burdens upon administrators and teachers. Instead, they

capitalize upon the strengths of existing programs which can be modified to focus on career exploration.

Option A: Total Infusion

This option involves teachers from all subject areas including Industrial Arts, Home Economics, Social Studies, English, Math, Science and Guidance. The program will be organized around generic career education principles, such as career planning and self-assessment. As students study these generic career education principles, their study is related to each of the three occupational clusters. For example, as students study career decision-making, they relate career decision-making to employment opportunities in the three clusters.

Option B: Modified Curriculum

This option also involves teaching staff from Industrial Arts, Home Economics, Social Studies, English, Math, Science and Guidance. Existing Industrial Arts and Home Economics courses will be modified to reflect the full range of careers in the Industry-Related and Food-Home Services-Health Related clusters, respectively. The Guidance Department will have responsibility for assisting students with self-assessment and occupational information. English, Social Studies, Math and Science teachers at all grade levels will be responsible for certain generic career education principles and exploration of the Business-Distribution-Government cluster.

Option C: Expanded Curriculum

This option involves teachers from Industrial Arts, Home Economics, English, Social Studies, Math, Science and Guidance. Existing Home Economics and Industrial Arts courses will be modified to reflect career development principles. In addition, two new courses will be added: Career Exploration in Industry-Related occupations and Career Exploration in Food-Home Services-Health Related occupations. These courses will be

required for students at grade 6, 7 or 8 and will focus on career exploratory activities. The English, Social Studies, Math, and Science teachers, along with Guidance Counselors, will be responsible for infusion of generic career education principles and exploration of occupations in the Business-Distribution-Government cluster.

Option D: Supplemented Staffing

This option involves teachers from Industrial Arts, Home Economics and Guidance. In addition, a specialist in Business-Distribution-Government Related Careers will be added to the school staff. The Industrial Arts and Home Economics teachers can organize instruction for career exploration as proposed in either Option B or Option C. The Business-Distribution-Government Related specialist will offer a course entitled Career Exploration in Business-Distribution-Government Related Careers.

Services Necessary for Implementation

Certainly, implementation of career exploration programs require a strong commitment from the central office administrators and building principals. If career exploration is going to work in Boston, the school department administrative personnel must give career exploration high priority and provide support and encouragement to teachers. Organization and detailed planning, coordinated across the city and yet specific to the various needs of each school, is essential to achieve the goals of career exploration implementation.

Certain additional resources are also necessary to successfully implement career exploration. These resources include:

1. A Special Assistant for Career Exploratory Programs, with overall responsibility for program organization and coordination.

2. Selection and Development of Curriculum Materials.

It is of primary importance that the curriculum materials be able to serve as the link between existing programs and the goals of career exploration. Materials should be reviewed by teachers, administrators and parents to insure appropriateness to the Boston schools and adherence to the guidelines of Chapter 622 (discrimination), Chapter 766 (special needs) and Chapter 71-A (Bi-lingual).

3. Summer and Fall Preparation of Teachers, Counselors, Parents and Administrators

School staff will need additional training in order to implement career exploration. The preparation should include orientation and introduction to career education, training in the use of materials and development of plans for implementation. The training should involve teachers from all subject areas, (including bilingual and special needs), parents, counselors and administrators. In addition to training prior to implementation, training should continue when teachers actually begin implementation.

4. Career Exploration Coordinators, a half-time position which involves responsibility for implementation and coordination of career exploration activities for a school.

5. Translation of Materials, in order to make career education programs equally accessible to bilingual students.

Plans for Implementation

On June 23, 1976, the Massachusetts Board of Education, on the recommendation of the Bureau of Equal Education Opportunity, awarded the Boston Public Schools almost $500,000 to begin the implementation of Career Exploration. These funds were awarded on the basis of the

"Detailed Design for Implementation of 1976-1977 Career Exploration in Middle Schools of The Boston Public Schools". The funds are to be used to implement some aspect of Career Exploration in every middle school in September 1976 and include allocation for program administration, teacher training, translation of materials, purchase of materials, payment for participants in the training and evaluation of the career exploration program.

The goals for this first phase of implementation are to:

1. Fully Implement Career Exploration in twelve middle schools;

2. Partially Implement Career Exploration Programs in fourteen middle schools, with full implementation planned for September 1977.

Twelve middle schools will be demonstration schools for pilot projects in career exploration. These "Pilot" schools, shown in Table 4-2 on the following page, were selected by the Associate Superintendent for Occupational Education upon consultation with the middle school principals and the following criteria:

- at least one school from each district;
- proportion of bilingual students;
- willingness of principals to participate; and
- total enrollment.

At each pilot school, a team of thirteen individuals including teachers, administrators and parents will participate in preparation and training during the summer and fall. This team will select materials and equipment and be responsible for involving all school staff in Career Exploration. Each of the pilot schools will receive $12,500 for the purchase of curriculum materials and equipment. In addition, one staff

member, released from classes one-half time, will be appointed Career Exploration Coordinator with overall responsibility for coordination of Career Exploration activities within the pilot school.

TABLE 4-2

PILOT SCHOOLS FOR CAREER EXPLORATION PROJECT

SCHOOL	DISTRICT
Taft Edison	1
Curley	2
Irving Lewenberg	3
Thompson	4
Cleveland	5
McCormack	6
Timilty	7
Barnes Michelangelo	8
Mackey	9

Fourteen middle schools will implement only aspects of Career Exploration in September. At these "partial implementation schools," shown in Table 4-2, one individual will participate in summer and fall training. This person will be responsible for selection of $1,000 in materials and equipment, utilization of career education materials in his/her classroom, and planning for further implementation of Career Exploration.

Mr. James Mahoney has been appointed Special Assistant - Career Exploratory programs and has coordinated the necessary efforts for selection of staff and contractors for training and evaluation. During August 2-10, 1976, participants will attend training sessions at English High School conducted by the Massachusetts Center for Occupational Education, which was awarded a contract for training, technical assistance, and purchase of materials. The American Institutes for Research has been awarded a contract for program evaluation and will submit a final report in December 1976 which will assess the extent of implementation and provide guidelines for future direction.

Additional funds will be available after September from the Massachusetts Bureau of Equal Educational Opportunity for further implementation of Career Exploration in the middle schools. The guidelines for use of these funds are currently being developed.

TABLE 4-3

MIDDLE SCHOOLS SELECTED FOR PARTIAL IMPLEMENTATION

OF CAREER EXPLORATION IN 1976-1977 *

Champlain

Cheverus

Dearborn

Edwards

Gavin

Holmes

King

Lewis

Mann

Rogers

Roosevelt

Shaw

Wilson

* An additional middle school from District 1 will be named at a later date.

SCHOOL PROFILES

Each middle school in Boston offers its own unique profile of career-related resources and needs. This section of the report is intended to highlight some of those individual strengths, gaps, and weaknesses and to note the specific features which define each school's program.

Description

The individual school profiles are compiled from personal interviews in the spring of 1976 with principals, teachers, counselors and students. The interviews and in-school observations were designed to survey the existing career-related resources in each middle school. Although the interviews focused on teachers, courses, and equipment in Industrial Arts and Home Economics, information was also sought on other career-related activities.

Subsequently, an attempt was made to verify information for each school with the principal of the school. The constraints of time and the availability of personnel made it impossible to interview and verify information with everyone. Thus data on every school are extensive but not exhaustive.

The direct observations and comments of teachers have been compiled in the school profiles which follow. The items listed reflect each staff's own notion of what they have accomplished and what they would like to accomplish.

The information for each school is organized into three categories:

- Features Noted
- Needs Expressed
- School Charts

Features Noted includes items which are either directly related to career exploration, suggest an environment receptive to career education or which indicate particular strengths in Home Economics or Industrial Arts. For example, we have cited a Foods course in which the teacher has already begun to develop units in consumer education, theory of nutrition, and budgeting. Even if she has not yet had the opportunity or materials available to relate her course directly to the world of work, her diverse updated curriculum is a solid foundation from which to begin exploring today's home and health-related careers.

Needs Expressed lists those requests of teachers or administrators which would expand career-related activities. It also includes needs related exclusively to the Home Economics or Industrial Arts curriculum which reflect the teacher's own perception of what hinders his or her performance. The prime purpose of the section is to identify factors which interfere with students receiving the best program possible. The intent is to locate problems which must be solved, though everyone involved may have different perspectives on how to do that.

The Charts for each school summarize some of the demographic data for that school, particularly that relate to its resources in Home Economics and Industrial Arts. The statistics in these charts come directly from Boston school personnel, except as otherwise noted.[1]

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[1] Construction dates: Department of Planning and Engineering.

Enrollment and Attendance figures: Department of Statistics and the the Attendance Unit of the Boston School Dept.

Average Enrollment was derived from figures submitted monthly by each school, and represent an average for the year. Racial percentages are based on a system-wide check of enrollment in the second week of March. Percentages by sex are based on the average enrollment for the month of March.

Summary of School-Based Data on Home Economics and Industrial Arts Programs

The range of programs in the schools is broad (Table 5-1). The number of course offerings -- the actual number of learning opportunities available to students -- within Home Economics and Industrial Arts varies significantly. The smallest schools, predictably, are limited to two offerings -- a general Home Economics course, along with Drafting at the Champlain and Woodworking at the Cheverus. Larger schools such as the Irving and the Cleveland offer as many as 8-10 courses. The large number of offerings is confirmation of the current emphasis in Boston on diversification. Most schools offer from four to seven different courses. As Table 5-2 indicates, however, there is not a high correlation between the number of offerings in the school and the size of the student body. The Timilty, with just 487 students, offers seven different courses, while the Roosevelt, with 493 students, has only four. Thus the ratio of course offerings to students varies significantly across the system. Seven course offerings for 487 students at the Timilty translates into a ratio of 1:70, while the Roosevelt has a ratio of 1:123. The use of course offerings as an indicator of the variety of subject matter available does tend to obscure the important steps which have been taken within the two Home Economics areas of Food and Clothing to diversify content. However, teachers are constrained by the courses they are expected to teach. This data appears to argue for streamlining the procedures for instituting a new course so that innovative teachers may begin to carve out a place within school and departmental structures for new areas.

