

**“to find a true and efficient
method of starting children
in life with a zest for knowledge,
and with senses quickened
and trained.”**



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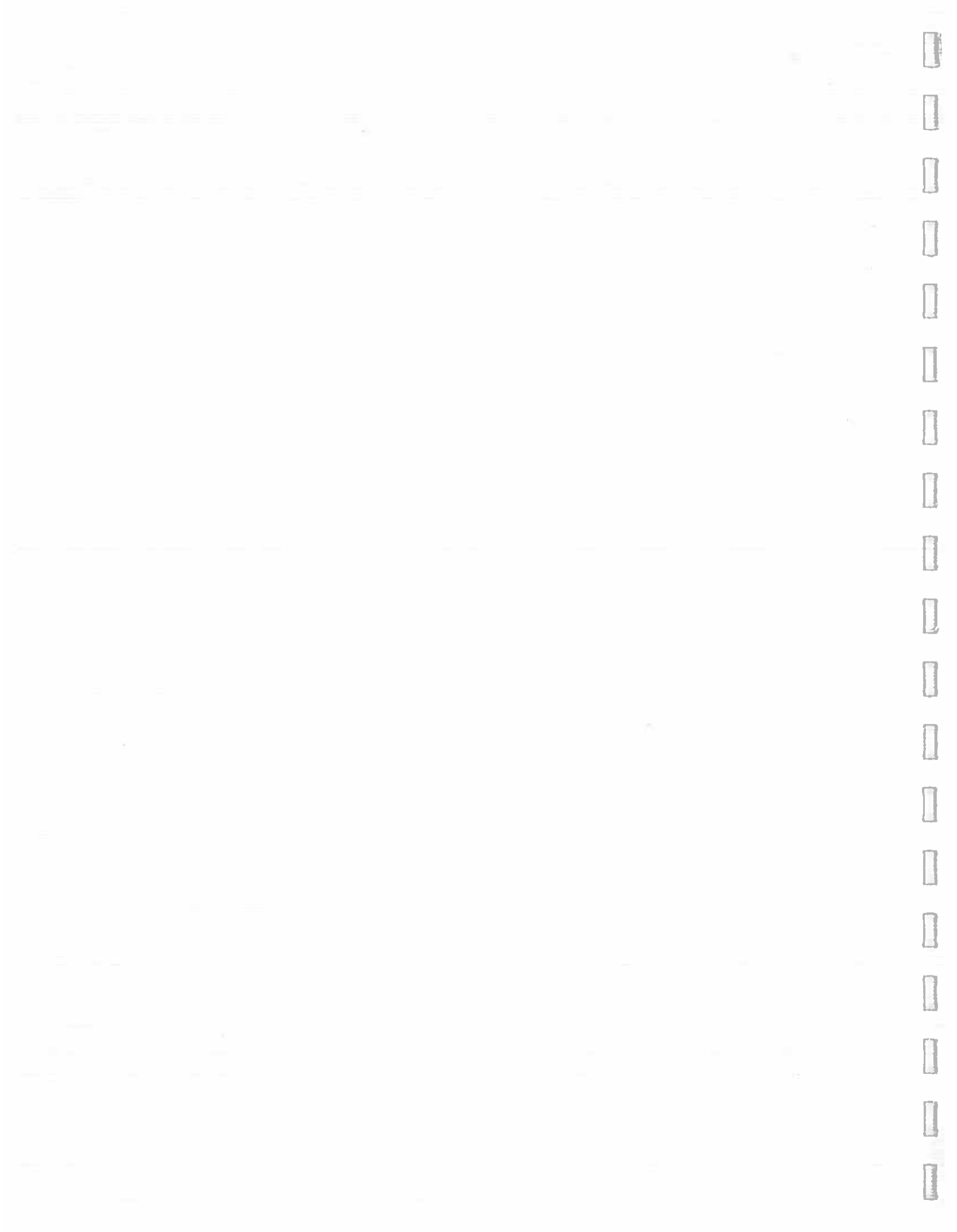
THE LEXINGTON ELEMENTARY SCHOOLS

A REPORT TO THE LEXINGTON SCHOOL COMMITTEE

BY

THE EDUCATIONAL PROGRAM STUDY COMMITTEE

February 15, 1976



FOREWORD

In this report on the educational programs in the Lexington elementary schools we shall attempt to do six principal things:

- Describe the major educational curricula in the elementary schools as well as the processes by which they are developed, taught and monitored.
- Describe some of the strengths and weaknesses of these curricula and processes as perceived by citizens, staff and students.
- Describe some of the unique aspects of the educational programs in the eleven elementary schools.
- Summarize the views of citizens, teachers and students on the effectiveness of these programs as well as on priorities, relationships and a broad range of other matters.
- Review the effectiveness of programs as measured by student performance on tests of basic skills and by other contributions schools make to the development of children.
- Derive from these diverse inputs a number of conclusions and basic recommendations about priorities and directions in elementary programs for the next decade.

On the basis of these primary conclusions, we shall also make a number of recommendations on specific matters currently before the School Committee, including the matters of declining enrollment and proposed school closings.

The report ends with a brief summary of our main observations and recommendations. A more complete summary has been prepared so that it can be read separately. We hope that the School Committee and the School Administration will make the full report as widely available as possible in Town, because the educational context and the data bases underlying the conclusions can be made much more clear in the larger report; and there is a danger in either interpreting or implementing specific recommendations about schools unless the surrounding educational context and the underlying educational priorities have been made clear.

We have not been able to delve into every specific issue concerning elementary education in our Town. We have done what a volunteer citizens committee with ten members can do with maximum effort in

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eleven months time. The effort involved over seventy-five two-hour meetings of the committee and several thousand man-hours of work by the members.

What we found, for the most part, is very good. There are some wonderful things happening in our schools. The variety of these reminded us that we have come a long way since the first 20' x 28' school house was built on Lexington Common in 1715 -- or even since a hundred years ago, when the objective of the Lexington School Committee was "to find a true and efficient method of starting children in life with a zest for knowledge, and with senses quickened and trained." And yet, in reviewing today's complex system, we found it helpful, from time to time, to bear in mind that simple statement of purpose.

We did find a few weak links that must be strengthened if we are to continue to provide the quality of education which our citizens want for their children. We shall speak very directly to what needs to be done about these things.

We hope that our findings will be of assistance to each and every person reading this report in determining where he or she can best help in improving the quality of education in the Lexington Elementary Schools.

There is one further thing we would like to say about the interpretation of our conclusions: We have made every effort to ensure that our recommendations are practical proposals. From the beginning of our study, we have been aware of three important practical facts relating to education in Lexington. First, for a number of years the Lexington schools have enjoyed a reputation for creativity and excellence in education. The creative spirit of education here is important not only in the education of Lexington children but also to the development of our Town. Second, in the last few years a feeling has developed in the minds of numbers of parents and citizens that the schools may be slipping a bit or that the schools aren't quite doing what these individuals feel they ought to be doing. This is in part a reflection of a growing national concern about "basic skills" and it is in part a reflection of the greatly increased set of expectations we have come to have of our schools. Third, the state of our national economy and the increasing tax burdens which citizens are asked to bear argue strongly for moves to economize in operating our school system. Declining enrollments make this appear to be a realistic possibility. We feel that, as a result of our work, we have a much better picture of (i) the extent to which the reputation of our school system is deserved and what some of the things are that we need to do in order to continue to deserve that reputation, (ii) the level and form of citizen concern about priorities or performance in the schools, and (iii) the degree of citizen concern about school expenditures. These have influenced our thinking substantially.

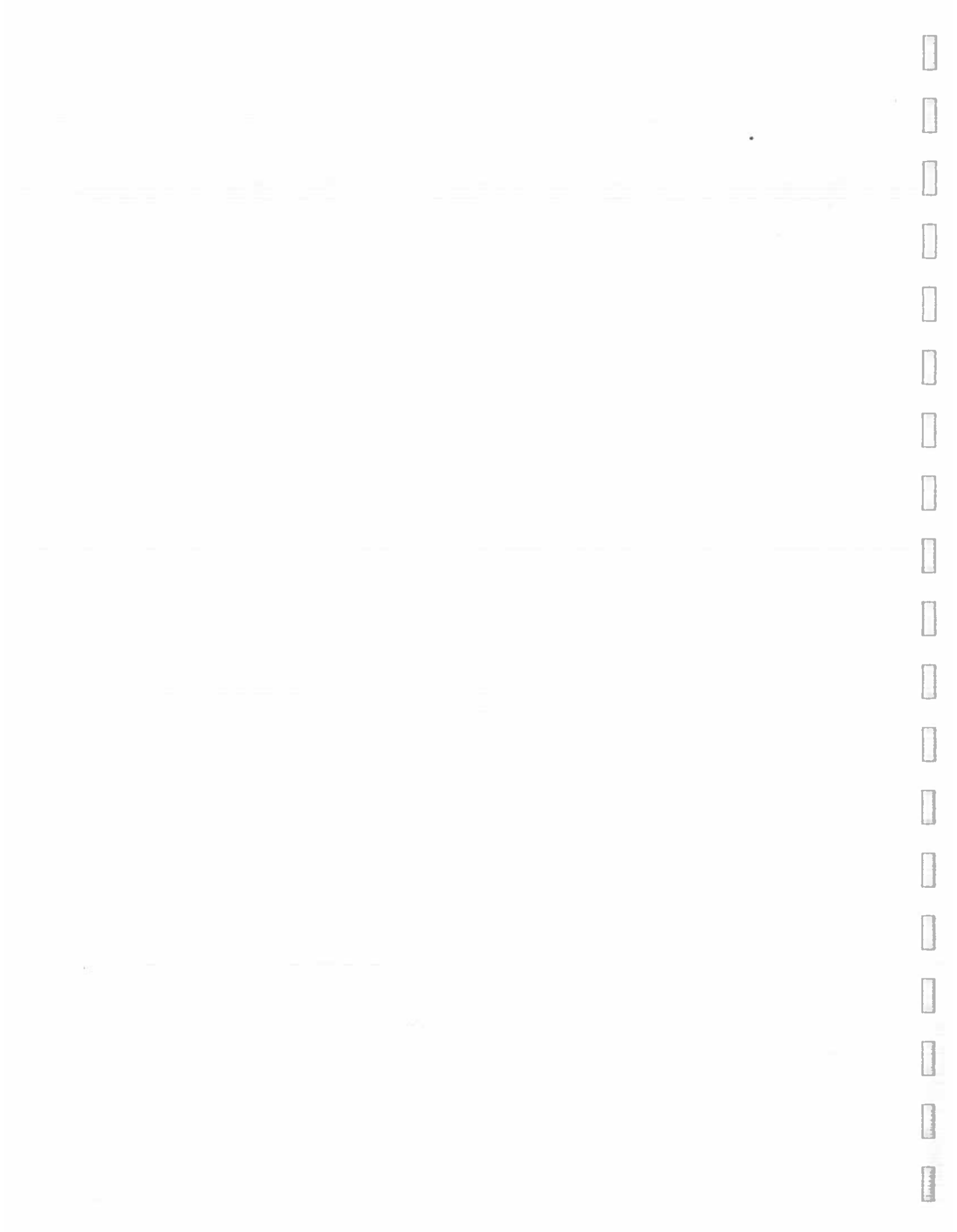
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We have made recommendations aimed at preserving the unique positive qualities of elementary school education in Lexington, at modifying curricula and processes in ways which bring them more into line with the priorities we perceive many members of the citizenry and teaching staff want, and at doing these things in ways which should still allow the school budget to be maintained within limits acceptable to the Town's citizens. We do recommend that resources be devoted to some important educational activities which are now being only partially attended to and we also argue with both evidence and analysis for the preservation of some of the uniquely valuable aspects of our educational system which might, in the first round of analysis, appear to be natural candidates for elimination; but we do not urge that these things be done as all other costs are allowed to continue on their "natural" upward courses. Thus we feel that our proposals are not only important but practical, if certain priorities are set and followed by the School Administration and the School Committee and if the citizenry will take note of its own stated priorities and not expect the school system to be all things to all people.

We are grateful to the thousands of students, teaching staff members and citizens who have taken the time to give us their thoughts on various aspects of education in Lexington, particularly to the principals and teaching staffs of the eleven elementary schools, who took extensive time from busy schedules to talk with us frankly from their professional perspectives about elementary education. We are also grateful to Mss. Pat Hadley, Elizabeth Haines, Sue Larsen, Liane Reif-Lehrer, Hannah Mollo-Christensen, and Margot Tutun, who helped us with our interviews in the elementary schools, to Mr. Walter Koetke of the Lexington High School, who helped us with data processing, and to all of the members of the central office staff of the School Administration, who provided us with information and responded positively each time we asked for help. In this connection, we would like to give special thanks to Mr. Richard Barnes, to Mrs. Ruth Dalrymple, and to Mrs. Elizabeth Cuevas, who willingly and often grappled with the tasks we threw their way in addition to all of their normal duties.

Respectfully submitted,

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I

SCOPE OF THE STUDY

I A. The Task

The Educational Program Study Committee (EPSC) was appointed by the Lexington School Committee in February 1975 and charged as follows:

The first charge to this committee will be to define the educational program now offered in the Lexington Public Schools, and to describe its strengths and weaknesses or problems. The committee shall define an educational program which best represents community priorities (at the elementary level first). This study will provide an opportunity for parents, teachers, and other representative citizens of the Town to express their concerns and add another dimension to the information being solicited by the (School) Committee before a decision is reached relative to the School Building Survey.

The charge was augmented by the School Committee in April 1975, as follows:

To keep in contact with the School Committee as the work progresses.

To not limit the work to issues raised in discussions of school closings, even though the committee is expected to make an input to those discussions prior to the first decision by the School Committee.

The committee was established by the School Committee during the first period of active debate of the Lexington School Facilities Study, a report prepared for the School Committee by the firm of Drummey-Rosane-Anderson, Architects.¹ In the light of projected enrollment decreases, this report proposed a schedule of school closings and renovations under the architects' charge "to determine what degree of equality of educational opportunity was afforded each child as this may relate to existing physical plant" and "to make recommendations, where necessary, as to how this equality could be economically achieved." The debate brought strong reactions from parent groups in schools earmarked for closing, as well as questions about the accuracy of enrollment projections, about dislocations that would occur, about the amounts of money that would really be saved, and about the relationship or

¹ LEXINGTON: School Facilities Study, Drummey-Rosane-Anderson, Inc., Wellesley, Mass., 1974.

importance of facilities to education. The School Committee, recognizing the importance of public dialogue on such issues, appointed four citizen study committees with these broad objectives in mind:

- To allow for public discussion when it is most productive for those involved.
- To gather more information and disseminate it to the public.
- To bring about a balanced perspective of the issues involved.
- To be ready to make a decision on the date set.

One committee was to study and up-date enrollment projections, a second was to study cost implications of the School Building Survey, and a third was to study the reassignment of pupils and the redistricting which might be necessary or advisable when schools were closed.

The charge to the Educational Program Study Committee was accompanied by a list of eighteen preliminary questions from the School Committee which reflected some of the issues about the relationship of facilities to education.

- Is there a relationship between the size of the building and the effectiveness of the educational program?
- Does "equal educational opportunity" only relate to physical plant? Are there other educational opportunities and values being provided in the older buildings?
- Can the staff provide the educational program and express Lexington's philosophy of education in the older schools as well as in the newer schools?
- Does the educational environment and "feel" of a building affect a child's perception of his/her worth and sense of belonging and thereby affect his/her ability to learn and grow?
- Should Lexington maintain schools of varying sizes in order to provide choices of educational atmosphere and philosophy? (What sizes?)
- Do the teachers feel they work in inadequate surroundings and find that their assignment to the older buildings limits and handicaps their aspirations as teachers?
- Do the principals of the "older" buildings feel that there is unfair competition from the "newer and larger" buildings in relation to their abilities to express educational philosophies and programs?
- Can the specialized and variety of spaces required for carrying out the educational programs be provided for in the older buildings?

- Are all the spaces described on page 7 of the School Facility Study necessary for carrying out the programs?
- Can the older schools provide for the handicapped student without major renovations?
- Are the major renovations as proposed in the School Facility Study necessary for carrying out the educational program?
- How does the school (or could the school) function as a community facility?
- What will be the impact of closing the older schools on the neighborhoods?
- ..On after school programs and opportunities for play?
- ..On parental participation?
- Should overhead costs and other economical reasons justify closing schools?
- Should the town invest money in renovation of the older buildings?
- Should the town invest money in renovation of the buildings to remain open?

I B. Organization

When the committee (EPSC) met for the first time, the members elected Ronald Edmonds chairman and discussed who they were and how they thought they had come to be on the committee. The group concluded that it had not been intended to be a representative body, even though the members' residences were distributed widely over the town, and that the members must have been chosen largely because of their involvement in education and their professional experience in educational assessment.

The committee was to meet on the average of more than once a week for the following eleven months. The first month involved intensive discussion of the eighteen specific questions provided by the School Committee, as well as discussion of the broader charge. The result was a report to the School Committee early in April 1975 stating two preliminary conclusions: (i) that the questions raised about the meaning of "equality of opportunity", the relationship of facilities to education, and the impact of school closings on education were sufficiently serious that no decision should be made to close any schools for September 1975; (ii) that the task given to the committee was sufficiently substantial that another year's work would be required to complete an adequate study even of the elementary schools. The report also reformulated a number of the specific questions under discussion, separating those relating facilities directly to educa-

tional program from those relating to educational programs independent of physical facilities:

- What, specifically, are the educational facilities available at the newer schools which are not available at the older ones?
- How important are these facilities for the education of the students?
- Do the educational programs at any of the older schools have important qualities and characteristics not found in the newer schools?
- Does the physical character of the newer buildings as contrasted to the older buildings impose different educational philosophies?
- How important is the size of a school in determining the quality of its educational program and educational environment?
- Do the current parent concerns regarding proposed school closings imply a reaction against the educational philosophy which they sense underlies the recommendations of the School Facilities Study?

- Are there alternatives to the school closings for effecting economy as pupil population declines?
- Does the present pursuit of "equality" tend to reduce the variety which may be a valuable part of an educational system?
- What do the citizens of Lexington mean by "equality of educational opportunity"?
- What is the relative instructional effectiveness of the Lexington elementary and secondary schools?
- Does the size of a student population or the age of a given school building have significant correlation with the quality of education?

During the discussion of the first report, the School Committee urged that EPSC concentrate for the first "year" on the educational programs in the elementary schools and that a major report be submitted by January 1976. The members agreed that they would make every effort to report by January, with their primary (but not exclusive) concern in the intervening months being the elementary schools. The School Committee also urged that contact be maintained with it as the work progressed, and this was subsequently done, through brief progress

reports and the submission of portions of the data as they were collected and digested.