Generally, each teacher in Home Economics and Industrial Arts is responsible for a single course, so ratios of staff to students is also very broad. Several factors affect the actual ratio of teachers to students within a school: classroom attendance, the number of periods of Industrial Arts and/or Home Economics per student per week, and the number of periods per week each teacher has available for classes as opposed to

	HOME ECONOMICS								INDUSTRIAL ARTS										SPECIAL PROGRAMS	
	Arts & Crafts	Child Care	Clothing	Consumer Education	Foods	Health	Home Economics (general)		Ceramics	Crafts & Trades	Drafting	Electricity	Graphics	Machine Shop	Metals	Power Technology	Woodworking	World of Construction	Career Labs	
BARNES			X		X							X	X	X		X	X	X		
CHAMPLAIN							X				X									
CHEVERUS							X										X			
CURLEY			X		X						X		X		X		X			
CLEVELAND		X	X		X						X	X	X		X		X	X		
DEARBORN			X		X						X	X	X		X		X	X		
EDISON			X		X							X	X		X		X			
EDWARDS			X		X							X	X		X		X			
GAVIN			X		X						X	X	X		X	X	X			
HOLMES			X		X								X				X	X		
IRVING			X	X	X	X			X		X	X	X		X		X			
KING			X		X						X		X		X		X	X		
LEWIS			X		X							X					X			
HORACE MANN			X		X					X							X			
JACKSON-MANN																			X	
LEWENBERG			X		X						X	X	X				X			
MACKAY			X		X										X		X			
McCORMACK	X		X		X						X	X			X		X	X		
MICHELANGELO			X		X							X					X			
ROGERS			X		X						X			X	X		X			
ROOSEVELT			X		X						X						X			
SHAW			X		X						X		X				X			
TAFT			X		X						X	X	X				X			
THOMPSON			X		X							X	X				X	X		
TIMILTY			X		X		X					X	X		X		X			
WILSON			X		X						X	X	X		X		X			

TABLE 5-1. HOME ECONOMICS AND INDUSTRIAL ARTS COURSE OFFERINGS

SCHOOL	NUMBER OF COURSE OFFERINGS	TOTAL ENROLLMENT	RATIO
Horace Mann	4	263	1:66
Edwards	6	461	1:77
Timilty	6	487	1:81
Michelangelo	4	332	1:83
Dearborn	4	330	1:83
King	7	587	1:84
Irving	10	1024	1:102
Barnes	8	830	1:104
McCormack	7	758	1:108
Thompson	6	666	1:111
Holmes	5	553	1:111
Lewis	4	446	1:112
Champlain	2	225	1:113
Gavin	8	943	1:118
Mackey	4	484	1:121
Roosevelt	4	493	1:123
Taft	6	781	1:130
Wilson	7	938	1:134
Lewenberg	6	801	1:134
Edison	6	830	1:138
Curley	6	928	1:155
Rogers	6	953	1:159
Cleveland	9	1521	1:169

TABLE 5-2. RATIO OF COURSE OFFERINGS TO SCHOOL ENROLLMENT

administrative activities. Yet the gross figures -- total number of Home Economics and Industrial Arts staff against total enrollment -- are significant. At the Edwards there is one teacher for every 58 students, while at the Holmes there is one for every 138 students. Table 5-3 specifies the ratio for each school.

Each middle school arranges its own student programs in Home Economics and Industrial Arts. Wherever possible, we have included for each school the method of assignment, course duration, and number of periods per week for each student. Most schools have adopted a general policy of scheduling these courses for double periods. These double periods provide the time necessary to demonstrate or prepare a project and then clean up after students have worked on them. The current focus in Home Economics and Industrial Arts on student project requires such an arrangement. Teachers, however, recognize the difficulty of sustaining student interest and enthusiasm when their courses meet relatively infrequently.

Only four schools in the system schedule all students for the same number of periods of Home Economics and Industrial Arts. Generally, schools distinguish in their programming between the time commitment required for so-called "academic" and "general" students. These distinctions reflect and reinforce the notion that "Industrial Arts and Home Economics are not really for everybody" and tend to perpetuate the assumption that these courses are strictly vocational rather than career-related. In six of the schools, some students take from eight to twelve periods of Home Economics and Industrial Arts per week. This represents approximately one third of their time each week.

Only a small number of schools provide for student or parent input into course assignment. A number of teachers have expressed the view that students would be better motivated if they were more involved in the selection of their own programs.

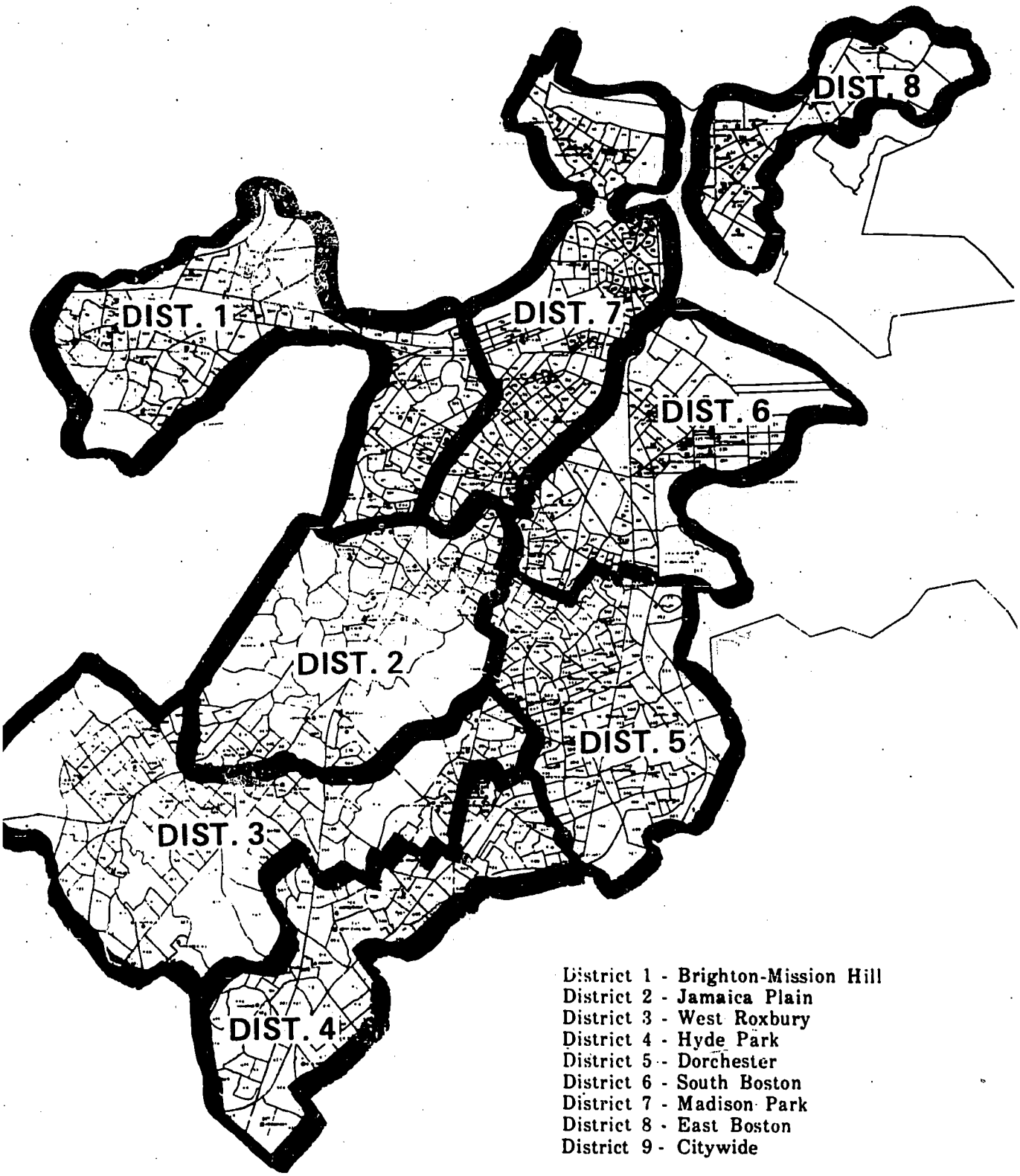
SCHOOL	TOTAL HOME ECONOMICS/ INDUSTRIAL ARTS STAFF	TOTAL ENROLLMENT	RATIO
Edwards	8	461	1:58
Timilty	8	487	1:61
King	9	587	1:65
Horace Mann	4	263	1:66
Mackey	6	484	1:81
Dearborn	4	330	1:82
Michelangelo	4	332	1:83
Thompson	8	666	1:83
McCormack	9	758	1:84
Gavin	11	943	1:86
Curley	10	928	1:93
Irving	11	1024	1:93
Lewenberg	8	801	1:100
Barnes	8	830	1:104
Edison	8	830	1:104
Wilson	10	938	1:104
Champlain	2	225	1:112
Lewis	4	446	1:112
Taft	7	781	1:112
Shaw	6	703	1:117
Rogers	8	953	1:119
Roosevelt	4	493	1:123
Holmes	4	553	1:138
Cleveland	11	1521	1:152

TABLE 5-3. RATIO OF HOME ECONOMICS AND INDUSTRIAL ARTS STAFF TO TOTAL STUDENT ENROLLMENT

Conclusion

The diversity of Boston's middle schools offers opportunities in many areas, but makes it difficult to describe a "typical" or average middle school. For those who work daily in or with these schools the emphasis is on the uniqueness of each building, each principal, each staff.

Each Boston middle school is a self-contained community with its own resources and problems which must be solved on a school-by-school basis. The information provided for each school is intended to facilitate this process.



District 1 - Brighton-Mission Hill
District 2 - Jamaica Plain
District 3 - West Roxbury
District 4 - Hyde Park
District 5 - Dorchester
District 6 - South Boston
District 7 - Madison Park
District 8 - East Boston
District 9 - Citywide

BOSTON MIDDLE SCHOOLS

District 1

Thomas A. Edison

William Howard Taft

District 2

Mary E. Curley

Lewis

Theodore Roosevelt

District 3

Washington Irving

Solomon Lewenberg

Robert Gould Shaw

District 4

William Barton Rogers

Frank V. Thompson

District 5

Champlain

Grover Cleveland

Oliver Wendell Holmes

Woodrow Wilson

District 6

Dearborn

Patrick F. Gavin

John W. McCormack

District 7

Clarence E. Edwards

Michelangelo

James P. Timilty

District 8

Joseph H. Barnes

Cheverus

District 9

Jackson-Mann

Martin Luther King, Jr.

Charles E. Mackey

Horace Mann

Thomas A. Edison

Located in Brighton, the Thomas A. Edison Middle School is a classic example of the granite public edifices constructed in the 1930s. In 1975-76, an annex was leased to serve the large enrollment of special needs students. Industrial Arts and Home Economics teachers are experienced and proud of their ability to teach students the basic skills associated with their courses. They are not certain how to integrate new career-related approaches into their curriculum. The Guidance Department, however, has taken a key role in providing planning and resource development in the area of career education.