Just prior to the April meeting with the School Committee, Ronald Edmonds fell ill and Kenneth Hoffman was elected chairman pro tem, and subsequently chairman when Mr. Edmonds' doctor ordered him not to resume his role as chairman.

After the April report had been presented, work was begun on an intense study. The committee organized into four subgroups (with overlapping memberships), according to the interests and expertise of its members:

- Surveys (questionnaires)
- Interviews
- Pupil Performance Data
- Curricula

The activities of the subgroups were coordinated and reviewed by the main committee. In fact, because of the limited size of the committee, the tendency was for all members to contribute at one time or another both ideas and substantial work to each of the activities. The results of the four overlapping efforts have been consolidated by the whole committee and placed in the perspective of this report.

I C. Surveys

The surveys which the committee used were designed to gain the opinions of all concerned about the full gamut of issues before the committee, except those issues which were either too complex or required too substantial a background for responses to be meaningful: What do citizens, teachers and students feel about the relative importance of the goals of our schools? About the importance of facilities and equipment? About school size? How do they rate the instructional effectiveness of various educational programs?

I C. 1. Staff/Student Survey

During April, while organizational matters were being discussed, work was already under way on three questionnaires, to obtain the views of students, teachers, and administrators on such things as curricula, facilities, teaching, educational environment, and goals. The work was pushed ahead rapidly because it seemed vital that these opinions be obtained during May, before the 1974-75 school year ended. The three questionnaires, plus a summary and detailed compilation of the results which bear on the elementary schools, constitute Appendix A of this report. Questionnaires were distributed to:

- 450 teachers and administrators at all levels in the school system
- 1,800 students in grades 4, 5 and 6
- 1,290 students in grades 7 -12 (600 high school, 690 junior high school).

These represented roughly 80%, 100% and 30% samples in the three categories. Each questionnaire contained several open-ended questions, which called for written or "essay" responses. This was because the committee wanted those directly involved in the schools to express in their own words what the strengths and weaknesses of the schools were, what the goals of the school system should be, what they liked most (or least) about school, etc. The answers to multiple choice questions were tabulated on the high school computer before school ended. Over the summer, all of the 15,000 answers to open-ended questions were read and recorded, grouped and summarized by members of the committee.¹

I C. 2. Citizen Survey

From the beginning of its work, the committee aimed at a town-wide questionnaire to obtain citizen views on educational priorities, on specific educational programs, and on the relative importance to education of facilities, neighborhood location, etc. Concentrated work on the questionnaire was done in the fall. Results from the staff/student survey were used to help frame some of the questions. Several difficult decisions had to be made about the questionnaire: (i) Since preparation time and other committee efforts made distribution before November 15 unlikely, and since a report was to be ready by January, a decision was made reluctantly to include only one open-ended question-- a very general one asking for any "other" comments. (ii) Since there appeared to be strong feelings in Town about some school issues, it was decided not to use a preselected sample but to give all citizens an opportunity to express their views. (iii) To keep costs down, it was decided to mail questionnaires, one per household, through the school offices.

Early in December, the citizen questionnaire went out to 9,300 households in Lexington. Slightly more than 2,000 responses were received, about 1,300 from parents of school-age children and about 700 from citizens without school-age children. These represent in each case samples in the 15-25% range. The results of the survey were tabulated by Cambridge Computer Associates, after it was determined that this would be cheaper than doing it within the school system.²

I D. Interviews

The interviews which the committee conducted attempted to obtain answers to many of the same questions addressed by the surveys but in a very different mode and setting. What has been the operative philosophy of the school system? How is continuity among schools or for a given student achieved in the present Lexington system? What is the

¹ Copies of the questionnaires and a summary of results can be found in Appendix A.

² A copy of the questionnaire and a summary of results can be found in Appendix B.

structure of the basic curricula? What are people proud of about their schools? Do the personnel of a given school feel they are achieving the objectives of the school's educational program?

Two types of interviews were used.

I D. 1. Individual Interviews

These were conducted with the five elementary school principals who are the program managers for reading, language arts, mathematics, social studies, and science, as well as with five of the individuals who have been responsible for coordination of town-wide programs in the Lexington Public Schools: Mr. Richard Barnes, Director of Information, Research and Federal Programs; Dr. Frank DiGiammarino, Coordinator for Planning and Curriculum; Dr. Rudolph Fobert, former Superintendent; Dr. Jack Monderer, Director of Pupil Personnel Services; and Dr. Constance Murray, former Coordinator of Special Programs.

I D. 1. Team Interviews

During the period October 15 - November 25, five two-person teams conducted a series of interviews with the principals, teachers, students and parents in every elementary school. Each team consisted of one member of the committee plus one citizen who had been asked to help and was assigned one large and one small school. (Obviously, one team dealt with three schools.) Teams had been supplied ahead of time with background material on the school system, which included a summary of the attitudes and concerns of 1,800 elementary school students as well as summaries of the town-wide frameworks for curricula in language arts, mathematics, reading, science, and social studies. They spent a full day in each school, interviewing the principal and six or more teachers. They also talked with students. They then spent an evening with each parent group. While obtaining answers to specific questions about educational programs, teams attempted to develop a "picture" of each school, which would encompass a feeling for (i) the atmosphere of the school and relationships between teachers, pupils, parents and principals, (ii) the special characteristics of the school's educational programs, and (iii) some of the strengths and weaknesses of the school.

I E. Pupil Performance Data

The early establishment of the group on Pupil Performance Data, a group with a more specialized focus, was stimulated by the committee's awareness of (i) growing citizen concern about "basic skills" and the means used to evaluate pupil performance, (ii) the complexity of gathering and analyzing data bearing on such topics. Three basic questions were on the minds of committee members:

- Is the average level of achievement (in basic skills) of children in the Lexington Public Schools going up, going down, or holding steady? Why?

- Are there significant IQ-corrected differences between the achievement of children in the various Lexington elementary schools?
- How well is our school system doing, as measured by pupil progress in various basic skill areas?

All of the work was carried out with full cognizance of the sensitivity of some of the information and the limitations of standardized testing. Three separate statistical analyses were carried out in an attempt to answer these questions. For the first question, only a crude analysis could be done, using the available town-wide data giving (by year and by grade) average student scores on the Iowa Test of Basic Skills. To address the second and third questions, studies were made of the group of Lexington students who were in seventh grade in the year 1973 and who had attended one and the same Lexington elementary school in grades two through six. The students were grouped by approximate school size (small, medium or large school), to avoid identifying any individual elementary school. Then, to attempt to answer the second question, an analysis of covariance was run. To attempt to answer the third question, another analysis was run of the same data, comparing achievement scores in reading, mathematics and spelling with the scores predicted by age, grade level and IQ, according to a formula devised by Professor Helmer Myklebust of Northwestern University.¹

I F. Curricula

The general concerns of the subgroup on curricula were: What are the basic knowledge, skills and concepts we are trying to teach students in the elementary schools? How is the effort to do this organized? How well is it working? What ought we to be doing? The group selected five subject areas for study -- language arts, mathematics, reading, science, and social studies. Discussions were held with the program managers and some of the specialists in these areas and with more than fifty classroom teachers. Guides, scope and sequence charts, teacher handbooks and sundry materials were reviewed. It should be emphasized that, although each such review was carried out by committee members knowledgeable in the subject area, the purpose was to develop a sound general picture of the curriculum, not to write a detailed critique of it.

The results of the committee's inquiries into curricula form a major part of Chapter III.

¹ For a detailed description of methods and results, see Appendix C.

II

THE ELEMENTARY SCHOOLS -- PHILOSOPHY

Any discussion of current educational programs in our elementary schools must be preceded by some general description of what the Lexington Public Schools have been trying to achieve over the last several years and how they have been trying to achieve it. Rather than present a committee description, which might be heavily colored by the committee's views of what needs to be changed, it might be more useful to begin with the following remarks, transcribed and edited from an interview in May 1975 with Dr. Rudolph Fobert, then Superintendent of the Lexington Public Schools.

The system aims at the optimum development of each child under the guidance of a competent, creative professional staff. No one person can conduct 11 elementary schools with 200+ classrooms and begin to meet this optimum. So you create as consistent a framework as possible which allows a creative staff to generate the diverse methods and programs they best teach with.

The dangers of such a system, of course, are obvious; we make mistakes in diverse ways, and total loss of standardization can mean chaos. We limit mistakes by recruiting highly competent staff, by weeding them out if they don't work well in the system, and by providing stability in several ways system-wide. We provide road maps for specific curricular areas, such as science and math and reading. Teachers have specific directions, specified objectives to be reached and suggested activities they begin with. How they meet the objectives is up to them. The stability is in the structure, the freedom is in their choosing how to teach and in encouraging them to try their own ideas. So we have a variety of teaching formats, methods and approaches from teachers -- each finding whatever way best works for them and their classes. But always with the basic structure in mind.

Probably the most basic element of the Lexington Public Schools' philosophy is this diversity. Not everyone learns the same way, not every teacher teaches best using the same format. A vital aspect of the process is monitoring, which helps maintain stability and keeps an eye on the end results. Monitoring is done through reports to parents (what each child performs and how well), and through principals' continuing evaluation of teachers and the teaching curriculum. People can be creative if you give them responsibility for their actions and we have found it works well.

Elementary schools are semi-autonomous. Each principal has his resources to arrange and re-arrange to best meet objectives -- which consist of general guidelines plus specific ones in some curricular areas. A principal knows he has 1 teacher for every 24 students, a specific amount of money per student, aides who provide 1 hour help per week for every three students, and a core of specialists. How he and his teachers choose to use these resources is largely left to them. We try to achieve consistency in a framework of common goals, based on a spirit of creativity which generates motivation and considerable effort from the staff. The Superintendent can buy time but not motivation or endeavor -- so we need to create an atmosphere which promotes these. And, in much the same way, we feel students also need the freedom to make mistakes they learn from. Though administrators take pride in their individual programs and maintain independence with great care, they concur basically with this general philosophy.

Our 32 program areas are each defined by:

objectives aimed at
resources to be used
activities suggested
measurements (evaluation) to be applied.

Each principal is responsible for a specific learning area, system-wide in the elementary schools. Giving them responsibility this way encourages their keeping in touch with developments in curriculum areas, insists (almost) on a wider perspective than concern with only their school would entail, and decreases jurisdictional disputes -- where each one feels obligated to defend his own territory and not have others coming in to tell him the best way to do it. It also necessitates in-depth studies of areas instead of just dealing with the nuts and bolts which daily pressures inflict on them.

We are trying to move slowly toward program managers in each area, and have done this to a larger degree in math and reading comprehension than elsewhere. We have made some progress in science and the social sciences. In the end, we should be able to provide more comprehensive education at no greater cost -- because of better planning. The Planned Program Budgeting Evaluation System (PPBES) reinforces this process.

The Continuing Curriculum Committees consist of faculty, all working voluntarily to continuously update and improve curriculum offerings. This grassroots responsibility is part of the basic philosophy of the system, and so far has generated an esprit de corps and considerable creative input. Summer workshops are the vital ingredient -- paid, intensive sessions where teachers can formulate and put into usable shape the materials and lessons

generated in the classrooms. It has, for us, been a highly successful venture in many ways. Our curriculum has found its way around the world and requests were so many we finally had to subcontract publishers to do the printing for us and charge educators for the materials.

Our salary scale is not high, as you probably know. Nonetheless, we have for many years been able to hire very high quality faculty. One of the major attractions is the variety of professional activities they can take advantage of; the other is the promise of diversity and freedom in the classroom. Quite simply, we're investing in human energy, with high expectations, in a climate which fortunately has been one of good morale.

III

THE ELEMENTARY SCHOOLS -- PROGRAM

The first task associated with the committee's charge to "define the educational program now offered" and "to assess its strengths and weaknesses" is to describe the present curricula, which prescribe at some level of specificity what is to be learned at different stages in various subject matter areas. From this point of view, the most important thing to extract from the philosophy and plan of organization of the school system is this:

The elementary school curriculum in, say, social studies is not controlled by a central directive which says that the school system has adopted the set of texts developed for grades one through six by a particular commercial publishing company and that all teachers are expected to use them. By and large, the elementary schools are autonomous and, within the contexts of their schools, individual teachers (or teams of teachers) are free to select and/or develop their own textual materials in the various subject matter areas. But the school system aims to develop and prescribe common objectives for various levels within each subject matter area, and then expects that each teacher will achieve these objectives.

Thus there are two basic vantage points from which one can describe or assess the curricula in our elementary schools. The first is the central vantage point, from which one asks what the town-wide guidelines are and what the strengths or weaknesses of these guidelines may be. The second is the classroom or school vantage point, from which one asks what the material is that teachers are actually presenting and what its strengths or weaknesses may be. The questions raised from these two points of view, of necessity, have been approached quite differently by the committee. The first set of questions was approached directly, by selecting five town-wide curricular areas for study. A thorough and direct study of the second set of questions would lead rapidly to evaluation of the efforts of individual teachers, something which the committee strongly feels is outside the scope of its charge. Therefore, questions about what is actually going on in the classroom have been asked directly only insofar as they relate to town-wide curricular frameworks or to the opinions of different groups as to the effectiveness or quality of various parts of the educational program.

III A. Five Town-Wide Frameworks

Of the thirty-two program areas identified within the school system, the committee decided to concentrate on Language Arts, Mathematics, Reading, Science, and Social Studies, though opinions were solicited, through surveys and interviews, on several more subject areas.¹ What are the town-wide frameworks (roadmaps, as Dr. Fobert called them) which have been developed in these areas? To what extent are they used in the various elementary schools? To what extent do they help or hinder teachers in accomplishing educational objectives in the classroom? To what extent do they ensure consistency of basic objectives in the various elementary schools or continuity from one grade level to the next in each student's education? These and similar questions will be addressed now for each area, based largely upon interviews with program directors, teachers and principals.

III A. 1. Language Arts

The Language Arts Guide presently being used was written in 1964 to insure continuity of instruction for all Lexington elementary students. Since that time, no resources have been allocated for workshops to revise, update or expand the curriculum. The teachers themselves serve as coordinators; there are no specialists or support personnel for Language Arts.

Structure and Content of the Program

The Guide has three parts:

Goals and Sequence - sequences and charts for continuity of instruction

Resource Units - booklets for different grade levels

Manual for Form and Style - standard for manuscript and mechanics of writing

The plan of the guide is developed through several booklets which delineate Philosophy, Major Skills, Specific Skills, Implementation Activities, Resource Units, Teaching Units, Classroom Learning.

The contents are based on linguistics, the science of language. "Generative transformational grammar proceeds on the sound assumptions that what a child learn is not an infinite number of sentences, but a mechanism - a machine - for generating an infinite number of sentences."

(Language Arts Guide, P.4)

¹ These included Art, French, Human Growth and Development, Music and Physical Education.

teachers: The following materials are currently being used by some

<u>Year</u>	<u>Language Arts Guides</u>	
1963	Goals and Sequences	Grade 1-12
1966	A Primer in Linguistics for Teachers	
1964	Manual for Form and Style	Grade 1-12
1967	Help Them to Listen	
1964	Resource Units	Grade 1-2
1964	Resource Units	Grade 3-4
1964	Resource Units	Grade 5-6
1964	Resource Units	Grade 7-8
1964	Resource Units	Grade 9-12
1966	Tests for Structure in Resource Units	Grade 3-8
1963	Supplementary Exercises for Resource Units	Grade 3-6
1963	Discovering Spelling Pattern	
1966	Punctuation and Meaning through Intonation	Grade 3-8

The program is a thorough, comprehensive, scholarly work for grades one through twelve. It is:

Hierarchical - There is an overall goal for each area and each area is divided into units for each grade.

Creative - The "what to teach" is in the guide, many suggestions are provided in the booklets and yet the teacher is free to use her/his own imagination in "how to teach."

Comprehensive - All areas of language arts are covered for all grades. If the program is followed for each year according to the guide, students should master the entire field by graduation from high school.

Up to Date as to Content - It is based on a code-emphasis, scientific linguistic approach to the teaching of language.

It does however need serious revision, and many teachers have developed their own program using the Language Arts Guide for concepts and goals to be accomplished. Miss Elizabeth Murray is the new program manager and plans to recommend a number of revisions.

III A. 2. Mathematics

For the last eight to ten years, Lexington elementary schools have been using a math program which was developed by the teaching staff to augment traditional materials with some of the modern concepts and modern spirit usually referred to as "the new math". The program

is carefully conceived and has an ambitious set of objectives.

Structure and Content of the Program

The subject matter is divided into 14 levels with three additional enrichment levels. The concepts, skills and appreciations for each level, as well as the sequence in which they are to be presented, are briefly summarized for teachers in the Scope and Sequence Chart. One level may have as many as 30 or as few as 15 entries.

An extensive teacher's handbook for each level amplifies each entry from the chart in three ways:

- it makes clear what each teacher is required to cover;
- it describes a number of activities (techniques) the teacher may use to get certain ideas across;
- it lists page references for specific material in a dozen or so standard textbooks

Subject to these constraints, the teacher (and school) are free to choose textual materials.

At the beginning of each year, students are given an inventory test which is used to identify their starting level for the year. The scope of the test goes a bit above and a bit below the student's final level for the previous year.

At the end of each level, students are given a level test. Each score is recorded on the Mathematics Pupil Profile Chart. Test results indicate the topics a student may need to review before proceeding to the next level. The tests are not "mastery tests" (which require a minimum score be attained before moving on to the next level.)

The content of the curriculum consists basically of the computational arithmetic of whole numbers, integers and fractions, augmented by some elementary geometry, measurement (including time and calendars), and a fair amount of set terminology and/or set operations. The influence of the set-theoretic point of view is found throughout most of the material. This was introduced to make the approach to mathematics more conceptual and, hopefully, more interesting to students.

The staff consists of all elementary classroom teachers, three math specialists, and the program manager, Mr. Paul Foley.

Revision of the Program

The program is currently under substantial revision. Most set terminology is being dropped, there will be more emphasis on basic computation and problem-solving skills as well as on mastery. The new program is only partially completed and is being piloted at Bridge School and by 25 other teachers in the system.

In the revised program, the seventeen separate teacher handbooks have been replaced by one (thick) book, which is a revised and expanded revision of the previous scope and sequence chart. Material which has been dropped from the former coverage includes the following: union, intersection and Cartesian product of sets; subsets, complements, and partitions; the concept of one-to-one correspondence between sets (and equivalent sets); number bases other than base ten; the distinction between number and numeral. More attention is paid to money (making change), and a bit less attention is paid to geometry. At this stage, mastery is applied to calculation, much more so than to problem-solving or concepts.

III A. 3. Reading

Seven years ago, the Reading Summer Workshop designed a program to provide step by step guidelines for student progress in grades one through six, based on "what" should be taught. Teachers found the program useful as a guide, but not sufficiently specific. So the Reading Workshop of 1970 developed a Scope and Sequence Chart and three accompanying activity books.