FEATURES NOTED

Courses and Programs

- Innovative approaches within Industrial Arts to students' lack of basic academic skills, particularly in reading.
- Effort to coordinate middle school Industrial Arts/ Home Economics program with high school offerings.
- Site school for "Bread and Butterflies" pilot guidance program.

Staff

- Subject area teachers, particularly in math and science, interested in integrating career education principles into their courses.

Other

- Guidance Department has secured funding for a Career Education Resource Center to be instituted in 1976-77.

NEEDS EXPRESSED

Facilities, Equipment, and Supplies

- Increase security and storage in Home Economics Department.
- Acquire a new refrigerator for Home Economics Department.
- Repair or replace broken sewing machines.
- Increase lighting fixtures in Industrial Arts/ Home Economics classrooms.

Other

- Provide administrative coordination and support in order to facilitate field trips.

THOMAS A. EDISON
60 Glenmont Road
Brighton 02135

783-1225

Angelo A. DiMattia
Principal

District 1

Constructed in 1932

AVERAGE ENROLLMENT: 830

BLACK: 36%
WHITE: 33%
HISPANIC: 23%
OTHER: 7%

GIRLS: 49%
BOYS: 51%

AVERAGE ATTENDANCE: 73%

Course	Teacher	Years in Present School	Years in Boston Schools	Relevant Experience
Clothing	Kathleen Harrington		35	
Clothing	Elicia Kelly		26	Home Economics administration, 1 year
Foods	Maura Hennigan		1	Registered dietician
Foods	Sara Malatsky		28	
Electricity	Joseph Zambello			
Graphic Arts	Peter Leofanti	6	6	Press foreman, 23 years
Metals	Joseph Tempesta	3	7	Tool and die maker, 18 years
Woodworking	John Robinson			

EXTENT OF CO-EDUCATION IN INDUSTRIAL ARTS AND HOME ECONOMICS:

Less than 10% cross-enrollment.

COURSE SCHEDULING IN INDUSTRIAL ARTS AND HOME ECONOMICS:

Assigned by cluster;
Semester rotation: General students - 2 double periods/week;
Academic students - 1 double period/week.

BILINGUAL PROGRAM:

Program in operation for 83 Spanish-speaking students.

GUIDANCE STAFF: 2 GUIDANCE/STUDENT RATIO: 1:415

William Howard Taft

The Taft School, located in Brighton, is the oldest middle school in Boston. The building is in poor condition and there are serious problems in maintaining order within the school. Given these constraints, courses within Home Economics and Industrial Arts have undergone few revisions in recent years and remain primarily focused on manual skill development. The Guidance Department, however, has compiled materials and information on careers, and the staff and administration are beginning to explore ways to use community resources to enrich career-related course offerings.

FEATURES NOTED

- Guidance Department has developed resources in career information, equipment, and materials.
- Career Fair sponsored by Guidance Department.

NEEDS EXPRESSED

Facilities, Equipment, and Supplies

- Revise layout of foods room to accommodate students better.
- Repair and maintain sewing equipment.
- Old platen press requires frequent repairs.
- Install secure storage space.

Interest in Curriculum Expansion

- Curriculum materials for electricity courses.
- Basic home repair course.

Other

- Develop a feasible plan for cooperation with three nearby medical institutions in developing career education programs.
- Establish communication with local industry.

WILLIAM HOWARD TAFT
20 Warren Street
Brighton 02135

782-0080

Raymond Baskin
Principal

District 1

Constructed in 1895

AVERAGE ENROLLMENT: 781

BLACK: 41%
WHITE: 36%
HISPANIC: 13%
OTHER: 8%

GIRLS: 47%
BOYS: 53%

AVERAGE ATTENDANCE: 77%

Course	Teacher	Years in Present School	Years in Boston Schools	Relevant Experience
Clothing	Patricia Evans	2	4	
Clothing	Shirley Lovett	2	2	
Foods	Joan Solli	1	5	International hostess, 10 years
Drafting	Robert Hayes	1	6	
Electricity	Joseph MacFarlane	10	13	
Graphic Arts	Elaine Graves	2	2	
Woodworking	James Mawn	4	14	Teaching "special class," 4 years

EXTENT OF CO-EDUCATION IN INDUSTRIAL ARTS AND HOME ECONOMICS:

Less than 10% cross-enrollment.

COURSE SCHEDULING IN INDUSTRIAL ARTS AND HOME ECONOMICS:

Elective.
Sixth grade: full-year course - 5 double periods/week.
Seventh and eighth grades, trimester rotation:
General students - 2 double periods/week;
Academic students - 1 double period/week.

GUIDANCE STAFF: 2

GUIDANCE/STUDENT RATIO: 1:390

Mary E. Curley

The Curley is a relatively large middle school located in Jamaica Plain. The building is nearly 50 years old but well maintained. In recent years, the school's learning environment has shown a major improvement, with personnel the key factor in current programs. There is strong support within the administration for both the implementation of career education and the continuation of high standards in basic skills instruction. While equipment and facilities are adequate, teachers are eager to develop new curricula, new approaches, and new methods for their courses. For example, one of the key areas for future development at the Curley is coordination between academic areas and the Industrial Arts/Home Economics program.

FEATURES NOTED

Courses and Programs

- Home Economics has conducted field trips to City Hall, "Where's Boston?," and the New England Flower Show.

Staff

- Industrial Arts teachers have worked with the Math Department to institute lesson plans which integrate math and industrial arts skills.

Other

- Effective administration; principal has been one of the key people in designing city-wide career exploration programs for 1976-77.

NEEDS EXPRESSED

Staff

- Allow for additional collaboration with Industrial Arts and Home Economics teachers.

Other

- Eliminate three-period classes for Industrial Arts/ Home Economics courses; teachers report student attention spans are too limited to make effective use of this block of time.

MARY E. CURLEY
493 Centre Street
Jamaica Plain 02130

524-2020

Daniel E. Kearns
Principal

District 2

Constructed in 1931

AVERAGE ENROLLMENT: 928

BLACK: 41%
WHITE: 34%
HISPANIC: 25%

GIRLS: 47%
BOYS: 53%

AVERAGE ATTENDANCE: 75%

Course	Teacher	Years in Present School	Years in Boston Schools	Relevant Experience
Clothing	Dorothy Dempsey	27	30	Industrial sewing, 30 yrs.
Clothing	Candace Storm	2	3	Industry, 3 years
Foods	Patricia Lampkin	2	2	
Foods	Barbara Ridge	2	2	Dietician, 2 years
Foods	Barbara Walz	2	2	Bilingual (Spanish/ English)
Drafting	Harold Nasson	7	7	Design Engineer, 14 yrs.
Drafting	James Donovan	2	2	Trained apprentices, 25 years; Structural Engineer supervisor, Navy Yard, 5 years
Graphic Arts	Daniel Joyner	4	4	Industry, 2 years
Metals	James Costello	2	7	Machinist, 14 years
Woodworking	Hugo Rizzutto	3	4	

EXTENT OF CO-EDUCATION IN INDUSTRIAL ARTS AND HOME ECONOMICS:

Full cross-enrollment.

COURSE SCHEDULING IN INDUSTRIAL ARTS AND HOME ECONOMICS:

Assigned by cluster;
Semester rotation; 2 double periods/week for all students.

BILINGUAL PROGRAM:

Model Bilingual Program for 75 Spanish-speaking students.

GUIDANCE STAFF: 3 GUIDANCE/STUDENT RATIO: 1:309

Lewis

LEWIS
131 Walnut Avenue
Roxbury

427-4546

John Mullen
Acting Principal

District 2

Constructed in 1912

AVERAGE ENROLLMENT: 446

BLACK: 62%
WHITE: 34%
HISPANIC: 4%

GIRLS: 50%
BOYS: 50%

AVERAGE ATTENDANCE:

Course	Teacher	Years in Present School	Years in Boston Schools	Relevant Experience
Clothing	Anne Guiney		3	
Foods	Grace Barr		10	
Electricity	Joseph Paulson		2	
Woodworking	Robert Huether	3	4	Electrical Engineer, 7 years

EXTENT OF CO-EDUCATION IN INDUSTRIAL ARTS AND HOME ECONOMICS:

COURSE SCHEDULING IN INDUSTRIAL ARTS AND HOME ECONOMICS:

Assigned by cluster;
Trimester and semester rotation: General students - 2 double periods/week;
Academic students - 1 double period/week.

GUIDANCE STAFF: 1

GUIDANCE/STUDENT RATIO: 1:446

Theodore Roosevelt

The Roosevelt Middle School, located in Roxbury, is currently overcrowded and lacks adequate facilities. There is a strong need in Industrial Arts and Home Economics for substantial improvement in facilities and equipment. Subject area teachers show unusual interest in career-related programs, but they will require additional administrative support and leadership in coordinating their planning.

FEATURES NOTED

Courses and Programs

- Guidance department held Career Day for eighth graders
- Subject area teachers, particularly in math and English, currently integrating career information into their courses
- Informal cooperation among subject area teachers and Industrial Arts/Home Economics, e.g., between Math and Clothing, as well as English and Foods

Staff

- Excellent communication and cooperation within Home Economics Department

NEEDS EXPRESSED

Facilities, Equipment, and Supplies

- Install new sinks and provide additional storage areas in Foods
- Increase storage space presently limiting the size of projects that can be developed
- Install a Power Technology Shop

THEODORE ROOSEVELT
61 School Street
Roxbury 02119
521-9571

Paul J. Keane
Principal

District 2

Constructed in 1923

AVERAGE ENROLLMENT: 493

BLACK: 47%
WHITE: 38%
HISPANIC: 12%
OTHER: 2%

GIRLS: 46%
BOYS: 56%

AVERAGE ATTENDANCE: 79%

Course	Teacher	Years in Present School	Years in Boston Schools	Relevant Experience
Clothing	Henrietta Cox	2	5	Other teaching, 13 yrs.
Foods	Gail Islas	3	3	
Drafting	Thomas Lally	3	3	Construction, 20 years
Woodworking	Paul Bond	6	6	

EXTENT OF CO-EDUCATION IN INDUSTRIAL ARTS AND HOME ECONOMICS:

10% cross-enrollment.

COURSE SCHEDULING IN INDUSTRIAL ARTS AND HOME ECONOMICS:

Assigned by homeroom;
Full-year rotation: General students - 2 double periods/week;
Academic students - 1 double period/week.

GUIDANCE STAFF: 1

GUIDANCE/STUDENT RATIO: 1:493

89

Washington Irving

The Irving, located just outside Roslindale Square, is one of the largest middle schools in Boston. The school has been severely troubled in recent years, but this past year has shown remarkable improvement in the learning environment and all teachers and students have benefited. In Home Economics and Industrial Arts, the staff have shown substantial ingenuity in diversifying and expanding their courses, despite major problems with equipment. They have begun instituting a variety of career-related activities, and are actively interested in pursuing these new directions.