In the spring of 1971, funding was made available to develop a reading program to accommodate the individual learner. This program, LIRSP, stresses methods and materials for individualized learning. The three year goal was

- Terminal Performance Objectives K-6
- Criterion Tests K-6
- Learning Activities K-3

These exist on paper only.

The Lexington Individualized Reading Skills Program (LIRSP) program has gradually been introduced in all kindergartens, grade 1 in five schools, and grade 2 at Harrington, Hastings and Parker. By the end of this year, there is intended to be a LIRSP profile on every first grade child in the school system.*

In 1973 The Terminal Performance Objectives, The Teacher Manual, and a Resource Booklet were written. The program will be in a continuous process of revision.

* And also grade 2 at Bridge and Munroe and grade 3 at Harrington, Hastings and Parker.

MEMORANDUM

To: Members of the Lexington School Committee
From: The Educational Program Study Committee
Date: March 15, 1976
Subject: Research methods and procedures

There seems to be an interest by some School Committee members in knowing more of the details of some of our methods. This memo has been prepared in the hope that it might answer some of the questions and save a bit of time. It is intended to augment the descriptions of methods given in the committee's report and in our oral presentation to the School Committee on March 1.

We adopted procedures which would enable the committee to

- (i) adhere closely to the charge given us by the School Committee:
 - define the educational program now offered by the LPS
 - identify the strengths and weaknesses of that program
 - define an educational program which best represents community educational priorities.
- (ii) make the best use of available sources of information, of the time and energies of all concerned, attempt to minimize costs and meet the calendar suggested by the School Committee.

I Staff/Student Survey

A. Preparation:

Staff and student questionnaires were designed after

- .. researching and studying instruments used successfully in other places
- .. interviewing the Superintendent, Assistant Superintendent, some program managers, administrative staff and teachers
- .. identifying questions that would prove most helpful to fulfill the charge.

Six drafts were refined into a final instrument by the end of May. Staff and student feedback were taken into account after a 50-person pilot study was completed using the fifth draft.

4200 questionnaires were reproduced for three different groups: teachers and administrators; students grades 4, 5, 6; students grades 7 - 12. Committee members (and their families) collated, stapled, sorted, packaged and labelled all these materials.

B. Distribution:

Materials were delivered to principals after advance notification by Central Office. Sample kits for each principal were included.

C. Return:

The questionnaires were returned early in June from 450 teachers and administrators (80% sample), 1,800 students grades 4, 5, 6 (100%), and 1,290 students grades 7 - 12 (30%).

D. Analysis:

Questionnaire responses on multiple choice questions were tabulated by computer at the High School. Groupings and cross-tabulations used are shown on the next page. After tabulation, completed questionnaires were returned to the committee for analysis of responses on open-ended questions. The 15,000 answers to such questions were read and tabulated over the summer by committee members and initial summaries of the results written, so that school interviews could begin in the fall and the citizen survey be completed by Christmas. Results from the three questionnaires and the cross-tabulations were compared for areas of agreement and disagreement. A summary of responses was written for the committee's report, identifying patterns which were or were not definitive or clear.

II Interviews in Elementary Schools

A. Preparation:

Preparation for interviews in the eleven elementary schools began in May. Procedures used in studies of other school systems were reviewed. The format for the interviews was reviewed and revised four times between May and October. A kit was developed for each interview team which included the following:

1. A statement of the purpose of the interviews.
2. The charge to our committee.
3. Background information on principals.
4. The interview document developed over several months, with suggested schedules, arrangements and questions.

EDUCATIONAL PROGRAM SURVEY

DATA TABULATION

RESPONDENT GROUPINGS

Survey 4,5,6

Total sample per item

Cross tabulate question #2 a,b,c with remaining questions.

Survey 7-12

- a. Students 7-9 by Junior High School
- b. Students 7-9 as one group
- c. Students 10-11 as one group

Survey Teachers, Administrators
Specialists

- a. Elementary teachers
- b. Junior High School teachers
- c. Senior High School teachers
- d. Total Teaching staff, K-12
- e. Specialists, K-12
- f. Administrators
- g. Total respondents, a through f

Cross tabulate questions #16 with elementary teachers, for frequency distribution on questions 3 through 31 on Card 1 and questions 23-31 on Card 2.

Question #	a	b	c	d	e	blank	total responses
4,5,6 (number)							
(%)							
Mu 7-9 "							
Cl 7-9 "							
Di 7-9 "							
10-12 "							

T/A/s

5. Five curriculum summaries -- language arts, mathematics, reading, science and social studies -- derived from interviews with program managers and specialists.
6. A copy of the committee's interview with Dr. Fobert, giving his description of how the town-wide system is intended to function.
7. The questionnaires completed by students grades 4, 5, 6 in those schools to be interviewed by the team.
8. Five working papers of our committee, summarizing questionnaire responses of elementary students, junior high students, junior high quotes, staff views on physical facilities and school size, and elementary teacher views on same, cross tabulated by size of teacher's school.

B. Pairing of the Schools:

Each of the five teams was assigned two schools (one team three schools). Assignments were made randomly, subject to two constraints:

1. The paired schools included one smaller/older school and one larger/newer school.
2. No member was assigned a school with which he/she or his/her children had ever been associated.

C. Selection of Teams and Staff to be Interviewed:

Each team consisted of one committee member plus one citizen volunteer, identified with the help of the PTA Council. Staff to be interviewed (in addition to the principal) were selected based upon willingness to be interviewed plus suggestions from the PTA president in the school and the principal. Every attempt was made to get a sampling of teachers with diverse views, varied amounts of experience, different roles (specialist, etc.) and various grade levels. Between six and eight teachers were interviewed in each school.

D. Conduct of the Interviews:

The teams spent a full day in each of their schools, interviewing the principal and staff members, plus observing and talking with students. An evening session was held in each school, to which all parents were invited. Parent views were obtained on programs, the strengths and weaknesses of each school, and an opportunity was provided for any and all parent concerns to be expressed.

Interviews with administrators, teachers and specialists were based

on questions such as the following, designed to obtain professional staff assessments and experiences:

As a Principal -

1. What educational philosophy underlies what happens in this school?
2. What formats, teaching styles are currently in effect here?
3. Do they each effectively meet the goals set for them?
4. What are the primary strengths of the educational process and program here?
5. What areas need strengthening?
6. What changes would you make if you could, to create a more effective educational program here?
7. What kind of evaluation process do you use with staff?
8. What channels of communication are actively implemented here, and how?
9. Do you feel parents generally support staff efforts? How are they involved in the educational program itself? the process itself?
10. Are there specific "things" which detract or inhibit educational efforts in this school, i. e. facilities, equipment, lack of time, space, too much paperwork, lack of staff, resources, support of any kind?
11. What, ideally, would be the most effective role parents could play which would foster the educational process at this school?
12. Do you feel staff morale is high?
13. What changes do you feel would most effectively assure outstanding education in Lexington across the system?

As a teacher -

1. What do you feel is unusual or unique about the educational program here?
2. What techniques, activities, approaches do you use to best meet the needs of your students?
3. To what degree are you involved in creating the educational program you teach?
4. What kinds of additional support if any would allow you to teach more effectively?
5. Do you feel this school achieves the educational goals it has set, to a reasonable extent?
6. If you could change the program or process, to what two areas would you give priority?
7. What changes do you feel would strengthen the educational environment in this school?
8. What do you particularly enjoy about working in Lexington? What drawbacks do you see?

Defining the curricula, and identifying their weaknesses and strengths, required a multitude of questions to be put to teachers and principals. These were not identical across the system because programs vary between schools. For example, the latest math program is being piloted at Bridge, but only to some extent in other schools. Representative questions are listed below.

Mathematics -

1. Is the new program as satisfactory as the old?
as effective with students?
easier to teach?
2. Are weaknesses and strengths obvious? What are they?
3. How does the new revision differ significantly from the old
in content? in technique? measurements of student mastery?
4. Has the emphasis on individualized teaching allowed more time
for students who need extra help?
5. Do you find the program basically meets the learning abilities
of most of your students?
6. Children and teachers rated art, music and math highest in
the June survey. Do you agree with this assessment of math?
7. Do you find you need additional materials and resources, or is
the math program comprehensive and creative enough as it is?

Science -

1. Do you feel you can teach a comprehensive science program
without extensive support from science coordinators? Do
you have sufficient equipment, textual materials, experience,
background?
2. Has the reeducation of science coordinators affected your stu-
dents' study of science to a significant degree?
3. Do you feel the present science program is well-balanced?
Does it tend to be heavy in some areas, i. e. ecology, and
skimpy in others?
4. Do you feel there is continuity between grade levels?
5. Is science easy to fit into the learning schedule using the
materials available now?
6. What changes do you feel would strengthen science here?
across the system?
7. What are the strengths of the current program?
8. What materials do you use now?

Social Studies -

1. Does the definition of social studies as "the study of man in his
relationship to other people" essentially describe the basis
of the program here?
2. Is the new Social Studies Curriculum (developed in the '60's
and updated in 1971) comprehensive and current enough to
prepare students for the society they will live in as adults

(as much as any one study can)?

3. Are there changes needed in the present program?
4. What are the strengths, weaknesses of the materials you use?
5. What other materials do you use to implement the S.S. program, if any?
6. Which of the Unit Guides (Units) do you find most useful?
7. What kind of additional support, resources, etc., would make the program even more effective?

Language Arts -

1. Do you use the Lexington Public Schools Language Arts Guide in teaching language skills?
2. If so, do you find it effective? If not, what materials do you use? What do these offer that the LAP does not?
3. What strengths, weaknesses do you find in the materials?
4. Do you feel the Language Arts program effectively meets the goals set in this school?
5. Would it make sense to you, as a professional teacher, to correlate the Language Arts program with the LIRSP reading program?
6. What changes would you make, if any, in the present LAP here if you could?

E. Profiles of the Schools:

The interview teams wrote reports on each of their schools and submitted them to the chairman of our committee. All of the interview reports were read and discussed at a meeting of the full committee augmented by the other interviewers. The purpose of the meeting was to identify patterns and develop a format for presenting school descriptions in the committee's report.

III Citizen Survey

A. Preparation:

Work began over the summer on a survey, to identify citizen views on priorities and programs. Questionnaires used successfully in other communities were studied. Questions submitted by committee members were discussed, and a first draft was developed. Inputs were solicited from other individuals and groups. After several drafts, it was decided to keep the questionnaire brief, restricting it to questions which citizens could reasonably be expected to answer without large amounts of background information. A pilot study using the last draft was run on a group of 50 citizens, and led to clarifications and rejections of some questions which were too complex.

The final questionnaire contained 12 questions for all citizens, 9

additional questions for parents of children in the school system, 2 questions each for parents of elementary and junior high students, 1 question for parents of high school students, and 1 open-ended question for any "other" comments. It was prepared on a single sheet of paper, prestamped for distribution and return.

B. Distribution:

The citizen questionnaire was distributed through the facilities of the School Administration, and mailed to 9,300 households on their mailing list. This distribution method was selected to minimize costs and to provide each citizen with an opportunity to respond.

C. Return:

2,500 questionnaires were completed and returned (27%), although only 1,921 (21%) were received in time for computer tabulation. Two-thirds of the respondents had children in the Lexington schools, one-third did not. The computer tabulation was run twice -- once after the first 1,100 questionnaires had been returned and a second time after 1,921 were in. The percentages of respondents in various categories and the answers were compared for the two groups. The percentages of representation and response were virtually identical for the two runs, suggesting that (i) the 1,921 sample was properly reflective of response to the survey, (ii) returns had not been biased by individuals who rushed their questionnaires in because they had some particular axe to grind.

D. Analysis:

The computer tabulation included many cross-tabulations of responses against age group, length of residence, parental status, school affiliation, etc. The tabulation was carried out by Cambridge Computer Associates. When it was completed, questionnaires were returned to the committee so that answers to the one open-ended question could be read and tabulated by committee members. About 25% of the returns took advantage of this opportunity to make comments. A summary of answers and responses was written for the committee's report, following the standard format used with the Staff/Student Survey.

IV Pupil Performance Data

Methods used in the analysis of these data are described in some detail in the committee's report, especially in Appendix C. Here, we will add only the following technical comments.

The 18 analyses of covariance, which showed no difference in

performance between students at medium- and large-sized schools, all had the same format: the dependent variable was performance score (math, reading or spelling); the independent variable was school size; and the covariate was intelligence score. The large number of analyses was used to be sure that there was consistency between the various measures, and indeed there was. Using either the Stanford-Binet or Lorge-Thorndyke score as covariate, there were no school size related differences in performance; moreover, we used Lorge sub-test scores as a covariate for a more precise measure of intelligence for math performance, and again no school size related differences were found.

In the analysis of declining performance with increasing grade level, we examined repeated measures on each child, e. g. reading scores in grades 3, 5, 7. We grouped the children by medium (302) versus large (106) school and by high IQ versus low IQ. We did three separate analyses of variance, one for reading scores, one for math and one for spelling. In all three cases there was a highly significant effect of grade level, but no effect of school size. There were also some significant and near significant effects of IQ -- most significant in math.

V Other Methods

There was continuous reading and study by committee members working in various subgroups, focussing on tests, curricular materials, effects of school size, etc. Numerous individuals were interviewed. As each piece of research was done, aspects of it were built into subsequent investigations. Progress in understanding was discussed repeatedly in meetings of the full committee. The goal of most of the research and discussion was to allow a comparison, after all the data were in, of stated objectives and school goals with what actually happens educationally in the classroom and throughout the system.

Structure and Content of the LIRSP Program

The program provides the teachers with:

- a means of assessing the learner's entering reading skills
- the specification of reading skills in performance terminology
- an instructional sequence designed to assist the learner in the achievement of the performance of a reading skill
- a systematic means of monitoring the learner's continuous progress
- a means of evaluating the learner's performance in a particular reading skill

The program is designed around four areas of reading development:

- Word Recognition - by means of growth in sight vocabulary, phonic analysis and structural analysis
- Perceptual Skills - discriminating separate sounds in spoken words, distinguishing left from right, and handwriting
- Comprehension - by increasing the learner's vocabulary and ability to get the main idea from a passage
- Study Skills - locating information, skimming, evaluating material and organizing and summarizing data. The learner must be able to use a table of contents, an index, an encyclopedia, an atlas, a dictionary, be able to read graphs and tables, and to outline, take notes and vary the rate of reading.

Each specific skill has been written in the format of a terminal performance objective contained in a separate volume.

Assessment in LIRSP

A level placement test precedes each set of criterion tests. This enables the teacher to assess the learner's present level of reading, skill development in Word Recognition, Perceptual Skills, Comprehension and Study Skills.

There is also a PRE and POST Test for each of the levels, to indicate pupil mastery of the material; and there is a profile chart, to track each learner's progress through the grades.

The entire program is based on the Bucks County Word List (BCWL) which consists of 1185 common words divided into five levels. The program is

Hierarchical - There is specific order in which knowledge must be mastered, which leads to continuity through the grades (much like climbing a ladder.) One must master one rung before proceeding to the next.

Individualized - Each student moves at his or her own learning rate, and the Reading Skills Profile assesses mastery at each level.

Based on Criterion Referenced Tests - The learner's mastery of the material is used as an evaluation rather than performance on a standardized test.

Other Reading Programs

Those schools not using LIRSP are using a wide variety of materials and approaches. The majority of programs use the analytic (phonic) method and some use the synthetic (sight) approach.

A partial list of supplementary materials used by teachers in the system follows:

- Lippincott Books
- Durrell-Murphy Phonics Kit
- Peabody Language Development Kit
- Scholastic Paperbacks
- Ginn 360
- Super Books by Lippin
- Monster Books by Bowman Pub.
- SRA Reading Lab. Materials
- Barnell Loft Skill Series
- MacMillan Workbooks and Texts
- Educator's Publisher Co. Books
- Houghton-Mifflin
- Scott, Foresman Reading Record Series
- Heath Reading Caravan
- American Book Co.
- Continental Press
- Treasure Book Co.
- Lyons and Carnahan
- John Publications
- American Guidance
- Holt Rinehart and Winston
- McCord Ross
- Rand McNally
- Merrill Skill Series
- Harper & Row

Readers Digest Skill Builders
Benefic Press
Harcourt, Brace, Jovanovich
Milton Bradley Tapes
Modern Curriculum Press
Teacher made tapes, worksheets, games, devices

III A. 4. Science

The Program seeks to

- create awareness of the intricacies of natural and physical science
- involve children in experimentation through a process approach
- teach those facts which allow pupils to function better in their environment

It is a program which teaches how to conduct scientific inquiry - measuring, observing, recording, communicating, explaining, predicting.

The educational technique used is a hands-on, manipulative one.

Elementary Science is presented on a topic-by-topic basis, with each class completing three to five projects per year. These do not necessarily involve textbooks but are based on a discovery, open-ended approach. Materials most widely used are:

- ESS (Elementary Science Study) developed by the Educational Development Center, Newton, Mass.
- SCIS (Science Curriculum Improvement Study)
- AAAS (American Association for the Advancement of Science)

The last three were Federally funded projects now used widely throughout the country.

Mr. Edward Jacobus is the program manager for Elementary Science and meets periodically with the two science coordinators and the Continuing Curriculum Committee, to examine new materials and plan teacher workshops. Last year six workshops were held on Thursday afternoons, with minimal attendance. This year each coordinator has responsibility for five and one-half schools. Their time

in classrooms and on field trips is considered so valuable that workshops may be reduced to enable more time with teachers and students.

Science coordinators suggest topics to teachers, provide handbooks and other materials and equipment, and help them run projects. (Not many teachers run these independently, and still fewer plan their own programs). The Science program provides general guidelines, topics to be covered, and an extensive list of materials and other resources. It does not provide a systematic approach to science nor a step-by-step or unit-by-unit program. The last summer workshop in Science (1972) developed reference works for environmental studies. One booklet covers local geography, another describes field trip sites within a radius of one hundred miles and includes appropriate projects, studies and questions for students to explore. This is only one of many units developed to supplement the program.

III A. 5. Social Studies

A school-wide Social Studies Committee was appointed in 1961 to look at the then current social studies program. Following their report, Ford Foundation funding made it possible for Lexington teachers, in conjunction with research and development faculty from Harvard, to develop a new social studies program for the Lexington Public Schools. This program was revised, updated and expanded in 1971 during the summer and is the basis of the elementary curriculum today. Mr. William Terris is program manager. There is no supportive or specialist staff for the social studies program.