FEATURES NOTED

Courses and Programs

- Home Economics courses include Consumer Education and Health; Ceramics is offered in Industrial Arts.
- Health course specifically examines career possibilities in that field.
- Graphic arts includes silk screening, lettering, leather tool work, photography.
- Offset equipment available, obtained through federal funds.
- Eighth grade program of field trips and films.

NEEDS EXPRESSED

Facilities, Equipment, and Supplies

- Cover hot water heater in Home Economics department.
- Repair and paint two shops damaged by fire almost a year ago; buy photo-composing equipment.
- Update equipment in woodworking.
- Install sufficient wiring for all equipment currently available in school.
- Increase security.

Interest in Curriculum Expansion

- In Industrial Arts: auto mechanics; jewelry unit.

Other

- Interest in community-oriented projects.

WASHINGTON IRVING
114 Cummings Highway
Roslindale 02131

323-2633

Richard J. Maloney
Acting Principal

District 3

Constructed in 1937

AVERAGE ENROLLMENT: 1,024

BLACK: 42%
WHITE: 52%
HISPANIC: 5%
OTHER: 1%

GIRLS: 48%
BOYS: 52%

AVERAGE ATTENDANCE: 78%

Course	Teacher	Years in Present School	Years in Boston Schools	Relevant Experience
Clothing	Florence Somerville	10	18	
Clothing/ Consumer Education	Jennie Roberts	11	20+	
Foods	Alice Morrill	18	28	
Foods	Karen McNamara	6	6	
Health	Ellen Karp	2	3	Some bilingual training; some special needs trng.
Drafting	Paul Crivell	7	9	Drafting, 21 years; spec. needs guidance training
Electricity	Arsen Khachadoorian			Teaching, 12 years
Graphic Arts	Robert Gaura	9	9	Mechanic, 7 years
Metals	John Stewart	11	15	
Woodworking	John Harris	2	7	General repair business
Woodworking/ Ceramics	William Murphy	8	9	

EXTENT OF CO-EDUCATION IN INDUSTRIAL ARTS AND HOME ECONOMICS:

Less than 5% cross-enrollment.

COURSE SCHEDULING IN INDUSTRIAL ARTS AND HOME ECONOMICS:

Elective through parent request; Full-year rotation for Home Economics; and Semester rotation for Industrial Arts.
Sixth grade: General students - 2 double periods/week;
Academic students - 1 double period/week.
Seventh and eighth grades: 2 double periods/week.

BILINGUAL PROGRAMS:

Programs in operation for 23 Spanish-speaking and 54 Greek-speaking students.

GUIDANCE STAFF: 3

GUIDANCE/STUDENT RATIO: 1:341

Solomon Lewenberg

The Lewenberg Middle School is a large and physically impressive school located in a residential neighborhood in Mattapan. All school staff are quite pleased with the marked improvement in the school atmosphere over the past few years. The Home Economics and Industrial Arts teachers uniformly identify the same areas of concern, including a desire for training, direction from central office administrators, higher status within their school, and improved communication among all the staff. Of particular concern to the school administration is the planned implementation of co-education in Industrial Arts and Home Economics.

FEATURES NOTED

Courses and Programs

- Foods courses incorporate consumer education.
- Several subject area teachers have conducted career-related field trips. For example, a math teacher has taken students to visit the Prudential Insurance Company.
- Videotapes of television programs are used in Home Economics courses.

Staff

- Clothing teacher solicited donations of materials from local stores.

Other

- Kuder Preference Test administered to students.

NEEDS EXPRESSED

Facilities, Equipment, and Supplies

- Install shelves and a changing area for clothing room
- Tile floor and install sinks and cabinets in foods room.
- Provide disc and belt sanders for woodworking shop.

Staff

- Establish mechanisms for regular exchange of information among Industrial Arts, Home Economics and subject area teachers.
- Training in French to enable teachers to work better with bilingual Haitian students.

Other

- Allow for more student choice in scheduling Industrial Arts and Home Economics courses.

SOLOMON LEWENBERG
20 Outlook Road
Mattapan 02126

298-9360

Martin Greeley
Principal

District 3

Constructed in 1930

AVERAGE ENROLLMENT: 801

BLACK: 59%
WHITE: 39%
HISPANIC: 1%

GIRLS: 51%
BOYS: 49%

AVERAGE ATTENDANCE: 79%

Course	Teacher	Years in Present School	Years in Boston Schools	Relevant Experience
Clothing	Margaret Diamond	6	6	Clothing industry, 3 years
Clothing	Linda Derby	5	5	
Foods	Mary Winquist	5	5	
Foods	Virginia Murray		5	
Drafting	Chester Lee	2	2	Construction Engineer, 1 year
Electricity	Joseph Schindler	6	6	Electrical industry, 2 years
Graphic Arts	Thomas Martin	14	14	Training in special needs
Woodworking	James Hesnan	3	27	

EXTENT OF CO-EDUCATION IN INDUSTRIAL ARTS AND HOME ECONOMICS:

15% cross-enrollment.

COURSE SCHEDULING IN INDUSTRIAL ARTS AND HOME ECONOMICS:

Assigned by cluster;
Semester rotation: General students - 2 double periods/week;
Academic students - 1 double period/week.

BILINGUAL PROGRAM: Program for 66 Haitian students.

GUIDANCE STAFF: 3 GUIDANCE/STUDENT RATIO: 1:267

Robert Gould Shaw

The Shaw School is located in West Roxbury in a building that is quite old but well maintained. Courses in Industrial Arts and Home Economics are oriented toward basic skill development, and teachers and students alike place considerable emphasis on the value of making projects which can than be taken home. Facilities and equipment for such projects are available, but they are outdated for any training appropriate to today's vocations. Incorporation of career-related materials, however, has been widespread among subject area teachers.

FEATURES NOTED

Staff

- Intra-departmental cooperation within Industrial Arts: for example, drafting and graphic arts teachers worked together to produce T-shirts.

Other

- Graphic arts teacher developed a proposal to secure funds for additional equipment.

NEEDS EXPRESSED

Facilities, Equipment, and Supplies

- Provide offset press for printing department.
- Provide additional supplies for clothing classes, particularly fabric.

Staff

- Develop and implement plans for integrating math, science and English skills with graphic arts course.

Interest in Curriculum Expansion

- In Home Economics: consumer education, family planning, and human development.
- In Industrial Arts: photography, letterpress, and silk screening.

Other

- Assist interested science teacher in instituting a mini-course in the community.

ROBERT GOULD SHAW
20 Mt. Vernon
West Roxbury 02132

325-2727

Robert Glennon
Acting Principal

District 3

Constructed in 1919

AVERAGE ENROLLMENT: 703

BLACK: 54%
WHITE: 41%
HISPANIC: 4%

GIRLS: 52%
BOYS: 48%

AVERAGE ATTENDANCE: 78%

Course	Teacher	Years in Present School	Years in Boston Schools	Relevant Experience
Clothing	Sylvia O'Donnell	4	35	Commercial tailor, 10 years
Clothing	Kathy Mikuszewski	1	1	Commercial sewing instructor, 3 mos.
Foods	Charlotte Page		31	
Drafting	Fred Smith			Teaching, 10 years
Graphic Arts	Edward Hanley	6	6	Compositor, 24 years
Woodworking	James Woods	1	38	Shipfitter and shipwright, 10 years; 766 training.

EXTENT OF CO-EDUCATION IN INDUSTRIAL ARTS AND HOME ECONOMICS:

Less than 5% cross-enrollment, primarily female students in Industrial Arts.

COURSE SCHEDULING IN INDUSTRIAL ARTS AND HOME ECONOMICS:

Assigned by grade level;
Full-year rotation: General students - 2 double periods/week;
Academic students - 1 double period/week.

GUIDANCE STAFF: 2

GUIDANCE/STUDENT RATIO: 1:352

William Barton Rogers

The Rogers Middle School, located in the old sprawling Hyde Park High annex, was converted into a middle school in September of 1975. The Industrial Arts and Home Economics program have strong administrative support, for both the Acting Principal and two of the guidance counselors are former Industrial Arts teachers. Currently the staff in those programs spend much of their course time working with students on developing basic manual skills through individual projects. There has been, however, widespread interest in revitalizing the program and in exploring avenues for improving and updating current courses and instituting new approaches to these subject areas.

FEATURES NOTED

Courses and Programs

- Students scheduled for Home Economics/Industrial Arts within cluster.
- Machine Shop in Industrial Arts.

Staff

- Principal and two guidance counselors trained in Industrial Arts
- Industrial Arts teacher has redesigned the Metal Shop on his own initiative

Other

- Administrative support of concept of work-site field trips.
- Proposal developed for 636 funds for photography course by subject area teacher.

NEEDS EXPRESSED

Facilities, Equipment, and Supplies

- Provide additional equipment for mechanical drafting rooms.
- Provide additional storage space
- Repair and where necessary replace sewing machines

Interest in Curriculum Expansion

- In Industrial Arts: Graphic Arts

Staff

- Institute meetings between Home Economics/Industrial Arts to coordinate projects
- Coordinate drafting and sheet metal projects
- Capitalize on interest in joint projects, e.g., clothing and art

WILLIAM BARTON ROGERS
15 Everett Street
Hyde Park 02136

361-1990

John Daniels
Acting Principal

District 4

Constructed in 1902

AVERAGE ENROLLMENT: 953

BLACK: 47%
WHITE: 51%
HISPANIC: 1%

GIRLS: 47%
BOYS: 53%

AVERAGE ATTENDANCE: 76%

Course	Teacher	Years in Present School	Years in Boston Schools	Relevant Experience
Foods	Mary B. Peters	3	13	
Foods	Jeanne Child	1	1	
Clothing	Elizabeth Ostrowski	1	6	
Clothing	Lucy Thorpe	1	5	
Drafting	Paul Gleavy			
Drafting Woodworking	David O'Keefe	6	6	Designer, 5 years
Machine Shop	Leonard Croteau	8	8	Machinist, 20 yrs.
Metals	David Kelly	8	8	Sheet metal worker, 15 years

EXTENT OF CO-EDUCATION IN INDUSTRIAL ARTS AND HOME ECONOMICS:

Less than 5% cross-enrollment.

COURSE SCHEDULING IN INDUSTRIAL ARTS AND HOME ECONOMICS:

Assigned by homeroom;
Semester rotation: General students - 2 double periods/week;
Academic students - 1 double period/week.