Structure and Content

The program is concept-oriented, activity-centered, and based on specific themes:

- I. Man has various ways of meeting similar needs.
UNITS: Shelter, Celebrations, Work
- II. Man has adapted to a variety of natural habitats.
UNITS: Pioneers, Navaho, Eskimo, Aborigine
- III. Man finds ways to control his relationship to his environment.
UNITS: Mining, The Oceans, Water Control, Agriculture
- IV. Technology has changed the production and distribution of goods and services and has created new opportunities and problems for human society.
UNITS: Food and population, Man and Industry, Cities, Lexington

- V. There is a variety of patterns of development and interdependence within and among nations.
UNITS: Migrations, Exploration, Man: His Conflicts - His Changes - His Laws (2-year unit)
- VI. Man's acts of inquiry, creativity, and expression evolve from and influence his culture.
UNITS: Archaeology, Architecture, Law and Government, Man: His Conflicts - His Changes - His Laws (2-year unit)

The Social Studies Scope and Sequence Chart is a guide used in conjunction with many resources which cover unit topics. Staff are free to use any, all or none of the materials. They are encouraged to be creative and develop their own approaches. Teachers are expected to cover thematic concepts but are not bound to use all units within any given theme. Implementation varies from school to school (and within school) for several reasons:

- where classes are multi-graded, units are often done in cycles
- teachers are encouraged to draw on their own strengths, expertise or knowledge so that, for example, in the study of celebrations, the first grader will study Japanese customs, then relate them to his or her own life and customs, their differences and similarities; the materials on Japan's celebrations are included as a unit, but if the teacher prefers to use the customs of India it will not in any way affect the basic theme or concepts to be covered
- while resources suggested are many and varied, teachers use any appropriate materials they choose (This is often necessary because things change so fast.)
- today's fast-moving world requires constant updating and revision as social and political issues and situations change.

Despite diverse approaches, foci and resources, there is a system-wide emphasis on themes; Man's needs; How he adapts to these needs; How he controls his environment; How technology affects his society; The interdependence of societies.

Revision and Evaluation

The principal of each building is responsible for evaluating the implementation of the social studies program. The guide, by design, has no specific testing mechanism and is not based on systematic progression. Some expansion of themes has occurred as additional units are added to the original curriculum - those developed largely by teachers in the classroom.

III B. Curriculum in the Classrooms

We move from descriptions of the frameworks to a summary of what is being done in the classrooms in reading, language arts, mathematics, science and social studies. The committee does not pretend to have made an in-depth analysis of the contents of these curricula; that is a long-term project far better undertaken by professionals within the system under the direction of an outside consultant. But care has been taken to look long and hard at how the curricula are used, in order to identify strengths and weaknesses of the programs. Principals and teachers were most cooperative in providing information through interviews and written questionnaires. These, together with our study and observations form the basis of the summary which follows.

III B. 1. Reading in the Lexington Public Schools

Until the introduction two years ago of LIRSP (Lexington Individualized Reading Skills Program), there was no system-wide reading approach. Even now, with LIRSP partially in use in many schools, reading programs vary considerably. Choice of reading materials is left to individual teachers for the most part, and some teachers depend on recommendations of reading specialists. At one school, its own Continuing Curriculum Committee screens, evaluates, recommends and orders materials for the teaching staff. This tends to enhance continuity through the grades within that school and allows for greater sharing of resources because the faculty knows more about what is available.

The attitude toward LIRSP runs the gamut from "great hopes for it" to "too much testing" to "built-in isolation for kids", with virtually everyone agreeing there is too much paperwork involved. Some teachers feel LIRSP was sprung on them prematurely (materials were not all available), and they are concerned that their suggestions for changes will not be included in a revision. Teachers rely heavily on materials they create, worksheets they design and ditto, and games and tapes the staff has developed.

Reading materials are listed below by school to illustrate the variety used.

ADAMS	Specialist-recommended materials, teacher-made games, devices, individualized reading materials.
BOWMAN	MacMillan, Houghton Mifflin, SRA, Scholastic Book Kits, Story records, Random House, teacher's collection of novels and followup questions, teacher-made games, cards and other materials

- BRIDGE Holt, MacMillan, Instructo Springboards, Tapes, Recipe, Felt Board Materials, Dolch Bingo's Spice, Peabody Kits, Lippincott, Educator's Publishing Materials, Milton Bradley's Education Company Board Games.
- ESTABROOK Multi-text programs, variety of reading systems suggested by specialist, textbooks recommended in Lexington Guides, teacher-made materials.
- FISKE MacMillan, Ginn 360, Educators Publishing, Lippincott, a variety of other materials.
- FRANKLIN Educators Publishing - Primary Phonics, SRA, MacMillan, Merrill Reading Skill Cards, Merrill Reading Skill text, paperbacks.
- HANCOCK Lippincott, Ginn, Houghton-Mifflin, Scott-Foresman, Scholastic paperbacks with teacher work supplements, Barnell Loft, MacMillan, Addison Wesley, Gates Peardon, McCall Crabb, novels, teacher-made materials.
- HASTINGS Varied basal texts, SRA kits, Barnell Loft Kits, teacher-made individualized materials.
- HARRINGTON Varied textbooks, workbooks and reading materials, teacher-made materials, recommendations by reading specialist.
- PARKER Ginn, SRA, teacher-principal selected books, Reading Caravan, MacMillan, McCall Crabb's controlled reader, Barnell Loft, teacher-made materials.
- MUNROE MacMillan, Holt, Rinehart, Winston, SRA Readers Digest Crossword Puzzle Cards, Dictionary Skills worksheets, Scott-Foresman, Lippincott, Durrell-Murphy, Media, Wordcraft Vocabulary Auditory Program, McCall Crabb's Speed Reading, Kottmeyer Spelling Series.

Strengths and Weaknesses

Outside of LIRSP, which does provide continuity between grade levels and has a town-wide framework which is being gradually implemented across the system, the Reading Program is essentially designed by each teacher in each classroom. (There are some exceptions where schools have made an effort to coordinate in-school programs and where specialists, principals and teachers cooperate on program planning.) Though there is some continuity between grade levels in some buildings, there is no coordination across the grade levels or across the system. Teachers are hindered by the necessity to create their own curriculum without guidelines, without readily available materials, with no sense of school-wide objectives. In the LIRSP

program, they feel burdened by cumbersome paperwork and "over-testing". The accountability which LIRSP provides is useful and teachers generally approve of the concepts and sequential learning inherent in the program. Many feel an integrated language arts-reading program would be much more effective than two separate approaches.

III B. 2. The Language Arts Program

The heart of a program was written in 1964 and has not been updated or revised since then, though proposals for summer workshops were submitted several years running.

Few teachers use the Lexington Language Arts Guide any more, but some faculty use objectives and materials suggested in it. Many teachers have developed their own complete programs and others have combined a variety of approaches and materials to best meet their students' needs.

Some schools suffer from a lack of readily available materials, others have resources which teachers feel have barely been tapped. The lack of scope and sequence approach and the absence of established objectives for language arts, contribute to uneven teaching system-wide. Resources used by elementary staff include materials from MacMillan, Laidlaw, Kottmeyer, Webster-Prentice Hall, SRA, Scott Foresman, D.C. Heath, McGraw-Hill, Barnell Loft, as well as Sadlier cards and a vast variety of teacher-made materials.¹

Strengths and Weaknesses

Current language arts teaching in the elementary grades is not based on a program at all, but consists of innumerable heterogeneous approaches by as many teachers, who have essentially (some with specialist, principal and/or curriculum committee support) designed their own programs. Heroic efforts have gone into providing individualized instruction for varied student abilities. We use the term "heroic" because teachers all too often work without specified objectives, with minimal support systems, a lack, absence or unavailability of materials (which has resulted in most teachers buying some of these with their own money.) There is no town-wide framework, because the Language Arts Guide developed in the mid-sixties is so outdated it is not used to any degree whatsoever. There is little continuity across grade levels, and none across the system that the committee could find. The lack of guidelines and materials certainly hinders teacher performance. But it also has brought out creativity and dedication which result in an amazing diversity of teacher-made games and other materials. These must be regarded as a strength of the Lexington Schools. If these could be shared, we would find resources throughout the system which would certainly enhance the teaching of language arts.

III B. 3. The Mathematics Program

Of all the curricular areas, mathematics is the one used

¹ For a more complete list school-by-school, see Appendix D.

most consistently throughout the school system. The Lexington Math Program was revised extensively over the past two years and the new edition is currently being piloted and introduced in the schools. Reactions are generally positive, with some suggestions for changes to be made before the final form is issued. Teachers who react most positively are those who already had made many of the changes reflected in the revision. Reference lists for specific topics in the original handbooks are still used to gather materials. Even with the new program, teachers find "materials recommended are not available so I have to write much of the material...scope and sequence charts present great difficulties for the student who is average or below...the organization of the program is unbalanced." Tests are not yet completed so many must devise their own, and many teachers use their own money to supplement materials.

Teachers use materials from Silver Burdett, Addison Wesley, MacMillan, Harcourt-Brace, D.C. Heath, Houghton-Mifflin, Nuffield Math Program, Scott-Foresman, as well as supplementary materials they devise and "mother-augmented materials", pupil-made materials, commercial games, attribute cubes, clocks, flash cards.¹ Several schools maintain a central file created by all teachers and available for everyone's use. Obviously there is a variety of approaches used to attain system-wide goals and objectives.

Strengths and Weaknesses

Both the "new" and "revised" math curriculum currently being used provide more system continuity and sequential learning grades 1-6 than any other program. There are specific objectives to be reached, specific skills and concepts to be learned, and specific assessment instruments which keep track of student progress and needs. Although there is not complete unanimity, the majority of teachers use it and find it effective. They are generally very positive about the revision and look forward to having the complete curriculum to use. Weaknesses which a few teachers cited were inadequate procedures for assessing and keeping track of student progress and lack of application of mastery to concepts, no estimation or 3-dimensional geometry.

III B. 4. Science Program

The teaching of science is not guided by a town-wide framework with specific objectives or coordination. The materials are exciting and varied, but few teachers find the time or feel they have the expertise to use them to any extent. There are basic units for grades 1-6 but faculty appear to depend heavily on specialists (except for some core teachers at upper elementary levels). There is little evidence of in-school coordination, though some buildings are working toward this.

¹ For a more complete list school-by-school, see Appendix D.

Strengths and Weaknesses

Science is probably the most unevenly presented subject in the elementary schools. Though excellent materials have been purchased and are in use, it is difficult for some teachers to get them when they need them. Many teachers do not feel qualified to teach science without help from specialists, and there are not enough of them to adequately provide the kind of support which would ensure a coordinated program across eleven schools. Science runs the gamut from excellent presentations to classes which have minimal exposure in relatively haphazard ways. Some schools are working on in-school coordination and support to strengthen science, but the program design does not encourage this. At least one school has a parent-volunteer program through the year, which supplements classroom teaching. Others depend considerably on science specialists who are now available one week of every six to each school. (This means that at the small schools a teacher may have direct help from the specialist one day every six weeks, but at the larger schools, less than half a day.) Teacher workshops in the past have not attracted many teachers, but there is an obvious need for in-service training which would enable the staff to be more confident about teaching science and present a balanced, coordinated program throughout the schools.

III B. 5. Social Studies Program

The Social Studies curriculum is a series of units on a variety of topics which teachers are encouraged, but not required, to use. Specific concepts children should learn tie the program together in an overall study of how man lives, works, adapts to habitats, controls his environment, creates, celebrates, etc.

Most teachers in the elementary grades feel the program is a good one conceptually, and many of them make specific use of the materials available. Others design their own course depending on personal expertise and experiences. Some confusion is inherent in the loose approach, e.g., children will have the same unit twice, or skip themes completely because there is no sequence to follow through the grades. The other major drawback to the program, which teachers mentioned over and over again, is the lack of ready materials which are up to date and deal with current events or events that have occurred since the social studies guide was expanded in 1971. Teachers use a wide variety of materials and spend varying time on social studies, depending on time available, their particular interests, materials at hand. Resources used are numerous and include such things as Junior Scholastic Booklets, Ebony Junior, Bridge Multi Media Kits, INTERACT (Calif.) and materials from Allyn and Bacon and W. Schloat.

Strengths and Weaknesses

Social Studies has a town-wide framework which is partially used at all levels by most teachers. There is little coordination between grades. Some schools have worked for more coordination across

levels. There are very general objectives, but no assessment instruments related to specific goals. The program needs constant updating and considerable expansion, though the units which now exist are felt to be very useful. Many supplementary materials are used by teachers who can find the time to locate them. Support personnel and central resources are badly needed here.

III B. 6. Some General Strengths and Weaknesses

It is difficult to summarize the weaknesses of the programmatic effort which these five areas collectively represent because of the variety of teacher response. But some very important threads run throughout. The most frequently cited weaknesses are lack of continuity between grade levels or across the system and unavailability of materials. These are directly related to other basic concerns:

- lack of a core curriculum for each grade level
- lack of objectives and parameters for all areas except Math
- lack of time for more emphasis on basic skills if parents continue to expect all the things they do now
- limited specialist support
- excessive record keeping
- no consistent evaluation procedure, assessment guidelines or monitoring devices system-wide, and in some schools as well
- lack of integration between the reading program and language arts
- not enough planning, sharing time for teachers
- no central resource area where materials can be quickly, easily available
- in some buildings, lack of resource files for teachers to share
- lack of useful in-service teacher workshops

It is important to note some of the strengths which the committee has observed in the present system:

- teachers are allowed to utilize their own teaching strengths, which ensures greater interest, application and excitement in the classroom
- teachers work hard to create materials and methods which individualize instruction for a wide variety of student abilities
- where teachers have found a way to share, students benefit from the cooperation, planning and variety of presentations
- some schools have bountiful resources and support systems which allows the teacher to focus her/his primary energies and resources on the students
- giving a teacher this kind of independence tends to attract individuals to the system who are competent and interested in professional growth.

The picture which the committee sees is therefore this. The Lexington schools have attracted innovative, creative teachers and then hobbled them with masses of paperwork and the expectation that they will research, dig out or create a majority of classroom materials. The time and energy this consumes cannot help but detract from what happens in the classroom in one way, and yet, in another, it brings excitement and diversity into the system.

III C. Development and Monitoring of Curricula

The weaknesses which came to light prompted the committee to inquire into the support system which is supposed to make it possible for teachers to do their jobs effectively. It did not take long to understand where part of the problem lies, nor will it take long to describe it.

For more than a decade, the Lexington Public Schools have created a substantial part of the curricula for the system. Originally begun with federal and foundation funding which gave impetus to the effort and the opportunity to cooperate with university talent, the educational curricula found their way across the country and into many nations around the world. Development was intensive, comprehensive, and very well funded with sufficient amounts of time devoted to the creative process. Over the years, as funds have diminished and the impetus been diluted, the development process has changed to the point where it is now seriously questioned by the School Committee and some of the staff.

Theoretically, Dr. Fobert's schema outlined in Chapter II still stands. Very practically, what is happening today is different. In 1965, \$40,000 was appropriated and used for summer workshops; in 1975, \$45,000 was appropriated (which does not allow much increase over ten years for inflation); only \$15,000 was allocated for use. Curricula have not been updated or revised in several areas where the need is just short of critical, i.e., language arts. Table I diagrams the process which is supposed to be in effect:

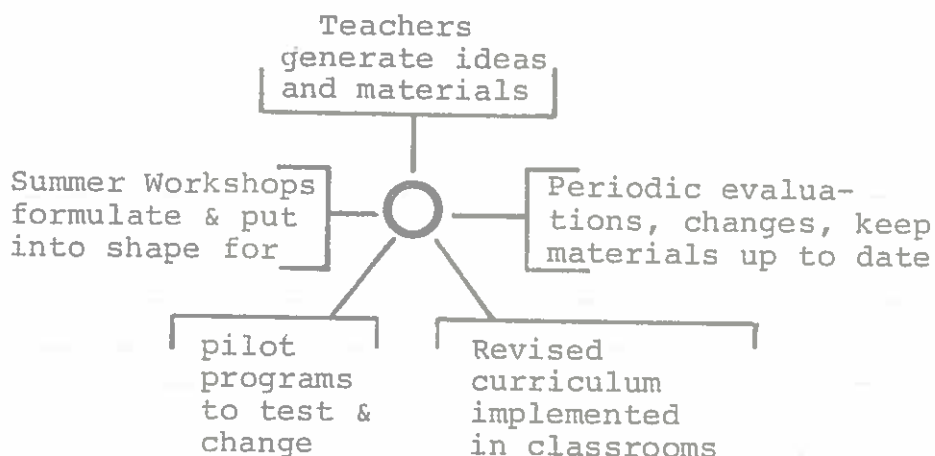


TABLE I
Curriculum Development

The curriculum development wheel is missing its hub and we will speak to this at length later. For now, it suffices to say that the structure which supports and implements curriculum development is not working well for several reasons:

- The authority of those responsible is not sufficient to see that the job gets done.
- Continuing Curriculum Committees (with (i) little or no support personnel, (ii) the entire faculty as members, (iii) principals who have full time responsibilities and function also as curriculum coordinators) do not work effectively
- Curriculum development must be treated as a high priority item if Lexington depends on it for primary programs. For the last several years it has not been given that status or the funding and attention which it warrants.

The first two points are most obvious in the monitoring, or lack of monitoring system. There does not exist, as far as we could ascertain, any effective evaluation process. Curricula should be evaluated, revised, changed or discarded as they become outdated or ineffective. This has been done to some extent in some areas, i.e., math, and partially attempted in others, i.e., social studies. In still others it has not been done at all in any significant way, or if evaluation occurred, changes have not been implemented.

In short, there is no system structure functioning which insures development and implementation on a system-wide basis; what does happen can only be described as somewhat haphazard and does justice neither to teachers efforts or to some administrators' attempts to articulate a K-12 program for the Lexington Public Schools.

III D. Recommendations

It should now be apparent that several very important questions must be answered if the Lexington Public Schools are to continue to provide what has been high quality education:

- Is Lexington going to create its own curricula or select from those published commercially?
- If town-created curricula are to be used, can this be accomplished under the present arrangement - with principals serving as curriculum managers and coordinators, with continuing curriculum committees which function minimally, without sufficient money for materials, without summer workshops which are the heart of the process?
- Can teachers produce the superior level of education which Lexington desires when so much of their time is spent creating or locating materials and doing the endless amount of paperwork now required?

- Can a system continue to flourish without objectives and a coherent framework which sets standards, provides firm guidelines and specifies what must be done?¹

It appears that for want of central reinforcement the very strengths of the Lexington plan have become its weakness. We have gradually evolved a dichotomous situation. On the one hand, the concept of teachers being involved in creating what they teach is enormously exciting, and one which could occur only with highly qualified teachers in a very vital environment. On the other hand, we have placed the responsibility for coordinating curriculum into the hands of all-too-busy principals who often do not have expertise in that particular field and we have provided them with minimal or no support personnel. The concept of teacher involvement was based on sufficient time for developing and piloting programs in the classrooms and organizing them for implementation during summer workshops. The past few years, workshops have been severely cut back even though several major areas obviously needed attention. The Language Arts program, for example, was based on the premise that it was a living instrument which would need regular updating. This has not happened and the program is now virtually ignored despite the inherent excellence of the original guide. A Reading Program was developed seemingly without regard for integration with a language arts curriculum, and without adequate provision for completion and implementation. Its use in some grades in some schools does not lead to continuity in goals or priorities. (All of the children are getting some of the skills, but only some of the children are getting all of the skills.) A creative Science Program is being used somewhat, but it depends heavily on the resources and guidance of two specialists divided among eleven schools.

If we are to maintain the good things in the Lexington elementary schools, and ensure even better education in the future, we should look hard for answers to the following more specific questions, and having found the answers, move quickly to implement decisions which will lessen the discontinuity, lack of coherence and confusion which now exists within the system.

Questions

- Do Principals, realistically, have the time and expertise to act as curriculum directors and/or managers?
- Should the language arts and reading programs be integrated into one program?
- Why is there such a lack of materials in some schools? Does the present policy to ensure equality by basing supplies on the number of pupils per school really lead to inequality of resources?

¹ Specifying what is to be done is quite different from specifying how it is to be done. The latter would destroy much of what is valuable in the present program.

- How can we best provide support and resources for the classroom teacher so she/he can spend more time "teaching"?
- What framework would best enable teachers to share - ideas, planning, coordinating, resources?
- How essential is ongoing training for teachers in maintaining a high quality of education? (With less movement of faculty since the economy has tightened, and a high percentage of tenured teachers within the system, some ways must be found to ensure that we don't go stale.)

The committee is absolutely certain of one thing. Decisions (and implementation) on these and more detailed questions will require highly competent leadership within the School Administration, with carefully delineated and specific authority to do what needs to be done.

The committee has also concluded that a move to a regimented system based solely on town-wide adoption of standard commercial curricula and materials, is the way to achieve better continuity and coordination in Lexington. There is an appealing simplicity to the idea, but the committee feels strongly that such a move would have serious negative repercussions.¹ It well may be that careful planning will allow the integration of some such materials into Lexington's curricula. Certainly, more imaginative materials are available in some areas now than when our major curricular efforts began in the mid-sixties. And certainly we need a more clearly articulated curriculum, not just at the elementary level, but K-12 in basic areas. But no highly structured system, which dictated the materials that teachers must use, could hope to attain the level of quality which the committee understands the citizens of Lexington to want for their children.

Therefore, in speaking to the needs of curriculum within the Lexington Public Schools, the committee recommends that immediate system-wide steps be taken to

- develop and implement scope and sequence procedures for objectives in all basic skills and knowledge areas to produce continuity between grades and schools²
- provide a Curriculum Center which will provide direction for on-going development, catalogues and files of materials available for all teachers' use, an efficient, effective

¹ Some of the reasons for this will be apparent, after the educational process has been discussed.

² This may apply to some concepts, as well as knowledge and skills.

information delivery service for staff, a central location where all kinds of materials and equipment are located so teachers know where to go for resources or help and when they will be available.¹

- provide curriculum coordinators in the schools (as well as in the Center)
- provide workshops of three kinds: (i) ones which directly address teacher needs in very practical ways,² (ii) ones which involve parents with teachers in the development of some materials, (iii) ones which, in a down-to-earth way, keep teachers abreast of advances in understanding the learning process.

¹ The Wellesley Public Schools have an outstanding curriculum center, which might be studied as a possible model.

² Teachers do not need workshops on philosophy. They need ideas and materials which they can take out of the workshops and put to use right away.

IV

THE ELEMENTARY SCHOOLS -- PROCESS

The third task associated with defining the elementary educational program and assessing its strengths and weaknesses is to review the educational process, that is, to review the range of actions which occur in the attempt to achieve the educational objectives of the school system: how the schools are organized, what teaching methods are employed, what climates for learning individual schools provide, etc. (Part of this review is in the previous chapter which considers the development, monitoring and use of curricula, town-wide.) Here we will review the educational process -- its effects on curricular efforts and its relationship to other parts of the educational program.

What is meant by "other parts" of the educational program? The school system presently has goals, and many citizens have expectations of the schools, which cannot be described as accumulating knowledge or mastering skills, and for which there are no corresponding curricula. These goals have to do with enhancing the development of certain human qualities, e.g., a respect for learning, respect and consideration for others, self-insight, etc.¹ It must be said at the outset that many of these goals are intangible when contrasted with curricular objectives; and it must be said that most parents (properly, we think) regard these aspects of human development as primarily their responsibilities. But the fact remains that the school system does have some such goals and that parents do consider it important that schools contribute to the development of their children in many ways.² Thus it is important to ask how the educational process enhances (or does not enhance) such development.

The committee has concentrated on a limited number of aspects of the educational process. The discussion begins by presenting a profile of each elementary school and commenting on the total picture which these profiles provide. It moves to standardized testing, as a means of assessing the strengths and weaknesses of schools (and students), and then to a somewhat deeper look at the assessment of schools, taking into account a few of the "other" goals which were described. The discussion of educational process ends with two of its more concrete aspects, facilities and school size.

¹ These goals are discussed more fully in Chapter V: Where Do We Go From Here?

² Again, see Chapter V.

IV A. The Eleven Elementary Schools

The following descriptions and comments on the Lexington elementary schools were derived from interviews conducted in the schools, augmented by student and parent responses to survey questions about their schools. No attempt has been made to answer for each school every question which the committee has been concerned with. Primary emphasis has been placed on trying to describe the structure and organization of each school and then describing what some of the unique features of each school are, how different parts of the educational process fit together, and how different groups feel at a general level about how the school is doing.

ADAMS SCHOOL

Adams School appears to be about half the size of Hastings and has almost as many pupils. 343 children fill a building where every space is fully utilized. The library is a former classroom, the five aides use the health room, and the school counsellor's office is in the back of what used to be a storage closet. Declining enrollment is not immediately apparent at Adams School. The pupil-teacher ratio is 22 to 1 and projected enrollment for next year is 337. Physically the school is in a state of general neglect. Despite these limitations, the atmosphere is both warm and vital. There is a self-determination and enthusiasm apparent which largely overrides Adams' appearance as a "step-child" school.

Flexible classroom organization allows many approaches to learning and is based on cooperative teaching with grade level teachers sharing ideas and planning cooperatively. This shared planning is encouraged by the principal, who schedules art, music and physical education classes to allow teachers daily released time which amounts to several hours weekly. The structure enhances cohesion and continuity among staff and program.

Mr. Jacobus, Principal, sees his role as one which supports, provides direction and leadership and manages details so faculty can devote their best efforts and energies to teaching children.

Curricula

Reading The reading program at Adams offers a variety of approaches geared to the needs of the individual child. The LIRSP program began a year ago and several teachers feel it was introduced prematurely; some of the materials were not ready for use. Paper work for LIRSP is extraordinarily heavy and the reading specialist, aides and classroom teachers spend considerable time on it. Other reading programs use materials from Ginn 360, Alpha One, Lippincott, teacher made games, Bonus Books, Harris-Jacobson Word List, Modern Curriculum Press, Durrell-Murphy Phonics Kit, etc.

Math The present math curriculum "is excellent for the student who finds math relatively easy." The "revised math" curriculum, teachers feel, is basically the same as the "new math", with some changes and deletions in vocabulary. Teachers find the math Scope and Sequence does not allow time for mastery of the basic skills since no review time is allotted. They frequently set the chart aside and work at a pace students learn best with. Teachers suggested a year be spent studying which math - the traditional or the "new" - is more effective in terms of the child's mastery. It was proposed that one year be spent in a comparative study in separate classrooms. Teachers also felt it would be wiser to reduce the number of math specialists rather than cut science personnel. In any cuts of this nature, however, they noted that texts and other resources were needed to replace specialists.

Language Arts The present Language Arts Guide is not used consistently at Adams and teachers felt the existing Scope and Sequence should be improved rather than revised. Teachers use instead a variety of materials and methods from Lippincott, Scholastic Paperbacks Magazine, Dolch Words, Barnell Loft Skill Builders, SRA reading materials, Golden Books Encyclopedia, Ginn 360, Scott-Foresman, Botel, etc.

Social Studies The curricular guide is vague and lacks necessary materials and hence requires considerable work for teachers at Adams. Few teachers feel they have the time or energy to prepare materials for social studies and one teacher stated "I have never worked so hard to be a lousy teacher." Many Adams faculty feel the social studies program needs the most immediate attention.

Observations

Despite the physical (poor) condition of Adams School, the school community radiates a positive pride in and support for their school. School staff refer to themselves as the "Adams Family" and judging from the obvious warm, accepting relationships, they work as a cohesive concerned group. Our committee found teachers enthusiastic, dedicated and committed to creating and maintaining an exciting educational program and environment. There is some concern among both teachers and parents that the physical condition of the school affects childrens' self-images and concomitantly, there is an obvious determination (found in the older schools) to overcome this and minimize negative aspects. Despite limitations in facility, Adams School exemplifies much of the best of the neighborhood school and takes advantage of what the community can offer through activities such as its Five Spot Program, which allows walking field trips to Wilson Farms, Follen Church and the Fire Department.

Creativity and a child-oriented process has not been at the expense of efficient and effective management, largely we feel, because of good administration. Many teachers noted that they are able to do a better job because the Principal has coordinated their schedules so well with specialists and aides, which allows concurrent release time for the same grade levels to work together.

There is deep-seated concern about the future of Adams School, about the lack of clear priorities for the educational program in Lexington, and a lack of faith among staff and parents in the central administration and the School Committee - partly engendered by the system's neglect of Adams over the past few years.

Adams Parents

Parents praise their school, well aware that it has not received its share of attention from the town but feeling the teachers are "the best" anywhere. Under their tutelage, children "have room to develop their potential within a flexible structure where discipline and

organization give security for learning the basic skills and much more." They would like to have a better system of evaluating a child's progress and see a better procedure inaugurated for handling grievances in the system at large. They feel strongly about keeping Adams as a neighborhood school, noting that the enrollment decline has scarcely allowed for emptying anything at Adams, and that the cohesion necessary to a good community would be destroyed by redistributing children to other schools.

Of 101 Adams parents who responded to the Citizen Survey, 76% rated the school excellent or satisfactory, 15% rated it fair or poor, 60% would remain at Adams under open enrollment, and 9% did not answer this last question.

Every curriculum area was rated satisfactory or excellent by a majority of parents. The largest numbers who felt areas needed improvement were 36% in math computation, 33% composition, and 32% in math reasoning.¹

Students at Adams School²

Students at Adams said they -

- liked "adult relationships", gym and sports and other specific subjects the best
- they would change "nothing" and "food" in that order
- felt the oldness of the school didn't matter
- like least the building, gym, bathrooms, and crowded conditions
- felt the most important things to learn about are Reading, Math and Getting Along with Others.

¹ For details of parent ratings, Appendix B, page 6 .

² For summary of student responses, see Appendix A, page 7 .

BOWMAN SCHOOL

Bowman is Lexington's largest and newest school. The 481 students are drawn from several different neighborhoods and diverse backgrounds. The pupil-teacher ratio is 23.3 to 1 and the projected enrollment for next year is 455. There are twenty teachers, two resource teachers for special needs, an assistant principal who teaches half-time and resident specialists.

Bowman is organized into three teams, K-2, 3-4, and 5-6. Each team leader serves by mutual choice and consent of the principal and other members of the team at no extra pay. The Bowman Administrative Cabinet is made up of the Principal, Assistant Principal, the three team leaders, one representative each from the teaching and consulting specialists, and a representative aide. It meets every two weeks and the entire staff meets whenever the need arises. Teachers find this arrangement and the fact that Mr. Horton, the Principal, has an open door policy, provides very effective communication channels. Teachers feel the Principal offers leadership by encouraging them and supporting their independence.

There is variety within the classrooms and within each team. A few classes are split-grades, some are self-contained, others are double in size and space and taught by partnerships. There is regrouping for math. Team teachers meet regularly to discuss Cabinet meetings, plan curriculum and activities. They feel the school is just reaching an optimal size after many years of large school populations.

The building itself has offices, library, all purpose room, gym and teacher areas in the center, with classrooms around the perimeter. Staff feels it is basically a poor design, with long halls, unattractive locker areas and very poor placement of bathrooms.

Curricula

Math Teachers welcomed the revised math program feeling the original "new math" curriculum took much time and effort coordinating texts and worksheets. Several questioned the sequence used and some would prefer commercial materials which would be easier to implement.

Reading LIRSP is good, but a lot of paper work. Teachers use a variety of materials, approaches and formats but generally follow the goals set by the school.

Language Arts No one uses the LARS Guide but many referred to it when developing their own programs. Parents almost unanimously noted the weakness of LARS, the lack of unity between grade levels and teams, the lack of writing, vocabulary and spelling.

Social Studies This is exciting at Bowman because of the "dig". Teachers feel program materials are lacking and outdated so they have written their own. The "dig" is on school property and provides a

unique opportunity for children and staff to explore.

Science Upper grades coordinate with Social Studies at the dig and find the studies exciting and informative. Otherwise many teachers feel science just is not "there".

Observations

The overall feeling expressed by the Principal and teachers is of a happy exciting school with a very humanistic atmosphere which is filtering down to the children. Mr. Horton sees the school as a tri-partite organization of children, teachers and parents. Children have a say in things and feel listened to. Teachers expressed the warmest feelings and spoke of camaraderie between staff and principal and the positive relationship with parents individually. But collectively, parental pressure on the children, and thereby on the teacher, is very great; competition seems to be reinforced in the community. The gym teacher (of a very popular, non-competitive, skill-based physical education program) pointed out that physical education is the only social situation in school where kids are cooperating fully.

The main strength of the school appears to lie in the flexibility provided by the team-partnership approach to learning. Each child has a choice of class groupings and philosophies and the format provides a wide diversity of approaches to learning. Staff feel another adult in the room inhibits "staleness" and that the sharing which occurs is a prime advantage.

Morale is very high; teachers spoke about their "great" principal, the cohesive staff and relationships with children. The Principal thinks his staff is excellent and so did parents we spoke with. Most of the staff feel the need for more cooperation between all individuals and more feeling of identity. Teachers spoke of the need for more uniformity and continuity between the "three separate schools" and some way to eliminate the gaps between teams. But the weaknesses are considered minor by staff. Aides appeared in good spirits, enjoy the weekly lunch meetings with the Assistant Principal and the counsellor but find the lunchroom duty hard, the scene noisy and confused and the setting dreary. (This is a fairly common complaint across the system.) They all however seem to look forward to the challenges they face, demanding however they may be.

Parents

Parents at Bowman commended the good teachers and Mr. Horton but were greatly concerned about the curriculum, especially in Language Arts, i.e. composition. They spoke of the lack of continuity between grades and teams, the lack of self-discipline and consideration evidenced in the lunchroom and on the playground, the need for more information in curricular areas, and the lack of unity among the parents.

66% rated the school excellent or satisfactory and 25% rated it fair or poor. Given the choice of open enrollment, parents would keep their

children at Bowman (59%). 16% did not answer the open enrollment question.

Parents rated art, music, social studies and physical education highest (all 60% or more.) They feel that composition (35% satisfactory,) needs improvement (47%). Handwriting, math computation and reading were voted satisfactory but more than 31% felt need of improvement in these areas.¹

Students at Bowman

Children at Bowman said they²-

- liked specific subject areas "best", and adult relationships, second, with special activities in third place
- liked least some staff, followed by French, Math and Food
- thought the most important things to learn about were Reading, Math and Getting along With Others
- would change some of the aides and other staff, and the playground and equipment first, then Food
- did not feel it mattered whether the school was new, old, large or small.

¹ For details of parent ratings, see Appendix B, page 6 .

² For summary of student responses, see Appendix A, page 7 .

BRIDGE SCHOOL

Bridge School, with a student body of roughly 455, is staffed by 19 teachers, three special education teachers, four full-time teaching specialists, ten special services staff, eight aides, one assistant principal and one principal. There are 24.2 pupils per teacher and the projected enrollment for next year is 429. Bridge is a large, modern, colorful facility with ample space. It is divided into three "small schools" with K-2 in one wing, grades 3-4 in a second wing and grades 5-6 in the third. The idea is to personalize the school experience as much as possible and avoid the confusion and bustle large schools often personify. Not long ago, Bridge had an enrollment of some 600 students. The art room and Instructional Materials Center are extremely spacious, well-used areas and as enrollment has declined, space has been set aside specifically for tutoring and special needs and other areas heretofore crowded.

Bridge is a modified team-teaching school where teachers group students as heterogeneously as possible while keeping them equivalent wherever feasible. Math and reading groups, however, are taught in semi-self-contained classrooms and are homogenous. Two to four teachers staff six units (depending on size) which comprise the small school units above. Within these teams teachers are encouraged to develop their own teaching styles and a wide spectrum of learning situations from more or less structured to more or less open are found within the school. A common curriculum base is used to plan and implement multi-level learning programs.

Two special classes for the moderately retarded children and a class of atypical children, part of a collaborative effort by Lexington, Arlington and Burlington, serve a low-incidence proportion of children with specific problems. These classes have three teachers and one aide.

Teachers serve on Continuing Curriculum Committees within Bridge School which order materials and tests, share ideas, develop curriculum and coordinate curriculum materials. The Principal encourages teachers to make decisions and sees his role as building a system into the decision-making process. An Instructional Cabinet meets once a month to discuss administrative and operational plans and procedures. It comprises seventeen members - one from each team and specialist area and the administrators. Staff meetings are held regularly.

Bridge's central theme as Principal Lester Goodridge describes it, is "staff decision making which sets parameters to allow maximum autonomy in the classroom." Teachers are evaluated by the principal who spends two to four hours over three months in observation. This is followed by a one to one discussion and appraisal of classroom techniques and implementation. Central office staff observes and submits a report in writing on each teacher up for tenure.

Curricula

Math Bridge School is the pilot school for the revised math program and teachers find the new program (1) separates the essentials efficiently, (2) defines progressions clearly and builds upon them, (3) has a consecutive guide which is easier to use, (4) has less difficult phraseology and symbolic notations, which were hard for slower students and not necessarily very useful for others, (5) is stronger on basics and drill and (6) is easier and more interesting for students to use. Students feel they are accomplishing more, faster.

Weaknesses (though it is still early for final assessment) are (1) the curriculum is not complete. There are no references yet and some levels have no tests or inventories so teachers must make their own; (2) functions are distributed throughout levels - a piecemeal approach which may be less effective.

Supplementary materials used in the math program include self-made games, and those from MacMillan, Addison-Wesley and Heath texts. Most teachers feel individualizing instruction - though it requires more teacher time and organization - does allow more class time for slower students and provides greater reward for most students.