GUIDANCE STAFF: 3

GUIDANCE/STUDENT RATIO: 1:317

Frank V. Thompson

The Thompson School, built over 50 years ago, is located in a residential neighborhood of Dorchester. Space is severely limited, and much of the equipment is inadequate. The administration and staff, however, have developed solid resources in the area of career education. The administration in particular has taken a strong lead in urging faculty to integrate career education as part of their curriculum. Class projects have often developed into school-wide projects, and teachers willingly share the resources of their respective areas. Within the courses offered in Industrial Arts and Home Economics, teachers continue working through basic student projects, but are beginning to move toward an increasing use of career exploration activities.

FEATURES NOTED

Courses and Programs

- Variety of teaching tools and alternate learning environments. For example: guest speakers, field trips to markets and local firms.
- Site school for pilot program, "World of Construction."

Staff

- Strong interdepartmental communication and respect.
- Interdisciplinary cooperation on large projects.

Other

- Career Resource Center available in Guidance Department.
- Administration active in initiating and supporting career education in total curriculum.

- Faculty Senate currently screens curriculum materials to eliminate those with sex and racial stereotypes.

NEEDS EXPRESSED

Facilities, Equipment, and Supplies

- Provide partitions to separate double classroom in Home Economics.
- Upgrade graphic arts with photo offset and composition equipment,
- Install electrical outlets in printing room to accommodate audiovisual materials.

Interest in Curriculum Expansion

- In Industrial Arts: drafting.

Other

- Pursue administration and teacher interest in involving parents and community directly in career-related programs.

FRANK V. THOMPSON
10 Maxwell Street
Dorchester 02124

282-4040

Gerald Hill
Principal

District 4

Constructed in 1922

AVERAGE ENROLLMENT: 666

BLACK: 58%
WHITE: 39%
HISPANIC: 3%

GIRLS: 46%
BOYS: 54%

AVERAGE ATTENDANCE: 77%

Course	Teacher	Years in Present School	Years in Boston Schools	Relevant Experience
Clothing	Ms. Theofilas	1	1	Graduate training in elementary education
Foods	Lucile Stanley	Teaching, 15 yrs.		
Foods	Betty Heller	1	2	
Foods	Rita Callaghan	10	15	
Electricity	Francis Ahearn	2	2	
Graphic Arts	Tom Noble	5	10	Letterpressman, 20 yrs.
Woodworking	Joseph O'Dell	Teaching, 20 yrs.		
World of Construction	Mario Moriello	2	3	

EXTENT OF CO-EDUCATION IN INDUSTRIAL ARTS AND HOME ECONOMICS:

100% cross-enrollment, separate classes.

COURSE SCHEDULING IN INDUSTRIAL ARTS AND HOME ECONOMICS:

Sixth grade: assigned by cluster;
Seventh and eighth grades: assigned on basis of reading level and parent interest forms: General students - 2 double periods/week;
Academic students - 1 double period/week.

GUIDANCE STAFF: 2

GUIDANCE/STUDENT RATIO: 1:333

Champlain

The Champlain School in Dorchester is Boston's smallest middle school, and one of its oldest. Due to its size and age, the Industrial Arts and Home Economics offerings are limited. However, the single teacher in each of these areas regularly has shown initiative in diversifying courses. Lack of equipment is a problem, but the school administration is very supportive of school-wide efforts to secure additional funds.

FEATURES NOTED

Courses and Programs

- Home Economics courses include nutrition, child care, needlecraft, and macrame.

NEEDS EXPRESSED

Interest in Curriculum Expansion

- In Industrial Arts: electricity, sheet metal, plastics, photography, and construction.

Staff

- Provide regular access to other Industrial Arts and Home Economics teachers in the City; small size of the Champlain impedes innovation and diversification.
- Implement programs to increase awareness of career education principles among subject area teachers.

CHAMPLAIN
22 School Street
Dorchester

436-6433

Daniel O'Connell
Acting Principal

District 5

Constructed in 1925

AVERAGE ENROLLMENT: 225

BLACK: 55%
WHITE: 38%
HISPANIC: 7%

GIRLS: 52%
BOYS: 48%

AVERAGE ATTENDANCE: 75%

Course	Teacher	Years in Present School	Years in Boston Schools	Relevant Experience
Home Economics	Marilyn Timmons		4	Some bilingual training; some special needs training. Commercial costuming, 4 years
Drafting	Kenneth Lewis	1	5	USAF test flight engineer, 4 years

COURSE SCHEDULING IN INDUSTRIAL ARTS AND HOME ECONOMICS:

Semester rotation.

GUIDANCE STAFF: 1

GUIDANCE/STUDENT RATIO: 1:225

Grover Cleveland

The Cleveland Middle School is a recently remodeled, massive brick structure located just behind the busy intersections of Fields Corner in Dorchester. The school offers a wide selection of Home Economics and Industrial Arts courses. Over the last two years, the Cleveland has taken the initiative in broadening the structure and content of these courses and in maximizing student exposure to the various offerings.

FEATURES NOTED

Courses and Programs

- Site school for pilot program, "World of Construction."
- Home Economics courses include child care.
- Strong interest among general subject area teachers in Industrial Arts/Home Economics courses, sparked primarily by pilot programs and by the impact of male/female integration of classes.

Staff

- Considerable cooperation among teachers in Industrial Arts and Home Economics: team teaching, sharing of classroom techniques, swapping classes.

NEEDS EXPRESSED

Facilities, Equipment and Supplies

- Install wiring so that electronics equipment can be used.
- Increase funds for fabrics and foods in Home Economics to allow for more diversity in projects.

Other

- Monitor scheduling procedure to avoid assignment of students to two successive courses which are not traditional for their sex.

GROVER CLEVELAND
11 Charles Street
Dorchester 02122

825-9201

Frank Lyons
Acting Principal

District 5

Remodeled in 1973, 1974

AVERAGE ENROLLMENT: 1,521

BLACK: 51%
WHITE: 39%
HISPANIC: 9%

GIRLS: 49%
Boys: 51%

AVERAGE ATTENDANCE: 70%

Course	Teacher	Years in Present School	Years in Boston Schools	Relevant Experience
Child Care	Yvon Bednarz		1	Training in child development
Clothing	Margaret Dempsey		39	Industrial sewing, 30 yrs
Clothing	Cathy Lewis	7	7	
Foods	Sally Ames	5	9	
Foods	Terry Bakunas	5	6	Director, school lunch program
Drafting	Peter Manzone	6	6	Industrial Engineer, 23 years
Electricity	Don Smith	4	4	General electronics, 23 years
Graphic Arts	Bill Koughan			
Metals	Larry Mitchell			
Woodworking/ World of Construction	Richard Fraser	9	9	

EXTENT OF CO-EDUCATION IN INDUSTRIAL ARTS AND HOME ECONOMICS:

Full cross-enrollment.

COURSE SCHEDULING IN INDUSTRIAL ARTS AND HOME ECONOMICS:

Assigned by cluster; trimester rotation.
Sixth grade: 1 double period/week.
Seventh and eighth grades: General students - 2 double periods/week
Academic students - 1 double period/week.

BILINGUAL PROGRAM:

Program for 68 Spanish-speaking students.

GUIDANCE STAFF: 3

GUIDANCE/STUDENT RATIO: 1:507

Oliver Wendell Holmes

The Holmes, located in Dorchester, is an excellent example of the positive impact which a few key steps can have on a total school atmosphere. At the Holmes, an aggressive Parent Advisory Committee and several teachers, determined to cooperate and improve their programs, collaborated to infuse new energy into the school community. Two concrete products of these efforts in 1976 were an unusual school newsletter and a Bicentennial reading and coloring book, developed by a number of teachers and students working together, and printed on the school's own press. Meanwhile, quarters remain cramped and there is a need for wider networks of communication as the Holmes moves to initiate more career-related activities.

FEATURES NOTED

Courses and Programs

- Teacher Corps Training Facility Program, started in May 1976, utilizes Boston State interns and provides some education for parents.
- Content of all Home Economics courses includes consumer education, economics, and child care.
- Grant of $38,000 from state funds available to improve facilities, particularly in the print shop.
- Site school for pilot program, "World of Construction" for eighth grade students.
- Collaborative project using resources of Graphic Arts, Art, English, and Social Studies, resulting in the production of a bilingual Bicentennial Coloring and Reading Book.

Other

- Presence of active Parent Advisory Council and Transitional Aides is having a major, positive impact on school atmosphere and operation.

NEEDS EXPRESSED

Facilities, Equipment, and Supplies

- Provide equipment, now 2 years overdue, for film-making course in Home Economics.
- Institute regular repair of classroom equipment, specifically sewing machines.
- Provide area in which to make guidance materials in career education accessible to students.
- Improve utilization of space to upgrade conditions in classrooms.
- Increase security.

OLIVER WENDELL HOLMES
40 School Street
Dorchester 02124

436-7318

Edward P. Mabardi
Acting Principal

District 5

Constructed in 1905

AVERAGE ENROLLMENT: 553

BLACK: 66%
WHITE: 31%
HISPANIC: 3%

GIRLS: 50%
BOYS: 50%

AVERAGE ATTENDANCE: 75%

Course	Teacher	Years in Present School	Years in Boston Schools	Relevant Experience
Clothing	Marion Westbrook	5	10	Other teaching, 10 yrs.
Foods	Martha Mattox	5	6	
Graphic Arts	Joseph Moscaritolo			
Woodworking/ World of Construction	Dante Pepe	10	13	Machinist and metal worker, 4 years

EXTENT OF CO-EDUCATION IN INDUSTRIAL ARTS AND HOME ECONOMICS:

20% cross-enrollment.

COURSE SCHEDULING IN INDUSTRIAL ARTS AND HOME ECONOMICS:

Classes assigned: General students - 3 double periods/week;
Academic students - 2 double periods/week.

GUIDANCE STAFF: 1

GUIDANCE/STUDENT RATIO: 1:553

112

Woodrow Wilson

Located in Dorchester, the Wilson is a large middle school, which offers a broad range of courses within Industrial Arts and Home Economics. Throughout these courses, teachers focus primarily on helping students develop the skills basic to the technical field. Strong administrative support has also led to an emphasis on coordination of these middle school programs with those offered at the high school level. Meanwhile, subject area teachers at the Wilson have demonstrated an active interest in collaborating with the Industrial Arts and Home Economics teachers in developing career-related activities.

FEATURES NOTED

Other

- Program designed to coordinate the Industrial Arts/Home Economics programs with the vocational program at Dorchester High School.
- Career Awareness program developed for 1976-1977.

NEEDS EXPRESSED

Facilities, Equipment, and Supplies

- Provide storage space for Home Economics.
- Purchase fabrics for clothing course that are more acceptable to male students.
- Provide new tables, sinks, and chairs for Home Economics department.

Interest in Curriculum Expansion

- Plastics; photography.