Science In discussing the science program at Bridge, teachers felt this a weak area very much left to the initiative and inclination of individual teachers. The program suggested by the school department has little regard for sequence and teachers don't know what their students have already had. They noted there was a quantity of materials available but finding time to coordinate a program for their classes is difficult. They keenly felt the cut of science coordinators which made it harder for many teachers to present science effectively.

Social Studies The Social Studies Guide is used as a springboard and for general guidelines. Specific units and themes are good, teachers felt, but the program lacks variety and needs to be updated and re-evaluated. Teachers supplement use of the Guide with many resources which include current periodicals, Junior Scholastic Booklets, Ebony, Jr., Bridge Multi-Media Kits and speakers (on law and economy most recently) from the outside.

Aides care for some of the vast number of resources at Bridge but teachers feel strongly the need of a social studies coordinator (as did faculty at several other schools) who would organize, catalogue and channel materials from a central resource area "even at the sacrifice of something else." The words used most often to describe the social studies program here were "eclectic" and "haphazard." The Bridge Curriculum Committee is working on a conceptual chart for a new social studies program but the autonomous unit structure at Bridge appears to augment program fragmentation and hinder continuity between levels. This is most evident in social studies.

Language Arts The Language Arts Guide is used mainly as a reference tool and is supplemented by teachers' own materials. LIRSP is not yet used for every child at every grade level but is utilized when necessary within the program. The reading program is individualized as much as possible. The first grade uses Recipe for Reading by Nina Trabb, Reading with Phonics by Hay-Wingo, the Holt and MacMillan Series, American Book and Merrill Linguistics for children who need a completely phonetic approach. Many other basal readers are used as children progress through the grades, two being the Scholastic and Yearling series.

Creative writing and other language skills play an important role in the curriculum. The 3/4 level is very pleased with the Composing Language by MacMillan which emphasizes oral then written communication. This series has been shared with teachers from Adams School who also found it valuable. In grades 5/6 a wide variety of materials is used.

Observations

During Bridge's somewhat turbulent history, staff morale has fluctuated considerably. Based on our observation and on staff comments and interactions, morale is high inside the school now. There is a closeness and general sharing which promotes a positive atmosphere. "If anyone's in trouble, there is always someone to help," one teacher commented, and another one said she never could have made it through her initial year had other teachers not been so helpful.

While interviews were not held with the music, art or French teachers, we observed children in classes and teachers had only high praise for these programs. Art is everywhere in the school. The specialist "lives" in the most modern artroom surrounded by a myriad of materials and art work done by students. A good bit of the color of the school is created by the vibrant artistic creations which adorn walls, windows and an occasional ceiling.

The Special classes housed at Bridge are served by vital, dedicated teachers and there appears to be an unusual commitment to all special needs. The large staff was enthusiastic and positive about their charge, though one represented many special needs personnel across the system in her wish to see a more "humanistic attitude develop toward my kids from teachers who seem to resist it more than kids."

Parents and Bridge School

Part of the cohesion among staff appears to be stimulated from parental pressures and complaints. Teachers feel parents expect schools to do the impossible and yet do not know what's really happening at Bridge. "The door is open but parents don't come in to see what we're doing. They don't respect teachers as professionals, which is one reason the Staff booklet was written this fall," (This sketches the background and qualifications of each staff member and is unique and well-done). Seldom do teachers feel parents are supportive of what the school tries to do.

Communication with parents depends heavily on individual units. One unit sponsored parent coffees this fall to explain programs and answer questions. (At the Parents meeting with us, several were openly envious that this hadn't happened to them.) The Language Arts unit 1/2 uses parents five days a week as volunteers in their program. Total school activity outside of Back To School Night is minimal and Dr. Goodridge told us there had been no whole school meeting with parents as such for three years. PTA efforts to involve parents in a recent Playground workday were discouraging; only three families showed up and only after the president called to borrow shovels to set up some equipment. There does seem to be an impasse between parents, who feel ignored and un-listened to, and efforts of staff and PTA, who feel ignored and un-listened to.

Parents told us they are satisfied in many ways with Bridge School and feel that its great strength lies in the excellence of its staff. But they also feel very ineffectual trying to communicate with the administration. Some fear that children become lost in the shuffle, are treated as numbers, a statistic, or a sum of test scores. Team teaching has advantages, but some of the twenty four parents we spoke with feel there are problems particularly with younger children (who have trouble relating to several different adults) who might be more secure with a single classroom teacher. The communication gap leads to grape-vining, distortion, anxiety and skepticism on both sides.

Of 122 Bridge parents who responded to the Citizen Survey, 65% judged Bridge excellent or satisfactory and 31% rated the school fair or poor. 49% would have their children remain at Bridge with open enrollment.

A majority rated art, French, math, music, physical education, science and social studies excellent or satisfactory. Response to handwriting was mixed with 47% satisfied and 41% feeling it needs improvement. 45% felt composition needs improvement. (43% rated it satisfactory), and 35-38% feel math should be improved.¹

Students at Bridge²

When asked for their opinions, students at Bridge decided they:

- liked best specific subjects, with math and art topping the choice, and adult relationships coming second
- liked least, some staff members and Food. The "noisy, stuffy lunchroom" was a close third
- would change some staff members, "Nothing" and Food
- thought the most important things to learn were math, reading and getting along with others
- felt the size and age of a school didn't matter, but prefer a new, large school

¹ For details of parent ratings, see Appendix B, page 6.

² For summary of student responses, see Appendix A, page 7.

ESTABROOK SCHOOL

Estabrook was designed specifically to be a team-teaching school. Classrooms range from small to very large with all the large rooms in one wing and all the small in another - an unfortunate aspect which reduced some of the flexibility originally intended. The library sits at the heart of the three wings near the teachers' and principal's facility. The large building once accommodated 646 pupils. Present enrollment is 390 with a pupil-teacher ratio of 23.3 to 1. Projected enrollment for 1976-77 is 367. Physically the school is spacious, comfortable and in excellent condition.

The educational structure is based on three teams: Phi, grades 1 and 2, Delta, grades 3 and 4 and Kappa, grades 5 and 6. This year for the first time, there is a 4/5 team, which combines 4th and 5th graders in a cross-teaming experiment. Only grades 5 and 6 are departmentalized and then only in math and language arts.

Continuity and interaction among faculty and Principal is provided by the Administrative Cabinet made up of Team Leaders, and the Instructional Cabinet which includes Senior Teachers. The Principal, Mr. Terris, meets every other week with his cabinets and each team meets weekly to discuss school curriculum. Each team functions as a "mini-school" with 125 pupils. Periodically, school-wide enterprises involve different grades and ages working together as a group.

Mr. Terris believes that a school should reflect life so the school process includes interaction with lots of people. In hiring his teachers, Mr. Terris makes it a point to have a diversity in background, both regionally and educationally. He feels that he has been successful in accumulating a staff with a wide range and believes that the school population itself represents a cross-section of parents with a wide range of socio-economic as well as educational backgrounds.

Curricula

Reading There is a tremendous diversity of materials here. At the primary level alone, Lippincott, Houghton-Mifflin and ABC are used. As one progresses through the grades, there is a variety of basals, some independent reading, library reading and individualized programs. LIRSP has been introduced at the primary level and although there were complaints about additional paper work, all see much good in this approach. The LIRSP program is based on sight vocabulary and, although students read well in the Lippincott series, some have difficulty with the criterion test because it is more relevant to the MacMillan texts. All staff felt the need of more clerical help to manage this program.

At the primary level there is "strategic heterogeneity" among all the reading groups (there are 15 groups at second grade level). Teachers do

a considerable amount of grouping within the classroom working with small groups and individual readers. More advanced readers are encouraged to help their slower classmates and there is a definite attempt to avoid homogeneity. One 3/4 teacher has both the top 5th grade readers and the lowest group, in addition to teaching one mixed section. With each group, she uses different basals.

Language Arts Most teachers feel that the Language Arts Guide needs revision and updating, and hope a summer workshop will soon make this possible. Teachers at Estabrook draw constantly from "The File" - a rich supply of supplementary materials and teacher-made games which all faculty share with one another. By and large, teachers develop their own language arts curriculum, using the Guide as an outline for concepts to be covered and skills to be taught at their level.

Math Most teachers seem pleased with the math revisions and its emphasis on skills. Children are grouped flexibly and re-grouped as they complete levels satisfactorily. Pupils move at their own rates within groups and in rare cases, special programs are designed for a very competent or needy child. Teachers commented that the Math Scope and Sequence should be used as a teacher's guide and not as an evaluation tool. It is misused when parents and children regard the levels as a measure.

Social Studies On the whole, the staff at Estabrook is comfortable with this area, but some would like to see the program updated. Phi studies the Eskimo, Shelter, Celebrations and the Navaho in a two year cycle. Delta studies Cities and Food and Population and there is little need for supplementary materials. Mr. Terris is the Social Studies Chairman of the CCC so one would suspect this area to be a strength in the school.

Science The majority of faculty felt a loss when science specialists were cut, because teachers need their help in the classroom frequently. The science specialist here is considered a resource person and is available one week in six. There was little obvious evidence of innovative or comprehensive science programs in the school.

Observations

Despite the size of Estabrook School, the outward impression is one of friendliness and warmth. Children look happy and are comfortable with teachers and with the Principal who tries to visit each classroom daily to get to know pupils better. Mr. Terris is accessible to teachers at all times and evaluates them through informal observation on a continuing basis.

One senses a rapport within teams, most of whose teachers are tenured and have worked together a long time. Open communication, sharing, and a willingness to help one another are integral parts of team groupings at Estabrook. It is not altogether certain that this same

rapport exists across teams.

Estabrook Parents

Teachers, with some reservations, express positive feelings for the parent-teacher dialogue groups begun last year, and feel there is a good rapport with parents, a majority of whom support present programs. Some staff, however, find themselves under attack and have become defensive. Parents are educationally-oriented and have high expectations. Some express dissatisfaction frequently on a continuing basis. Increased pressure from parents and rising expectations of what schools should do have been felt to increase competitiveness among Estabrook pupils, not always to their advantage.

Our discussion with twenty parents indicated several areas which they feel need attention; many of them appear to stem from lack of communication and/or to listening to each other, school and parent. The assembled group presented divergent viewpoints on practically all areas of discussion but did agree that:

- many parents have little sense of teacher objectives and plans for the year
- teachers do not expect or require as much as they ought from pupils (children are not learning enough, and there is too little accountability)
- more consistent, coherent teaching of the 3 R's is needed
- a great deal of confusion about what is happening at Estabrook does not enhance school-community relationships.

When asked about strengths of the school, parents agreed that, in general:

- children like school
- teachers and principal care about the children
- the school makes youngsters feel good about themselves
- the school creates a good atmosphere for learning.

In spite of this healthy environment, some parents felt that their children were not learning very much. However, the results of the Citizen Survey, where 99 Estabrook parents responded, indicate general satisfaction with what happens at the school despite the reservations listed above. 77% rated the school excellent or satisfactory, 18% rated it fair or poor and 75% would choose to keep their children at Estabrook if open enrollment were general policy. 15% did not answer the question about open enrollment.

Estabrook parents rated all but one subject area satisfactory and/or excellent by clear margins with art, music and physical education as top choices. Composition was judged in need of improvement by 53%, math computation by 40% and math reasoning and research skills by 31%.¹

Estabrook Students²

When asked for their opinions, students at Estabrook decided they:

- liked best specific subjects (math and art rated highest), and "adult relationships" and special activities
- would change "Nothing" and Food
- consider the most important things to learn about are Math, followed by Reading, and then Getting Along with Others
- liked least the Food, teachers, and "Nothing".

¹ For details of parent ratings, see Appendix B, page 6 .

² For summary of student responses, see Appendix A, page 7 .

FISKE SCHOOL

422 students more than fill Fiske School, which has a pupil-teacher ratio of 25 to 1. The building is in good condition and more than fully utilized, with instruction and special activities operating almost continuously in the corridors. A variety of educational formats, including cooperative teaching based on self-contained classrooms, enhances the effort to match the teaching approach best suited to each child with teacher strengths. Projected enrollment next year is 395.

Charles Como, Principal, sees his role as mediator between town directives and the teachers, and a facilitator in directing processes to enable teachers to give their best efforts in the classroom. The school is a busy place, with science being taught in the corridor, a baking class run by parents turning out chocolate cookies next to the Science corner, and the walls colorful with creations from art classes.

Curricula

Math The "revised math" is helpful to teachers who use it regularly. Teachers feel that there is continuity in this program, but they are frustrated by the need to search for materials and make their own. The cut in math specialist time did not help. Scope and Sequence and level guides are considered excellent.

Science Parents coordinate and participate in the science program for grades 1-4. Corridor space is reserved for science activities with classes held two mornings a week through the school year. Fiske makes as much use of the science specialist as possible and the program includes field trips to environmental centers and some over-nights.

Reading There was some sentiment that the teacher and reading specialist should design a reading program to meet individual needs. LIRSP is in use and its goals are rated good, but the process "over-bearing." Textual materials from MacMillan, Ginn 360, Educator's Publishing and Lippincott are used.

Language Arts There is no continuity in this area and teachers do not use Language Arts Guide. For the most part, teacher-made materials are used, but the Merrill Skills Series, Epcos Primary Phonics, and materials from SRA, Ginn and Phono-Visual are used.

Social Studies In this area, the principal stated that there is almost no relation to the town-wide framework. One area that fifth and sixth graders cover is the revolutionary period.

Observations

Teachers create a variety of learning situations and serious attempts are made by staff to place children in the kind of program best suited to the individual. The atmosphere and Principal are supportive and

some of the teachers work together well. We felt that communication within teams was more effective than that between teams (which is true across the system generally). A lack of continuity and cooperation seems to exist between the upper and lower wing which was reflected in teacher surveys as well as interviews.

Crowded conditions result in (1) corridor classes with a great many distractions, (2) limited space for specialists to work in, (3) a hectic lunch scene where there's barely time to gulp down a simple lunch, (4) and a very small, insufficient library which cannot begin to provide space and resources for this large a student body. Specialists time is at a premium and teachers have little free time for sharing and planning with each other.

Many teachers feel that Lexington parent expectations are unrealistic especially with the increasing demand to get back to basics without giving up anything else. On the whole, we found teachers enjoy working at Fiske School and that the competent, concerned staff has created an exciting learning climate.

Parents

Forty-five parents attended our evening meeting, the largest attendance of the eleven schools. The relationship between some parents and teachers appears to be one of cautious acceptance, due in part to teacher reservations (listed above), and to parent demands. Fiske parents feel there is a need for more emphasis on basic skills and that some children move on with some areas in math, e.g., never really mastered. A current concern with open classroom practice (some parents want more) is being explored by interested parents together with staff.

Parents feel the atmosphere at Fiske is vital and exciting and that flexibility in the classrooms enhance childrens' experiences, that teachers give a great deal of time in class and extracurricular activities and that relations between parents and teachers is basically a healthy one. Charles Como, Principal, spoke of the need for parents and staff to clarify the roles each can play most effectively and noted that such an effort must be cooperative rather than competitive if students are to benefit in the long run.

84% of Fiske parents responding to the Citizen Survey rated the school excellent or good, and 77% of them would keep their children at Fiske given open enrollment. All subject areas were rated excellent or satisfactory (with art, music, physical education and reading the highest), except composition, which needs improvement. More than 30% felt that handwriting and math computation needed attention.¹

Fiske Students²

- liked specific subjects, (with math and art strong), adult relationships and special activities best
- liked Food, some teachers and reading least

- would change "Nothing", Food and some teachers at Fiske
- feel the most important things to learn about are Math, Reading and Getting Along with Others
- do not feel the size or age of a school matters but prefer a new, large one.

¹ For details of parent ratings, see Appendix B, page 6 .

² For summary of student responses, see Appendix A, page 7.

FRANKLIN SCHOOL

Franklin School has 385 pupils with a pupil-teacher ratio of 25 to 1, and is the only school in town expected to increase its student body next year. The school serves a heterogeneous district and the recent drop in enrollment has not affected Franklin to any marked degree. The building is fully utilized; some would consider it crowded. One wing (rooms 12-18) has such poor acoustics that the noise level interferes with classes.

Franklin is a team-teaching school with students grouped in Alpha (1/2), Beta (3/4), and Omega (5/6). The new Principal, Elizabeth Murray, sees her role on three levels: (1) to be actively involved in Franklin School with students, in the classroom with teachers, to know what is happening with whom; (2) with the community outside, to make as non-mysterious as possible the operations of the school for parents; (3) as a member of a broader team - the school system - directly involved in the curriculum areas. (The only problem is finding time to do it all.) She evaluates teachers in three steps: (1) talking with each about objectives for students, (2) observing teachers in class, (3) discussing a written evaluation with each teacher.

Curricula

Math Teachers use Houghton-Mifflin, Silver Burdett, Addison-Wesley, Harcourt-Brace, D.C. Heath and others in teaching math based on the Lexington Math program. Some staff have designed their own worksheets, some feel the math program expects too much too fast and does not offer a balanced presentation. They feel math is a particular strength at Franklin and find little need for a specialist. Several teachers recommended more use of commercially available materials in combination with development of curriculum inside the system. Some decried the lack of materials available to them because of the limited funds they have.

Reading In this area, there was the view expressed that no one reading program or approach is best for all children. LIRSP is in use at the primary grade levels, and a variety of materials: Educators Publishing, Primary Phonics, SRA Basic Reading Series, Macmillan basal readers. Teachers at 5/6 grade level use Merrill Reading Skill Cards, Merrill Reading Skill text, SRA, paperbacks. There is great dissatisfaction at this time that there are curriculum guides but no materials available. Teachers need materials but there is no money even in this crucial area. Some means of assessment used for reading are: Slosson Oral Reading, Nonsense Words Phonics Survey, LIRSP. One criticism about LIRSP was that it builds in isolation for children because of the way it is used.

Language Arts Teachers are unanimous that there is not continuity here similar to that in math and reading. They

are left to their own devices to a greater degree. Teacher designed worksheets and overheads are used with little if any reference to the Scope and Sequence. Trade books are used for individualized reading, writing, punctuation; e.g., Botel, Kottmeyer, Educators Publishing, D.C. Heath. Spelling and writing are considered very weak.

Social Studies At one level, all youngsters are rotated through different "explorations" and there is a regular time for social studies; at another level, social studies is rotated with science.

Science At 5/6 level, children are able to choose science subjects as electives. As mentioned above, at another level, science and social studies rotate.

Observations

Franklin teachers feel very positive about the new Principal and the atmosphere she is creating. There is a good relationship among staff who seem to be very dedicated and well "tuned in" to their students. The positive atmosphere is one of sharing, which includes ideas, materials and participation in a variety of efforts. There is a widespread feeling among teachers that the expected goals of parents and the town are not attainable in the context of the present large class size, which is the largest in town after Hancock School. There is not enough time to fulfill all the requirements effectively and individualized instruction does not and cannot really exist under these circumstances. Many faculty are also concerned about the transition to junior high school (a concern of teachers across the system as well). Principals and teachers feel that the change from the personal, nurturing atmosphere of the elementary school to the more impersonal atmosphere comes at the wrong time in a child's development, a time when the other pressures of adolescence are beginning.

Franklin teachers would like to see (1) more realistic goals set for teaching staff, (2) less parental pressure, (3) a slower pace to allow more time for teaching skills, (4) more use of commercial materials, ("why re-invent the wheel?"), (5) more time devoted to the sharing of ideas, materials, discussing problems and approaches to them, and (6) sufficient supplies and equipment.

It was clear to us that there is an unequal distribution of resources among schools, that Franklin is more than fully utilized in terms of space and other resources, that the lack of clerical help interferes with the educational process, more aides are needed (since they were cut the playground ratio is 125 students to one aide), and that the dedicated teaching staff is deeply concerned about children and positive in their approach generally. One of the prime strengths of the school, the Principal feels, is the teacher relationships.

Parents at Franklin

Parents at Franklin appreciate teacher efforts, feel they are very obliging in giving of their time (but would like more staff-initiated

communication about educational programs), and commented that their children enjoy school and "really want to go". They feel the need for a better reporting system than report cards, which do not really tell what and how a child is doing. If open enrollment were available, 61% would keep their children at Franklin and 73% rated the school excellent/good. All subject areas were rated excellent/satisfactory (with music, art, physical education and Human Growth and Development highest), except composition (46%) handwriting (46%) and math computation (44%) which were felt to need improvement. 31% feel reading also needs improvement.¹

Students at Franklin²

- feel the size and age of a school doesn't matter
- feel that Math and Reading and Getting along with Others are the most important things to learn about
- would change Food and "Nothing" at Franklin
- like French least
- like specific subjects and adult relationships best.

¹ For details of parent ratings, see Appendix B, page 6 .

² For summary of student responses, see Appendix A, page 7 .

HANCOCK SCHOOL

Hancock School accommodates 202 children in eight classes. It has the highest pupil-teacher ratio in town, 25.4 pupils per teacher, and the projected enrollment next year is 174. Hancock is the oldest public elementary school in the nation that has been in continuous use. The building is solid, spacious and very well-utilized. The top floor, closed twenty years ago as unsafe, was cleared of chairs and other accumulations by the principal and a small crew of volunteers over the summer and is now in use. One of the drawbacks of the school has thus been removed since the Facilities Study written last year.

Eight full-time teachers, part-time specialists, two aides and volunteers --which include two geriatric workers, high school students and five student teachers -- staff combined classes 1-2, 3-4, and 5-6. Teacher strengths and styles vary.

Only in kindergarten does the teacher work alone, and she is supported by a full-time tutor and one of the high school students. Two different learning approaches in the first and second class combine very strong emphasis on the basics and a more traditional educational philosophy, with heavy stress on individualized learning. At levels 3 and 4, one teacher is strong in math and science and integrating special needs children. Her partner provides "an extremely well organized but flexible structure. It is so well done that the organization is hardly noticeable. Together they offer a variety of approaches to meet individual needs," the new Principal, Kay Dillmore explained.

Three 5th and 6th grades with 75 children are taught by three teachers who function as core curriculum specialists, one teaching language arts, another math and the third social studies and science. All teach spelling and reading to their homeroom groups. Homerooms, music, art, gym and other groups except math and language arts are heterogeneous.

The majority of the faculty have taught in Lexington a long time. Classrooms are self-contained except that teachers work closely together to meet needs and challenge abilities. "We reap the benefits of team-teaching and the best of self-contained classrooms (a certain level of structure and emphasis on basic skills), and the open classroom (which teaches independence and allows children to proceed at their optimal learning pace)," Kay Dillmore explained. "The ideal structure is so good of course, that it isn't obvious; children know what to do and teachers know their responsibilities. Teachers here are never negative," she said in wonder. "We laugh over antics and work hard to solve problems. But we function as a community and everyone pulls together."

At the beginning of this school year, Kay Dillmore talked with each teacher to determine: (a) what program each would be teaching, (b) how each "feels" about children, (c) the goals each set, (d) the kinds of

children, their strengths and weaknesses each had in class and (e) the environmental setting of the classroom. The Principal's later observations related the instructional act to the setting and the children, and necessary suggestions for change or reinforcement were made immediately afterward so there are no surprises at final evaluation. Kay Dillmore sees her role as one where she should "help teachers become better teachers."

Curricula

Math Teachers prefer the newly revised math which stresses basics and problem solving more. Level tests and inventories are utilized extensively where available (some tests have yet to be written), and teachers keep close tabs on individual students. Teachers feel the individualized approach makes more work for the teacher since it requires a great deal more organization than working with groups at fixed levels; but they find it more rewarding. The math teachers don't stick solely to the book but constantly utilize work sheets and math games of their own (or those created by other teachers).

Science Hancock's program relies heavily on individual teacher efforts. The upper grades have a core curriculum teacher who specializes in science and social studies. Some first and second grade teachers would prefer hands-on materials readily available.

Problems cited with the program were (1) lack of continuity between grade levels, (2) lack of sequence between units, (3) a need for coordination and sharing within each school and across the system as a whole. Strengths listed were: (1) themes and concepts make fine guidelines, (2) individual units are good, (3) Hancock is working hard to coordinate and strengthen the in-school teaching of science, (4) the final camping trip for grades 5 and 6 culminates the year's studies, with particular emphasis on science.

Social Studies The LPS Social Studies Guide units and concepts are used flexibly throughout the school, with unequal emphasis. Teachers feel the program succeeds in stressing the inter-relatedness of man. Positive feelings were expressed about the curriculum which teachers modify and supplement as needed. They find it a good curriculum outline generally, though lower grade level teachers feel they need an almost new "everything". Materials from INTERACT (California), Allyn and Bacon and W. Schloat are used. Teachers need more hands-on materials, audio-visual resources, continuous updating and a way to share resources across the system.

Language Arts One teacher interviewed helped write the guide and finds it very useful. A second teacher creates her whole program "which is a joy for me to do," and uses only the general outlines of the Guide, while at grades 1 and 2 the Guide is considered very outdated and "relatively useless". Lippincott, SRA, Readers Digest, Lyons and Carnahan and "Helen Grush's beautiful materials" are used. "A new Language Arts and LIRSP combined would be very advantageous and provide a good check on us and for us."

Observations

Hancock is informal, warm, accepting. There is a good feeling among students, teachers, cafeteria personnel and other supporting people which makes it a very comfortable place to be. It is easy to understand why everyone feels the school is something special. There is a kind of magic about the environment which is hard to define. Some of the specific things which spoke to this while we were there were:

- the rapport between special need children and other children, teachers and staff in the school is unusually strong. (This is not always the case system-wide).
- teachers from their second to their twenty-third year here give the impression it's a privilege to work at Hancock. The only weaknesses mentioned were need of supplies, but they are afraid to make any requests for fear Hancock will be closed.

Parents at Hancock

The educational process at Hancock School, marked by diversity and the best of the traditional and progressive methods has an added dimension which is best described by those who work within and those from without the school who see and feel the results, the parents. Parents said the building itself is almost irrelevant to what happens at Hancock: "Staff utilizes the building and each other fully. The unlabelled diversity, the openness, exchange, the positive atmosphere where everybody knows everybody and has an identity and recognition...it all adds up to a very special place." Mothers fully staff the library three days a week and fill in the other two. There are not enough opportunities to fill parental offers of help and the school has a volunteer waiting list.

Parents are very proud of the faculty, pleased with educational results and resolutely determined to keep Hancock open. They have no deep concern about the school, except that it might be closed. Of the 68 parents who responded to the survey, 88% rated it excellent/good and none rated it poor. 79% would keep children at Hancock given open enrollment (12% did not answer).

Parents rated all subjects excellent or satisfactory (with social studies, physical education and reading highest), except music, which needs improvement. In only three Lexington schools were basic skills felt to have enough emphasis; Hancock was one of them.¹

Students at Hancock²

When asked for their opinion, students at Hancock said they:

- liked best, adult relationships, classmates and learning specific subjects at their school

- liked least, the building (no gym* the library and bathrooms), "Nothing" and Food
- felt the most important things to learn were Getting Along with Others, Reading and Math, in that order
- would change "Nothing," and playground and its equipment
- felt the size and age of a building doesn't matter.

¹ For details of parent ratings, see Appendix B, page 6 .

² For summary of student responses, see Appendix A, page 7 .

*Since corrected.

HARRINGTON SCHOOL

Harrington School has fourteen teachers in grades 1-6 with 322 pupils and a pupil-teacher ratio of 22-1. All teachers in the building have tenure and most have been there 10-15 years. The school is not crowded and the Principal, Mr. Johnson, feels the class size is close to ideal. Teachers feel the increase in duties with Chapter 766, 622, Metco and LIRSP have offset the advantages of smaller classes however. The library occupies two classrooms and art and French share a room. There is still need for space for tutors. Harrington is basically a neighborhood school which serves a diverse district. The structure is based on self-contained classrooms with some cooperative teaching between grades 3, 4, 5 and 6. Projected enrollment next year is 291.

Donald Johnson sees his role as Principal as an instructional leader for teachers, involved in the curriculum, yet working with the total community of children, teachers, and parents. The principal meets with his entire staff about once every 2 months, more often with specific grade level groupings, and has special parent meetings every other Thursday morning throughout the school year.

Curricula

Math Most of the teachers described themselves as "basic skills" people and had already adapted the "new math" program to better meet the needs they saw. They approve the move toward accountability even if it means using commercial materials. One teacher thought materials should follow the Scope and Sequence more closely.

Reading Teachers here like LIRSP, thought the materials were good and the fact that it gave faculty direction by providing specific objectives. It is however, very time-consuming for the teacher, and parents have been called in to help with some of the work.

Language Arts All would welcome a complete overhaul of this area. No one uses the LPS Language Arts Guide. Many in the lower grades integrate LARS and Reading but do not use the Guide.

Science Teachers do less with science now since the cut of specialists require they spend more time locating and collecting materials. This seemed a real loss to at least one first grade teacher who "liked to do science."

Social Studies The first unit each year in grades 2-6 is Map and Globe skills. Some of the teachers at the upper levels integrate reading, math and LARS with social studies. To meet the LPS requirements for AP students, they are grouped together for social studies and in grade 6 all students are given a topic to report on in depth.

Observations

Harrington is outwardly neat, orderly and well-cared for with experienced, conscientious teachers and a friendly, hard-working principal. The overall

atmosphere is more controlled than exciting, neutral rather than warm and happy. In many schools, the declining enrollments have meant that space to do some things teachers and parents have wanted to do is finally available. Thus the decline has initiated a spurt of creativity and lifted spirits. This does not seem to have happened at Harrington; spirits continue to droop as the drop in enrollment from 600 to 322 has meant the loss of an assistant principal and many specialists. Teachers do not seem to be a cohesive group and they particularly miss the former assistant superintendent (this is true across the system) who visited, observed, kept in touch and cared. They feel cut off. Something is missing; some parents call it lack of enrichment. Student responses indicate a sense of belonging, feeling good about their school, their teachers and thereby, themselves.

Parents

Parents are not displeased with the basically conservative approach at Harrington, but they feel the lack of imagination and excitement in many classrooms. They like the flexibility of the self-contained classroom with the good to excellent teachers and feel they are the strength of the school. They also feel that Harrington has a high percentage of "poor and mediocre" teachers who, especially in a self-contained setting, are the great weakness of the school. The independence allowed individual teachers makes it hard for Principal Johnson to change things. While parents feel "listened to" and well taken care of when personal problems arise with children, they feel ineffectual and un-heard when larger educational concerns arise. Discipline, focusing on the rights of and respect for others has been a major concern of the school and PTA this year. Parent responses and our meeting with them were marked by a sadness and a feeling of depression - that Harrington is not what it was and that the school has departed from its once highly competent, effective educational program. Many felt "there doesn't seem to be anyone holding it all together," and one parent said, "This school is like the one I went to and I don't consider that an advantage."

71% of Harrington parents would keep their children at the school given open enrollment, and 74% judged the school excellent or good. Parents rated all subject areas excellent/satisfactory (with social studies, reading, music and French highest), except for art which needs improvement.¹

Students at Harrington²

When asked for their opinion, Harrington students said they

- liked best specific subjects, adult relationships and the building
- liked least Food and staff

- felt the most important things to learn about are Reading, Math and Getting Along with Others
- would change Food, teachers and "Nothing" in that order
- feel the size or age of a school doesn't matter

¹ For details of parent ratings, see Appendix B, page 6 .

² For summary of student responses, see Appendix A, page 7 .

HASTINGS SCHOOL

Hastings School has a student body of 374 with a pupil-teacher ratio of 24 to 1 and a projected enrollment of 340 for next year. The lack of any sense of crowding allows for flexibility in the educational program of the school. Organizational structure is changing slowly from a self-contained concept to some cooperative teaching at all levels. Ellen Defantis is the new Principal and sees her role as one which will carry on present philosophy, help students and teachers wherever possible, and move into new directions slowly where they will be beneficial.

Much of the faculty has been at Hastings for many years and the school is moving from a more conservative format towards greater variety in educational options.

Teachers are seriously concerned about a sudden increase in the student body if some schools close and pupils are bussed to Hastings. The concern of faculty about the future generates a feeling of uncertainty in the school that could be described as the chief weakness permeating the educational program at present. They do not believe that their welfare and that of the school are being taken care of by the central administration and the School Committee. (This feeling exists in several elementary schools in Lexington.) This uncertainty manifests itself in a sense of frustration, and teachers question whether they are part of a democratic structure or not. One indication of this was the response to recommendations teachers and administrators made on facility changes. They submitted two plans. The School Facility Report ignored their recommendations and, in turn, made suggestions which showed a lack of familiarity with the present school layout. One suggestion was to place a music classroom on the stage in the gym where physical education classes would be taking place simultaneously with music classes.

Curricula

Reading The reading program is very good, staff feels that "children are reading and reading well." Teachers are now diagnosing individual reading difficulties and feel that the LIRSP may be even better than the preceding program. LIRSP, too new for a full evaluation, appears to develop mastery as the child moves along and requires little remediation if any, in later grades. Some teachers feel the program is cumbersome, and all feel it requires too much record-keeping. All feel it was poorly introduced: (1) there was no training for use or proper introduction, (2) materials were not available or only partially available which were required for teaching LIRSP and depended on teachers filling in the gaps. Many teachers feel the current low morale was partly generated by their experiences in implementing LIRSP. This is its third year at Hastings.

Math Almost all teachers praised the revised math program and feel it much improved over the original "new math" program. They feel

the new program will meet demands from parents and strong inclinations of teachers to place more emphasis on basic skills. Some teachers would have reduced terminology still further and revised the Scope and Sequence to better meet the realities of what happens in the classroom. Teachers felt the method of implementation was poor - that funding and energies go into development of new materials but nothing is left for workshops for training teachers to use it. The revised math is only partially completed and teachers must write their own tests. (Teachers were given the option of using the program this year or waiting until next year.)

Language Arts Teachers felt LARS is the weakest of the curricula and needs immediate attention.

Social Studies This program is not as interesting as it could be and many conscientious teachers have adapted the curriculum to childrens' interests. It was emphasized that reading, math and handwriting come first in the lower grades and that social studies and science fit in when time permits.

Science It generally has a low priority. The curriculum was described as adequate and this year "for the first time", materials are readily available.

Observations

School staff and parents at Hastings think that the central administration and School Committee no longer provide guiding priorities for developing the educational program in an elementary school. Teachers here feel they are being pulled in too many directions at once. Most of those interviewed voiced strong opinions that Lexington implements new programs too quickly and cited Chapter 766 and 622 as examples. They would like time to concentrate on one new program for at least two years before another is initiated. Constant innovations draw time and energy away from fundamental education which should be the chief priority. They have become increasingly frustrated by hours spent in committee work and clerical details and want to have "more time in the classroom with children."

Parents at Hastings

Parents in general, were pleased with the school and support it strongly. One parent observed that the school reached a good balance between expecting too much and not demanding enough of pupils. Teachers help children to learn and make it enjoyable. Other parents commented that the school's educational program had a lot of structure while stressing individual instruction for each child. Individual parents made the following requests:

- more male personnel in the school
- more drill in the basics, particularly in math

- better feed-back on a child's scholastic progress
- no placement of hyperactive children in the regular classroom
- the Human Growth and Development curriculum should start in kindergarten and go through sixth grade with less emphasis on sexual maturation in 5th and 6th grades. (It should be noted that only four parents attended the meeting.)

74% of Hastings parents would keep children at the school given open enrollment, according to responses to the Citizen Survey. 91% rated the school excellent/good. 115 parents judged all subject areas excellent or satisfactory (with art, music, physical education, science, social studies and reading receiving 67% or more). 32% or more felt composition, handwriting and math computation need improvement, but even in these, a plurality was satisfied with present programs.¹

Students at Hastings²

When asked for their opinions, students at Hastings said they

- liked special subjects (math and art specifically), adult relationships, special activities, gym and sports best
- liked food and French least
- would change food and "Nothing" and some teachers
- chose math, reading and "Getting Along with Others" the most important things to learn about
- prefer new, large schools (50%) and size and age do not matter (50%)

¹ For details of parent ratings, see Appendix B, page 6 .

² For summary of student responses, see Appendix A, page 7 .

MUNROE SCHOOL

Munroe is Lexington's smallest school, with 184 students drawn from a diverse area. There are 24.1 pupils per teacher and the projected enrollment for next year is 176. The two story building has large, bright classrooms with adequate storage space, with the gym-auditorium and special activity room in the basement. Two rooms on the second floor are used for art and a library. Teachers feel the facilities allow anything one could really want, but they're not built-in as conveniently as in some of the newer schools. The playground is adequate in size and excellent in design (an all-school activity).

There are eight classes for grades K-6 which are generally self-contained. Regrouping in some subjects in some grades is fairly flexible and teachers use a variety of teaching formats, and feel that materials available are good.

The Principal sees his role as a facilitator. Mr. Lombard feels he is there to make classes "go right" for the children and the teachers. To do this he observes, suggests, helps, coordinates and counsels.

Curricula

Math There was some concern about the math program which teachers have revised on their own to emphasize skills more - as the revised math program under study now does. Texts are available for reference but there are not enough for each individual child.

Language Arts Teachers feel the Guide is of little use because it is 9 years old and does not have Scope and Sequence charts. They devise their own programs generally incorporating the concepts and skills of the Guide.