Other

- Increase career education resources available in guidance department.
- Grant students some choice regarding Industrial Arts/Home Economics courses.

WOODROW WILSON
18 Croftland Avenue
Dorchester 02124
925-2599

William Hennessey
Principal

District 5

Constructed in 1932

AVERAGE ENROLLMENT: 938
AVERAGE ATTENDANCE: 76%

BLACK: 55%
WHITE: 41%
HISPANIC: 3%
OTHER: 1%

GIRLS: 48%
BOYS: 52%

Course	Teacher	Years in Present School	Years in Boston Schools	Relevant Experience
Clothing	Eleanor Flynn	Teaching, 25 yrs.		
Clothing	Margaret Favreau	Teaching, 14 yrs.		
Foods	Florence Johnson	Teaching, 25 yrs.		
Foods	Jannie Terry	Teaching, 7 yrs.		
Drafting	Joseph Martin	4	35	Draftsman, 3 years
Electricity	Peter J. Lynch	½	½	
Graphic Arts	James Sweeney	Teaching, 16 yrs.		
Metals	Clifford Mastricola	4	4	Sheet metal worker, 25 years
Woodworking	Frederick Cote	10	10	

EXTENT OF CO-EDUCATION IN INDUSTRIAL ARTS AND HOME ECONOMICS:

100% cross-enrollment, separate classes.

COURSE SCHEDULING IN INDUSTRIAL ARTS AND HOME ECONOMICS:

Assigned by cluster;
Semester rotation: General students - 2 double periods/week;
Academic students - 1 double period/week.

GUIDANCE STAFF: 2 GUIDANCE/STUDENT RATIO: 1:469

Dearborn

The Dearborn School is located in the middle of the Orchard Park housing project. The Dearborn is scheduled to be torn down in two years, and in September of 1976 the sixth grade will be phased out. The school's physical plant is now in poor condition, and staff have a major problem in procuring supplies, heavy equipment, and tools. The Industrial Arts and Home Economics staff, with major assistance from the Special Needs Resource Teacher, have compensated for these problems with innovative procedures and activities, including many which are career related. Examples are clean-up projects at the school, promotion of student awareness of career opportunities, and an in-school "help wanted" list. Staff determination and enthusiasm are responsible for the successes at the Dearborn.

FEATURES NOTED

Courses and Programs

- Funds available through a mini-grant to the Home Economics department to secure 12 film strips on training and job selection.
- Collaborative projects conducted by Home Economics department, math and science teachers, and Special Needs Resource Teacher.
- Industrial Arts, Home Economics, and the Special Needs Resource Teacher conduct programs for field trips to work sites, guest speakers, and films.

Staff

- Staff of the Home Economics department coordinate activities, share planning, and occasionally combine classes.

Other

- Career eduation program for 16 students who spend 25 to 40 percent of their day in the Resource Room.
- Career Education Workshop, funded under ESAA, has allowed for a building clean-up campaign and minor school remodeling projects for which students have been paid.

EXPRESSED NEEDS

Facilities, Equipment and Supplies

- Install sinks in clothing room to increase range of feasible activities; for example, batik.
- Improve small equipment inventory substantially; for example, micrometer, welding equipment.
- Increase security for Industrial Arts.

Other

- Clarification of time tables for phasing out of current facility and construction of new one.
- Commitment to maintaining current facility in adequate condition until phased out.
- Plan for security of Home Economics classrooms.

DEARBORN
25 Ambrose Street
Roxbury 02119
427-7122

District 6

Constructed in 1906

Jacob Santamaria
Principal

AVERAGE ENROLLMENT: 330

BLACK: 53%
WHITE: 35%
HISPANIC: 11%
OTHER: 1%

GIRLS: 46%
BOYS: 54%

AVERAGE ATTENDANCE: 62%

Course	Teacher	Years in Present School	Years in Boston Schools	Relevant Experience
Clothing	Justine Sullivan	4	4	
Foods	Deborah Hamilton	1	1½	
Metals	Alfred Binns	4	6	Construction, 1 year; some special needs training, some Spanish
Woodworking	Thomas McManus	11	12	Carpentry; some Spanish

EXTENT OF CO-EDUCATION IN INDUSTRIAL ARTS AND HOME ECONOMICS:

Less than 5% cross-enrollment.

COURSE SCHEDULING IN INDUSTRIAL ARTS AND HOME ECONOMICS:

Elective through parent request forms: General students - 2 double periods/week;

Academic students - 1 double period/week.

GUIDANCE STAFF: 1

GUIDANCE/STUDENT RATIO: 1:330

Patrick F. Gavin

The Gavin Middle School is located on Dorchester Street in the heart of South Boston. The school is well maintained and currently is perhaps the best-equipped school in the system in Industrial Arts and Home Economics. A majority of the staff identify student attitudes and conduct as their major problem. Home Economics and Industrial Arts teachers are extremely concerned, as well, about the classroom changes inherent in the implementation of new guidelines for male and female participation in courses. Teachers throughout the school would like to have more information and insight into the future direction of career education and its potential impact on their classrooms. In addition, all teachers would like to see better communication and coordination of staff.

FEATURES NOTED

Courses and Programs

- Excellent equipment and large quantities of small tools in Industrial Arts shops.
- Coordination of lesson plans between Home Economics teacher and social studies and geography teacher.
- Students participate in Boston Youth Motivation Group.

Staff

- Two foods teachers work as an interactive team.

NEEDS EXPRESSED

Facilities, Equipment, and Supplies

- Provide exhaust system and fuel supply for Power Technology Shop.

- Provide sufficient power and outlets in Metals shop to use all equipment.

Other

- Improve communication and support among Home Economics teachers.
- Eliminate one of two sheetmetal shops and replace with an Ohio Career Education course.

PATRICK F. GAVIN
215 Dorchester Street
South Boston 02127

269-1723

William Glennon
Acting Principal

District 6

Constructed in 1936

AVERAGE ENROLLMENT 943

BLACK: 39%
WHITE: 52%
HISPANIC: 7%
OTHER: 2%

GIRLS: 49%
BOYS: 51%

AVERAGE ATTENDANCE: 71%

Course	Teacher	Years in Present School	Years in Boston Schools	Relevant Experience
Clothing	Rosie Allen			Teaching, 10 years
Clothing	Lucia Carolan			Teaching, 12 years
Clothing	Audrey Seaver			Teaching, 25 years
Foods	Clare Cunningham	8	8	
Foods	Lisa Smith	10	12	
Drafting	Francis Neely	9	16	
Electricity/ Power Technology	John Aldred	4	4	
Graphic Arts	William Miley	8	8	Compositor, 12 years
Metals	Arthur Brady	6	6	
Metals	Malcolm McLellan	22	2	General metal work, 13 years
Woodworking	Francis Kennedy	11	13	

EXTENT OF CO-EDUCATION IN INDUSTRIAL ARTS AND HOME ECONOMICS:

Less than 10% cross-enrollment, primarily female students in Industrial Arts.

COURSE SCHEDULING IN INDUSTRIAL ARTS AND HOME ECONOMICS:

Assigned by homeroom;
Semester rotation: General students - 2-5 double periods/week;
Academic students - 1 double period/week.

GUIDANCE STAFF: 3 GUIDANCE/STUDENT RATIO: 1:314

John W. McCormack

The McCormack School, located beside Columbia Point near South Boston, has a well-developed career-related program with several model projects in operation. Home Economics and Industrial Arts operate jointly under a Unified Arts Department. Teachers at the McCormack have initiated and supported a variety of individual and collaborative activities which have shifted the focus of Home Economics and Industrial Arts in the direction of career exploration. Ties between these teachers and the rest of the school staff are very strong and provide a solid basis for further infusion of career education activities.

FEATURES NOTED

Courses and Programs

- Field trips used extensively by Home Economics, with support from a career education grant.
- Foods teacher organized an Ethnic Foods Festival.
- Career Week program held.
- Site school for pilot program, "World of Construction".

Staff

- Industrial Arts teacher (woodworking) resolved need for additional supplies by organizing money-raising projects with students.
- Extensive collaboration among Home Economics/Industrial Arts teachers.
- Collaborative arrangement between Home Economics/Industrial Arts; one teacher from the latter area sits on math committee.

NEEDS EXPRESSED

Facilities, Equipment and Supplies

- Proof press or other up-to-date equipment for printing; also rubber stamp and book-binding tools.
- Additional supplies for crafts course.

Interest in Curriculum Expansion

- Graphic Arts, including silk-screening, book-binding, and printing units.
- Ceramics.

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JOHN W. McCORMACK
325 Mt. Vernon Street
Dorchester 02125

825-7949

Nicholas G. Bergin
Principal

District 6

Constructed in 1967

AVERAGE ENROLLMENT: 758

BLACK: 33%
WHITE: 46%
HISPANIC: 19%
OTHER: 2%

GIRLS: 47%
BOYS: 53%

AVERAGE ATTENDANCE: 74%

Course	Teacher	Years in Present School	Years in Boston Schools	Relevant Experience
Arts & Crafts	Cherie Mulder	2	2	
Clothing	Maureen Torpy	7	16	
Clothing	Danielle Goyette	6	6	
Foods	Marilyn Gardner	5	5	
Drafting	John Dunn		4	Machinist, 26 years
Electricity	Dan Flaherty		10	
Woodworking	Frank Murphy		5	
Woodworking/ World of Construction	Ralph Stowe		10	

EXTENT OF CO-EDUCATION IN INDUSTRIAL ARTS AND HOME ECONOMICS:

Full cross-enrollment, mixed classes.

COURSE SCHEDULING IN INDUSTRIAL ARTS AND HOME ECONOMICS:

Assigned by cluster;
Semester rotation: All students - 2 double periods/week.

BILINGUAL PROGRAM:

Program for 87 Spanish-speaking students.

GUIDANCE STAFF: 2

GUIDANCE/STUDENT RATIO: 1:379

Clarence R. Edwards

The Edwards Middle School serves the Charlestown community of Boston. The building itself is an old one, and vandalism is a major problem. Teachers generally must spend considerable amounts of time on classroom management, and problems seem particularly severe in the Industrial Arts classes. In both Home Economics and Industrial Arts, classes are focused on basic skill development. The Guidance Department has taken some initiative in developing career education programs, but counselors and teachers report some community opposition to a program which might shift children's interests away from following occupations and roles traditional within families.

FEATURES NOTED

Courses and Programs

- Home Economics course content includes nutrition, child care, and other subjects.
- In-school projects to help improve physical facility, conducted by the Industrial Arts department, include making shelves for the library, etc.
- New graphic arts shop provides services for both school and community.
- Special cooking program.
- Infusion of career exploration principles into some English courses.

NEEDS EXPRESSED

Facilities, Equipment and Supplies

- Provide additional small equipment for Home Economics, such as mixers, bowls, pie pans, tables, chairs; also fabrics for clothing classes.
- Convert electricity shop to power technology.
- Provide additional area for new offset press.
- Increase security, both during school year and over summer months.

- Install shades in all classrooms so that audio-visual equipment can be used.

Staff

- Improve awareness of all faculty of availability of Occupation Education Library.

Other

- Encourage students to use the Occupation Education Library.

CLARENCE R. EDWARDS
28 Walker Street
Charlestown

242-0779

John T. Prince
Principal

District 7

Constructed in 1932

AVERAGE ENROLLMENT: 461

BLACK: 36%
WHITE: 46%
HISPANIC: 5%
OTHER: 13%

GIRLS: 46%
BOYS: 54%

AVERAGE ATTENDANCE: 77%

Course	Teacher	Years in Present School	Years in Boston Schools	Relevant Experience
Clothing	Anna F. McDermott	35	38	
Clothing	Barbara Banks	2	3	Fabric manager, 1 year
Foods	Callie Eubanks	18	19	Author, Anthology of Verse
Foods	Marion Katz	4	4	
Electricity	Romano DePaoli	2	16	Construction, 3 years
Graphic Arts	Frank Martin	30	47	
Metals	Charles Ferrari	3	13	
Woodworking	Domenic Paolini	20	24	Machinist and mechanic, 20 years

EXTENT OF CO-EDUCATION IN INDUSTRIAL ARTS AND HOME ECONOMICS:

Less than 5% cross-enrollment.

COURSE SCHEDULING IN INDUSTRIAL ARTS AND HOME ECONOMICS:

Assigned by homeroom;
Full-year rotation: Industrial students - 4 double periods/week;
General students - 2 double periods/week; and
Academic students - 1 single period/week.

GUIDANCE STAFF: 2

GUIDANCE/STUDENT RATIO: 1:230

Michelangelo

The Michelangelo is a small middle school located on Charter Street in the North End. The building itself is old, and facilities are noticeably limited. The Michelangelo serves large Italian-speaking and Chinese-speaking student populations, and a number of these students are currently enrolled in bilingual programs. In addition, the school's staff have developed a strong working relationship with the communities they serve. The Home Economics and Industrial Arts teachers are moving to update their courses, but their most immediate obstacles are small size and limited facilities.

FEATURES NOTED

Courses and Programs

- Small, well-motivated student body.
- Program of field trips in Home Economics and Guidance departments.
- Innovative foods program has been initiated which is responsive to the ethnic character of the student body.
- Guest speaker program sponsored by the Guidance Department and School Volunteers for Boston.
- Special program in house design and construction.

NEEDS EXPRESSED

Facilities, Equipment and Supplies

- Improve layout of equipment in classrooms so that they can accommodate students conveniently, e.g., foods room presently accommodates only 12 students.
- Provide additional funds for ethnic foods program.
- Convert electrical shop to power technology.

Interest in Curriculum Expansion

- In Home Economics: child care, interior design, retailing, hotel management.
- In Industrial Arts: graphic arts, metals, design and construction.

Other

- Eliminate double periods split by lunch break.

MICHELANGELO
70 Charter Street
Boston 02113

227-1897

John P. Breen
Acting Principal

District 7

Constructed in 1919

AVERAGE ENROLLMENT: 332

BLACK: 26%
WHITE: 33%
OTHER: 41%

GIRLS: 46%
BOYS: 54%

AVERAGE ATTENDANCE: 86%

Course	Teacher	Years in Present School	Years in Boston Schools	Relevant Experience
Clothing	Roberta McDonald	2	2	Buyer, 6 months; marketing computer equipment, 3 years
Foods	Despina Droge	2	6	
Electricity	Pasquale Coppola	2	4	
Woodworking	William McKenna	8	8	Carpenter, 10 years

EXTENT OF CO-EDUCATION IN INDUSTRIAL ARTS AND HOME ECONOMICS:

First semester: No cross-enrollment;
Second semester: Mini-courses instituted;
Full enrollment, separate courses, for duration of mini-course.

COURSE SCHEDULING IN INDUSTRIAL ARTS AND HOME ECONOMICS:

Assigned by homeroom;
Semester rotation: General students - 2 double periods/week;
Academic students - 1 double period/week.

BILINGUAL PROGRAMS:

Programs for 52 Chinese students and 27 Italian-speaking students.

GUIDANCE STAFF: 2

GUIDANCE/STUDENT RATIO: 1:166

James P. Timilty

The Timilty School in Roxbury is the site of several specialized, career-related programs, including one of the few typing programs at the middle school level. Although the school has one of the City's lowest teacher/student ratios, it also has poor facilities, low attendance, and insufficient security. The implementation of various pilot programs has had noticeable impact on career education goals.

FEATURES NOTED

Courses and Programs

- Site of "World of Construction" course.
- Typing program, which will form the basis of a business-related program in 1976-77.

Staff

- Career education workshops, organized under Title VII by the Bilingual Department, have increased teacher awareness of career education.

Other

- Guidance area has condiserable printed career education material available.

NEEDS EXPRESSED

Facilities, Equipment, and Supplies

- Improve security of Home Economics area to reduce current problem of theft of student projects.
- Increase funds available for perishable items in food courses.

- Electrical shop needs additional tools.
- Graphic arts needs photo offset and composing equipment.

Other

- Reduce administrative obstacles to field trips; teachers are interested in community exploration activities.
- Allow for student involvement in the process of course selection.
- Discontinue practice of scheduling double periods for Industrial Arts and Home Economics during lunch period.

JAMES P. TIMILTY
205 Roxbury Street
Roxbury 02119

445-3114

David Owens, Sr.
Principal

District 7

Constructed in 1937

AVERAGE ENROLLMENT: 487

BLACK: 62%
WHITE: 16%
HISPANIC: 22%

GIRLS: 45%
BOYS: 55%

AVERAGE ATTENDANCE: 63%

Course	Teacher	Years in Present School	Years in Boston Schools	Relevant Experience
Clothing	Priscilla Cole	2	6	
Clothing	Anne Daly	2	2	Peace Corps
Foods	Mildred Money	2	13	Garment stitcher; Spanish teaching, 1 yr.
Foods	Iris Lee			
Electricity	Emil Dow	9	9	Other teaching, 13 yrs. Licensed journeyman and Master Electrician
Graphic Arts	Matthew Lowe	2	9	
Metals	Charles Folco	2	4	Drafting
Woodworking	Stanley Burrell	7		

EXTENT OF CO-EDUCATION IN INDUSTRIAL ARTS AND HOME ECONOMICS:

Less than 10% corss-enrollment.

COURSE SCHEDULING IN INDUSTRIAL ARTS AND HOME ECONOMICS:

Assigned by homeroom;
Semester rotation: General students - 2 double periods/week;
Academic students - 1 double period/week.

BILINGUAL PROGRAM: Program for 74 Spanish-speaking students.

GUIDANCE STAFF: 3 GUIDANCE/STUDENT RATIO: 1:162

Joseph H. Barnes

One of the oldest middle schools in Boston, the Barnes, still reflects the ethnic homogeneity of the East Boston community it serves. Industrial Arts and Home Economics teachers at the Barnes have not only a relaxed atmosphere in which to teach, but also equipment and supplies that are better than average. Their courses focus on basic skill development for use in crafts and daily living chores at home or at work. The staff take advantage of opportunities to modify courses to their own interests, and are inclined to orient class work to specific vocational skills.

FEATURES NOTED

Courses and Programs

- Site school for pilot programs, "World of Construction" and "Power Technology."
- Participation in EDCO workshop in law and criminal justice has resulted in an increase in student awareness of career options in those fields.
- Career Week Program sponsored by Guidance Department.

Other

- Administration strongly supports Industrial Arts and Home Economics; two Assistant Principals are former Industrial Arts teachers.

NEEDS EXPRESSED

Facilities, Equipment and Supplies

- Improve storage and security in Home Economics.
- Update graphic arts by adding photocomposition equipment.

Staff

- Institute Home Economics departmental meetings to encourage communications among teachers who are in different parts of building and have different teaching perspectives.
- Plan activities for involving the community in Home Economics and Industrial Arts projects.
- Bring art teacher together with Home Economics and Industrial Arts teachers to coordinate career exploration programs.

Interest in Curriculum Expansion

- In Home Economics: child care, family relations, and consumer education.

JOSEPH H. BARNES
127 Marion Street
East Boston 02128

569-1343

John T. Daley
Principal

District 8

Constructed in 1901

AVERAGE ENROLLMENT: 830

BLACK: 4%
WHITE: 92%
HISPANIC: 2%
OTHER: 1%

GIRLS: 50%
BOYS: 50%

AVERAGE ATTENDANCE: 80%

Course	Teacher	Years in Present School	Years in Boston Schools	Relevant Experience
Clothing	Rose Pantano	4	9	Bilingual (Italian/English)
Clothing	Sue Costello	3	5	
Foods	Miriam Regan	25	28	Some special needs training
Foods	Maryann Urban	3	8	Dietary aide, part-time
Electricity/ Power Technology	John Earley	10	15	
Graphic Arts/ World of Construction	William Maradei	9	10	General industry, 30 yrs.
Machine Shop	Dr. Frank Celona	10	41	Machinist, 20 years
Woodworking	Cosimo Celona	1	10	

EXTENT OF CO-EDUCATION IN INDUSTRIAL ARTS AND HOME ECONOMICS:

20% cross-enrollment.

COURSE SCHEDULING IN INDUSTRIAL ARTS AND HOME ECONOMICS:

Sixth and seventh grade: Assigned by cluster; semester rotation.
Eighth grade: 1 elective, full-year courses;
General students - 2 double periods/week;
Academic students - 1 double period/week.

BILINGUAL PROGRAM: Program for 52 Italian-speaking students.

GUIDANCE STAFF: 1 GUIDANCE/STUDENT RATIO: 1:330

John Cheverus

The Cheverus School in East Boston is a small school serving students from grades one through eight. At the seventh and eighth grade levels, a woodworking course and a general home economics course are offered by part-time teachers. In addition, teachers in self-contained sixth grade classes have instituted some career-related activities in their curriculum. The conversion of the Cheverus into a middle school in September, 1976 will obviously require changes in equipment and staff, but the limited size of the school calls for an imaginative approach to the multi-purpose use of both.

FEATURES NOTED

Staff

- Sixth grade teachers with self-contained classes have integrated career exploration activities into subject lessons.

NEEDS EXPRESSED

Facilities, Equipment and Supplies

- Purchase Industrial Arts equipment, particularly for woodworking.
- Install additional electrical outlets in shop.

CHEVERUS
10 Moore Street
East Boston 02128
567-2984

Robert Conway
Principal

District 8

Constructed in 1909

AVERAGE ENROLLMENT: 108

BLACK: 1%
WHITE: 98%
HISPANIC: 1%

GIRLS: 48%
BOYS: 52%

AVERAGE ATTENDANCE: 81%

Course	Teacher	Years in Present School	Years in Boston Schools	Relevant Experience
Woodworking	Joseph McKenna (2 days/week)	9	9	Cabinet maker, 3 years
Home Economics	Rita Marshall (3/4 time)	1	13	Home Service Director for gas company, 3 years

EXTENT OF CO-EDUCATION IN INDUSTRIAL ARTS AND HOME ECONOMICS:

Less than 5% cross-enrollment.

COURSE SCHEDULING IN INDUSTRIAL ARTS AND HOME ECONOMICS:

2 double periods/week.

Jackson-Mann

The Jackson-Mann, a school for the hearing impaired, has 28 students at the middle school level. The program for these students is focused on the three career-related clusters currently prescribed by the Unified Plan for all of Boston. There is considerable emphasis on the mechanics of obtaining a job, and every effort is made to bring in deaf adults to serve as role models for younger students.

FEATURES NOTED

Courses and Programs

- Present use of Ohio Career Education Model, including industry-related, food, home, and health services and business and office practices.
- Career education principles are infused into all academic areas.

Staff

- Special needs counselor conducts community exploration activities and guest speaker program.
- Extensive counseling provided on the mechanics of acquiring a job.

NEEDS EXPRESSED

Interest in Curriculum Expansion

- Food service course.

Staff

- Provide training and support to academic teachers as they enhance the career exploratory aspects of their programs.

JACKSON-MANN
500 Cambridge Street
Alston 02134

787-5313

Ralph Mann
Principal

District 9

Constructed in 1975

AVERAGE ENROLLMENT: 28

BLACK: 43%
WHITE: 43%
OTHER: 14%

GIRLS: 61%
BOYS: 39%

AVERAGE ATTENDANCE: 93%

Course	Teacher	Years in Present School	Years in Boston Schools	Relevant Experience
Business, Education and Mathematics	McCauley	1	20	Office experience, 4-5 years; special training for deaf; bilingual
Career Exploration/ Career Awareness	Bianca	1	11	Also Guidance Counselor
Food, Home and Health Services	Gaughn	1	1	Special training for deaf; bilingual

EXTENT OF CO-EDUCATION IN INDUSTRIAL ARTS AND HOME ECONOMICS:

Full cross-enrollment.

COURSE SCHEDULING PROCEDURES:

Students grouped by ability;
Semester rotation;
Ten periods/week of career exploration.

SPECIAL NEEDS PROGRAMS:

Evaluation team for hearing-impaired students composed of a social worker, psychologist, audiologist, and a speech/language diagnostician.

Martin Luther King, Jr.

The King School, one of the magnet middle schools, is located in Dorchester. A solid old red brick building houses an orderly school community. Teachers within Industrial Arts and Home Economics are successful in developing students' basic skills, and are curious about the innovations implicit in career education. They are wary, however, about the value of a theoretical approach for their students. in the Guidance Department, long-range planning for career-related programs has begun.

FEATURES NOTED

Courses and Programs

- Innovative classroom techniques, such as role playing, are being utilized in the Home Economics Department.
- Special career education programs in place in special needs Resource Room include speakers, trips, and flexible course offerings.
- Career Day, conducted by Guidance Department, involved over 40 agencies and colleges.

Other

- Student Career Advisory Council has been organized.

NEEDS EXPRESSED

Facilities, Equipment and Supplies

- Update equipment in metals shop to include new lathes, vertical miller, shaper, power hacksaw.
- Improve security for Home Economics and Industrial Arts room.

Interest in Curriculum Expansion

- In Home Economics: consumer education.
- In Industrial Arts: modify drafting curriculum to meet student interests.

MARTIN LUTHER KING, JR.
77 Lawrence Avenue
Dorchester 02121
445-4120

District 9

Constructed in 1937

Will Ella Brown
Principal

AVERAGE ENROLLMENT: 587

BLACK: 45%
WHITE: 44%
HISPANIC: 9%
OTHER: 1%

GIRLS: 44%
BOYS: 56%

AVERAGE ATTENDANCE: 74%

Course	Teacher	Years in Present School	Years in Boston Schools	Relevant Experience
Clothing	Ruth Gordon	2	19	Other teaching, 16 years
Clothing	Ellen Vogel	1	3	
Foods	Bertha Kelly	13	14	Training in reading
Foods	Shirley Jones	7	13	Cafeteria management, 1 year
Drafting	John Young	7	7	Designer, 17 years
Graphic Arts	George Lantz	9	9	Pressman, 16 years
Metals	John Dunn	8	8	Machinist, 26 years
Woodworking	Anthony Vatalaro	7	9	Carpenter, 14 years
World of Construction	Arthur Radden	2	2	Other teaching, 7 years

EXTENT OF CO-EDUCATION IN INDUSTRIAL ARTS AND HOME ECONOMICS:

40% cross-enrollment among male students;
25% cross-enrollment among female students.

COURSE SCHEDULING IN INDUSTRIAL ARTS AND HOME ECONOMICS:

Elective;
Rotation five times a year;
All students - five periods/week.

GUIDANCE STAFF: 2

GUIDANCE/STUDENT RATIO: 1:294

Charles E. Mackey

The Mackey Middle School is located in one of the most ethnically mixed neighborhoods in the City of Boston—the South End. Built in 1959 as an elementary school, the Mackey has made a smooth transition to the status of a magnet middle school. Home Economics and Industrial Arts teachers have had considerable teaching experience and show remarkable energy and interest in their students. The teachers are strongly committed to the development of basic manual skills for each of their students through carefully individualized student projects.

FEATURES NOTED

Courses and Programs

- Industrial Arts courses, particularly woodworking, are tailored to the interests of each student.
- Title VII career education program for bilingual students has provided materials and teacher training.

Staff

- Strong network of coordination and cooperation among all Industrial Arts and Home Economics teachers.
- Teachers have shown initiative in acquiring equipment and supplies.

Other

- Students may elect Home Economics/Industrial Arts as a major course of study, and thus take up to ten periods per week in these two areas.

NEEDS EXPRESSED

Facilities, Equipment, and Supplies

- Construct dressing rooms for clothing classes.
- Revise general supply list so that it is more relevant to current projects.
- Provide repairs on a timely basis.

Other

- Discontinue practice of utilizing Home Economics and Industrial Arts classrooms as homerooms; students often damage equipment during homeroom period.
- Coordinate field trips taken by general subject area teachers with Home Economics and Industrial Arts courses.

CHARLES MACKEY
90 Warren Avenue
Boston 02116

266-1968

District 9

Constructed in 1959

Robert E. Lynch
Acting Principal

AVERAGE ENROLLMENT: 484

BLACK: 41%
WHITE: 43%
HISPANIC: 15%

GIRLS: 48%
BOYS: 52%

AVERAGE ATTENDANCE: 81%

Course	Teacher	Years in Present School	Years in Boston Schools	Relevant Experience
Clothing	Catherine Murdock	17	34	
Clothing	Katherine O'Connell	1	5	
Foods	Ruth Sullivan	4	4	
Metals	Thomas Canty	2	14	Construction foreman, 42 years
Woodworking	Robert Dow	2	24	
Woodworking	John Stanhope	2	9	Construction, 25 yrs.

EXTENT OF CO-EDUCATION IN INDUSTRIAL ARTS AND HOME ECONOMICS:

20% cross-enrollment;
Includes both Sixth grade, separate classes,
Seventh and Eighth grade, mixed classes

COURSE SCHEDULING IN INDUSTRIAL ARTS AND HOME ECONOMICS:

Sixth grade: assigned by homeroom, 2 double periods/week;
Seventh and eighth grade: elective, up to 5 double periods/week

BILINGUAL PROGRAM:

Program for 67 Spanish-speaking students.

GUIDANCE STAFF: 1 GUIDANCE/STUDENT RATIO: 1:484

Horace Mann

The Horace Mann Middle School, located near Dudley Station in Roxbury, is part of the City's model subsystem. The school provides one of the best educational programs available in Boston. While the school receives special attention and funds, the Horace Mann's success is largely a result of the energies of its teaching and administrative staff. Hard work, innovation and flexibility are combined here in a total educational setting. Career education has a major role throughout the school, and specific courses in Home Economics and Industrial Arts have instituted a variety of activities directly addressed to student interests.

FEATURES NOTED

Courses and Programs

- Diversified Home Economics courses organized to develop a sense of ethnic and cultural heritage.
- Industrial Arts teacher has developed crafts and trades shop.
- Cooperative projects among Industrial Arts, Home Economics and subject area teachers. For example, Spanish class and foods class cook a Mexican meal together.
- Program for guest speakers, and field trips.
- Guidance counselor collaborates with Industrial Arts in planning course units and projects.
- Site of "Bread and Butterflies" program, which is integrated into social studies program.
- Students participate in the Boston Youth Motivation Group.
- Pilot teacher-training program in computer math.
- Ecology program for 60 students, with classes held for one week at the National Seashore on Cape Cod.

Other

- Many efforts to increase parent involvement in the school operation.
- Active student council plays major part in planning school activities, field trips, and assemblies.

NEEDS EXPRESSED

Facilities, Equipment and Supplies

- Update equipment in woodworking shop.
- Provide additional materials for crafts and trades shop.

HORACE MANN
20 Kearsarge Avenue
Roxbury 02119

427-3340

Eugene Ellis
Principal

District 9

Constructed in 1929

AVERAGE ENROLLMENT: 263

BLACK: 50%
WHITE: 40%
HISPANIC: 9%
OTHER: 1%

GIRLS: 53%
BOYS: 47%

AVERAGE ATTENDANCE: 84%

Course	Teacher	Years in Present School	Years in Boston Schools	Relevant Experience
Clothing	Sarah Kimble	1	17	
Foods	Kathy Duffy	2	2	
Crafts and Trades	Michael Abruzzese	2	21	Window decorator, 5 years; some special needs training
Woodworking	Gordon Copatch	8	28	

EXTENT OF CO-EDUCATION IN INDUSTRIAL ARTS AND HOME ECONOMICS:

Full cross-enrollment, mixed classes.

COURSE SCHEDULING IN INDUSTRIAL ARTS AND HOME ECONOMICS:

Assigned by cluster;
Trimester rotation: All students - 5 periods/week.

BILINGUAL PROGRAM:

Program for 41 Portuguese-speaking students.

GUIDANCE STAFF: 1

GUIDANCE/STUDENT RATIO: 1:263