Reading Teachers feel LIRSP is not a total reading program and requires a lot of paperwork and perhaps too much test-taking. They find the materials cumbersome, dull, colorless and somewhat boring for the child. The advantages they find for the child is the one to one relationship of child and teacher. Its accountability to the parents is definitely a plus.

Science and Social Studies These subjects are taught in large blocks of time - a month or six weeks until a project is completed. Much of the science is built around a camping trip to Mt. Monadnock. They have found specialists helpful and are comfortable with units teachers have done with them before this year. Teachers miss the help formerly available.

Teachers question the profusion of curriculum employed with no defined priorities. They find themselves buried in paperwork and not averse to adopting a few good commercial programs. They also feel children need more time to complete tasks and more quiet time generally.

Observations

Munroe School is a community school that operates with flexibility, cooperation and caring. Parents and teachers are both very positive about the school. There is a feeling of identity, of belonging and unity that is carried out in many things they do. Parties are all shared and experiences tend to be all-school affairs. It feels like a large, warm extended family. Its size is considered ideal by teachers and the Principal - for flexibility and communication. Each child seems to know all, and be known by all, the teachers. This was evident on the playground where teachers take morning recess with the children, and later, when teachers walked their children outside to say goodbye at the end of the day.

The obvious weakness of a small school is a limited range of teaching styles, possibilities for regrouping, and always the chance of a personality conflict between teacher and student where change is difficult. Munroe seems to manage this aspect without undue problems.

Parents at Munroe School

Parents emphasized the intimacy and security of the school, the benefits of multi-age socialization and the valuable personal feeling of the school. There is strong parental concern about the school, and considerable parental support in the form of volunteers in the classrooms at the primary levels particularly.

Among the 24 parents who spoke with us, many had had previous experience at a larger school and reacted very positively to the benefits of this small one. Parents stressed the good rapport and morale between teachers, the Principal, parents and children at Munroe and are deeply concerned about the possible dissolution of such a valuable educational experience.

81% of parents rated Munroe excellent or good (53% excellent) on the Citizens Survey, and 85% would remain at the school given open enrollment. Parents rated all subject areas satisfactory/excellent by a majority, except for composition, 32% feel that area needs improvement as does math computation (51% satisfactory, 32% needs work). They rated music, research skills and social studies and physical education highest - all of them by 66% or more.¹

Students at Munroe²

When asked for their opinions, students at Munroe said they

- liked best adult relationships, classmates, specific subjects, and the small size of the school and positive atmosphere at Munroe
- liked least the building (gym and bathrooms), "Nothing" and Math
- felt the most important things to learn about were Reading, Math and Getting Along with Others

- would change Food first, followed by "Nothing" and like separate gym, cafeteria and auditorium second
- feel it doesn't matter if a school is old, new, large or small

¹ For details of parent ratings, see Appendix B, page 6 .

² For summary of student responses, see Appendix A, page 7 .

PARKER SCHOOL

Parker School is one of the older, smaller schools, and draws students from a diverse community. It has a student body of 257, a pupil-teacher ratio of 23 to 1 and a projected enrollment for next year of 246. The school offers a variety of learning formats which include self-contained classrooms and team-teaching, in addition to what appear to be unusual learning experiences. Once a week the entire 6th grade teams up with Kindergarten or primary children for part of a day. This is intended to teach social responsibility, help the reading and math of upperclass students and create bonds between the two age groups. Its success is evident on the playground, e.g., older children are concerned and will take special care of younger ones. Individual 6th graders accompany younger children on field trips as part of this philosophy.

One experimental program in sixth grade is run as an open classroom two or three consecutive afternoons every other week, when pupils can choose activities from six different "stations." The teacher feels pupils have difficulty making free choices and need the consistent structure of a regular classroom as well as training in decision making.

The eleven Parker teachers voluntarily take playground duty because they feel they have a more productive afternoon with pupils when recess is over. Teachers individualize programs extensively; e.g., one youngster works in a 7th grade workbook under the guidance of the math specialist.

Mr. Paul Foley, Principal, encourages teachers to create new approaches and approves of team teaching because he feels a child benefits when several teachers cooperate. Formerly at Bridge School as interim principal, Mr. Foley has experienced both the large and small schools and is very comfortable at Parker with what's happening educationally. Specialist schedules are arranged so mornings are devoted entirely to reading and language arts and specialists fit in after math in the afternoon. Faculty appreciate the uninterrupted time this provides.

Curricula

Reading The Parker reading specialist sees and places all students in appropriate groups at the beginning of each school year. She feels there is little fragmentation in the program here. She noted that though she does basically the same things at both her schools, teachers make use of her in different ways. Teachers say they know when she is in the school, have a very personal relationship which enables close observation and evaluation of children and their progress and problems. (In the larger schools, we got the sense of a communication problem partly due to different necessary schedules, less continuity in programs and less sense of the child as a personality.

Teachers place considerable emphasis on reading throughout the school. (One teacher said it supersedes everything else in the lower grades).

They use a variety of materials including the Ginn series as basal texts, Lippincott materials as supplements, SRA, McCall-Crabbs, many others, and the LIRSP program. LIRSP was introduced in the first grade in 1973 and although teachers were initially skeptical or angry because of increased work and time involved, the reactions appear to be positive now. They realize this extra work is particularly beneficial at Parent Conferences when they can pinpoint exactly where children are. LIRSP is used now in grades K-3.

Math The majority of teachers use the LPS Math Guide and are delighted with the revised program. Teachers do use other materials as well. For example, one uses her own pretests before level testing is done and her own self-correcting instructional math cards which follow Scope and Sequence. At the 5/6 levels, each teacher has only two levels in a classroom and they feel this is working very well. One weakness in the "level" approach is that labelling creates considerable static from parents, who tend to see the movement from level to level as something more than it is. Teachers believe the achievement of competence in a given skill or concept is what counts, not what level a child is at when. Another weakness cited is that more effort should be made to have corresponding levels (similar to elementary schools approach to individualized learning) when children go on to junior high. (This was a serious concern in many other schools as well.)

Social Studies As in other schools, there is considerable variation in the social studies program. Some teachers rely exclusively on the LPS Social Studies Guide, some do their own things, and some combine the two:

- At the primary level, units alternate because of the team teaching approach.
- At another level, one teacher uses the LPS Guide for the unit on Archaeology and Architecture, a self-developed geography unit, and current events and "News Time" as part of the program. He also integrates social studies with the art specialist.
- At the third grade level, Oceans, Water Control and Celebrations, Pioneers and Navaho are used.

Science There is a program underway at Parker to offer a core six to eight units throughout the school each year. Some teachers see science as a way to initiate class activity so that it becomes an integral part of the classroom. One primary teacher always has such things as magnets, microscopes, bulbs, batteries, shells and rocks in her room. Her approach is one of informal discovery. When one of the Halloween pumpkins in her room rotted before the holiday's arrival, they did a study of molds. Another teacher felt science should be better organized and teachers given more and better guidance, that a physical facility makes no difference except in its unique setting. For example, Parker uses the stream out back for environmental study, Hancock uses Belfry Hill.

Observations

The Principal greets children as they arrive at school, is outside at recess time and says goodbye to them as they leave for home. He appears to know each by name and is visible throughout the day, interacting with youngsters wherever he happens to be. It was obvious that he is well-liked, and that he sets the tone for the positive, cooperative spirit which permeates the school community at Parker. Teachers feel Mr. Foley is supportive and that he listens to what they have to say and is available whenever they need him.

We found teachers enthusiastic, dedicated, and devoted to this small school and to the children under their care, ("it would be a sin to close it.") The warm, informal atmosphere is particularly useful for children with problems (because they need the closeness), and other students said what they like best is "knowing everyone...that all the people are nice and friendly."

As in other schools facing possible closing, staff members feel uneasy and while in-school morale can only be described as very high, teachers feel out of touch with central administrators and with School Committee. Some had never met Dr. Fobert.

Teachers praised parents support and their involvement and cited the parent-run Fair, which raised \$125 for each teacher to spend as they needed in the classroom, as evidence of their awareness about classroom needs.

Parents

Forty parents attended our evening meeting, the second largest attendance of the eleven schools. The general feeling expressed by a large majority was that the school is "a terrific place" in spite of its shortcomings. There was obvious pride and satisfaction cited in many things:

- Parker graduates have no difficulty at the junior high level.
- Parents are listened to by school people.
- It is a warm, friendly school.
- Children feel free to contact the Principal.
- The school is sensitive to the needs of kids.
- It motivates children to learn.
- Children do not get "lost" as in larger schools, and Parker gives them self-confidence.
- Problems are picked up before they get out of hand.
- Teachers are concerned with the "whole child".

Weaknesses noted were the music program, the limitations of grouping because of limited size, there is too much testing, some classes have too many levels for teachers to handle easily, parents would like more information about the curriculum. Some of the negative comments focused on the obvious shortcomings of a small school: more equal grouping and peer stimulation, more enrichment at a large school.

Parents on the Citizen Survey rated Parker School 84% excellent/good (54% excellent), and 80% would remain here if open enrollment were available. Subjects rated highest were art, physical education, human growth and development and science as well as reading (all by 62% or more). The following were judged satisfactory but more than 30% felt them in need of improvement: composition, math computation, math reasoning and music.¹

Students at Parker²

When asked for their opinions, Parker students said they

- don't think it matters if schools are old, new, large or small (but 19% liked new and 12% liked new and large)
- felt the most important things to learn about are reading and math
- think the best things about Parker are adult relationships, specific subjects (with math strong), and gym and sports
- are least enthusiastic about the building (size of gym, the auditorium, cafeteria and bathrooms), and French
- would separate gym, cafeteria, and auditorium emphatically first, and second would change food and "Nothing".

¹ For details of parent ratings, see Appendix B, page 6 .

² For summary of student responses, see Appendix A, page 7 .

IV B. Autonomy and Diversity

The diversity of the schools, in age, size, environment and especially in teaching styles, is immediately obvious in the eleven elementary school profiles. The schools even vary in the diversity of educational options offered within them. Some schools are strictly team-teaching, others have all self-contained classrooms, still others have combinations of teams, open classrooms and/or cooperative teaching. The diversity of educational options, both within and between schools, is in part a result of the degree of autonomy which individual schools have.

The diversity in the Lexington elementary schools and the autonomy which enhances it have been widely heralded for many years. The committee has given considerable thought to the advantages and disadvantages of a system which encourages independence and variability to the extent that our school system does.

Has the autonomy of the elementary schools been really important to the education of children in Lexington? The committee feels that in the past it has, for several reasons:

- the autonomy of the schools has allowed the development of a teaching program which utilizes the particular strengths of each faculty;
- it has encouraged the principal and teachers to try to find better ways to do things on a continuing basis;
- it has attracted very capable people to teach in Lexington, those who desired growth professionally and knew that the environment here encouraged continuous development;
- it has allowed principals to develop healthy relationships in their schools and to match educational programs to parent preferences and neighborhood characteristics wherever feasible;
- it has encouraged a sense of loyalty among the entire community of each school and enhanced esprit de corps.

These are valuable assets for any educational system, because they have direct positive effects on what happens to children in the classroom, the school, and on the playground. But, in the first part of the preceding chapter we pointed out the ways in which the schools have been left too much on their own in recent years. The schools have not received the support and materials they need. In particular the central development, articulation and monitoring of curricula, which is needed to help the classroom teacher and to

ensure continuity in children's education, has been missing. As we move to correct this situation, the autonomy of the elementary schools and their principals will be reduced somewhat. Schools will be expected to follow town-wide curricula.¹ This does not mean, however, that the freedom of schools and teachers to choose their own methods and materials need be seriously interfered with. Indeed, it is important to ensure that this does not happen; otherwise, we will lose the several benefits which derive from a reasonable amount of autonomy.

The most important benefit which a degree of autonomy can have is its contribution to our ability to attract and maintain a teaching staff of high quality. Part of the attraction here has been the opportunity for professional growth which derives from freedom to develop or try new ideas and to use personal strengths and expertise to the fullest. If we can get some of our major curricular efforts moving, opportunities for professional growth will be enhanced, not diminished. This is the beauty of the model (versus the reality) of the system under which our schools have been operating.

The diversity of educational options which exist in Lexington is also important to the education of our children. For one thing, it is important simply because it goes hand-in-glove with the autonomy of the schools, the significance of which has already been pointed out. But diversity within the schools is also important because it increases the capacity of the schools to match individual students with teaching formats which best suit their needs. Obviously the range of options which one school can provide is limited. But the contact which the committee members have had with our school system and several others has led to the conclusion that the diversity which now exists in Lexington is unusual and quite valuable.

At present, we are not making full use of the diversity which exists between schools. Parental (and staff) choice of educational options for a particular child are constrained by the district in which the family resides. If, for example, the school in that district is entirely a team-teaching school while the parents feel that a self-contained classroom experience would be very important for the child's development, it is not easy to get the child reassigned. There is on the books in Lexington an "open enrollment" policy, but the truth is that it cannot be utilized except in highly unusual cases. A persuasive argument must be made both by teachers and parents, and even then administrative approval is difficult to obtain. The committee feels that serious consideration should be given to adopting a limited open enrollment policy, which would allow parents to select the elementary school which a child will attend, if two conditions are met: (i) there is room in the desired school; (ii) the parents provide transportation for the child.

¹ Of course, they will also be involved in developing them.

The committee is not in favor of an open enrollment policy without these restrictions. The absence of the first restriction could create chaos. The absence of the second restriction would consume valuable tax dollars at a time when the resources will be needed for major curricular efforts. The fact that there is a substantial risk of confusion or increased costs is corroborated by the fact that, on the committee's Citizen Survey, 16% of elementary school parents indicated that they would send their child to a different elementary school if the option were available. The committee's understanding of overall citizen priorities leads it to conclude that an attempt should be made to utilize more fully diversity between schools, but that this must be limited.

Two fundamental questions remain about potential disadvantages of autonomy and diversity in our schools. Are they costing us anything in terms of educational effectiveness? Do they lead to serious inequities in the educations which students receive? These can best be answered after the relative effectiveness of the existing schools has been examined. This is an important part of what will be done in the next four sections.

IV C. Ratings of Program Areas

The second task associated with the committee's charge to assess the strengths and weaknesses of the educational program is to see how program areas are rated by various groups. Are parents satisfied with the results? Are teachers satisfied with the results? What do students see as the strengths and weaknesses in their schools? Although this report deals with elementary programs, we shall summarize the responses from the three junior high schools and the high school as well, since several programs do continue through all levels.

IV C. 1. Elementary Programs

Table II presents side-by-side the "excellent plus satisfactory" versus "needs improvement" ratings which elementary teachers and parents gave fifteen program areas.¹ The teachers clearly feel able to judge more areas than do parents. The most striking examples are in Counselling and Special Needs with the high "no opinion" rate among parents, many of whom have no familiarity with the areas. Exclusive of reading -- where parents judged "reading" and teachers "reading comprehension" -- in every subject area except Social Studies, parents and teachers are within 5-6 percent of one another in the degree of "needs improvement." Parents and teachers are equally positive about Social Studies but teachers see its shortcomings perhaps. In general, parents and teachers seem to agree on the need to improve Composition, Handwriting, Math Computation and Reasoning, Counselling, and Science.

¹ For complete details, see Appendices A and B.

TABLE II

How Parents and Elementary Teachers Rate Lexington School System Programs

Key: ES = percent indicating excellent or satisfactory
 NI = percent indicating Needs Improvement
 () = percent giving no opinion when exceeds 10%

SUBJECT	ELEMENTARY TEACHERS			PARENTS		
	ES	NI		ES	NI	
Art	94	5		66	11	(23)
Composition	62	34		41	38	(21)
French	67	9	(22)	54	17	(29)
Handwriting	47	39	(11)	48	31	(21)
Human Growth & Development	49	18	(28)	55	20	(25)
Math Computation	65	26		47	33	(20)
Math Reasoning	67	23		52	28	(20)
Music	88	10		66	15	(19)
Physical Education	93	5		71	11	(18)
Reading Comprehension	88	8		* 60	23	(17)
Research Skills	61	19	(14)	50	22	(28)
Science	68	28		57	21	(22)
Social Studies	64	28		62	12	(26)
Counselling	63	31		41	27	(32)
Special Needs	78	21		41	15	(44)

* Parents rated "Reading", not just Reading Comprehension

One thing which the raw data show, and which is only partially evident in Table II, is that the percentage rating "excellent" was usually quite a bit higher for teachers than for parents. Parents as a group did not rate any program "excellent", whereas teachers as a group did so rate Art, Physical Education and Music.

A comparison of parent ratings in the eleven elementary schools is given in Tables III and IV of Appendix B. The highest level of parent satisfaction with programs was at Hancock, followed by Hastings. The lowest level was at Estabrook followed by Franklin. In the five curricular areas which the committee selected for study, the highest and lowest levels of parent satisfaction were as follows:

<u>Subject</u>	<u>High Parent Rating</u>	<u>Low Parent Rating</u>
Language Arts		
Composition	Hancock	Estabrook
Handwriting	Hancock	Franklin
Mathematics		
Computation	Hancock	Estabrook
Reasoning	Hancock	Adams, Bridge, Estabrook
Reading	Hancock	Franklin
Science	Hastings	Bowman
Social Studies	Munroe	Franklin

When asked in a multiple-choice question about the "best taught" subjects, the 4th, 5th and 6th graders across the system said Math. The 40% choosing Math was consistent for both large and small schools. 14% chose Reading, 13% Language Arts, 13% Social Studies, and 12% Science. In the open-ended questions, "Reading and Math" was generally considered to be the "most important thing to learn about" (averaging 31% and 34.5% respectively), and Math, followed by Art, was the most frequently mentioned subject in the responses to "What do you like best about your school?" Math, Music, French, and Reading were also "liked least."

IV C. 2. Junior High Programs

Junior High School parents, teachers and students rated program areas as shown in Table III. Many parents (about 20%) did not feel qualified to rate the junior high programs. Comparing the three junior highs, one notes the increase in response from Muzzey to Diamond to Clarke (Muzzey averages about 70%, Diamond 75% and Clarke 80%); also there is little variation between the schools in

TABLE III

How Parents, Jr. High Teachers, and Jr. High Students Rate Lexington School Systems Programs

Key: ES = percent indicating excellent or satisfactory
 NI = percent indicating Needs Improvement
 () = percent giving no opinion when exceeds 15%

Subject	Parents						Teachers		Jr. High Students	
	Diamond		Clarke		Muzzey		ES	NI	ES	NI
	ES	NI	ES	NI	ES	NI				
Art	66	10	64	14	55	12	88	7	66	20
Composition	49	32	52	35	44	31	38	53	69	19
Foreign Language	68	10	73	12	60	9	84	4	70	19
Handwriting	32	34	39	36	34	34	21	58 (19)	46	25 (29)
Human Growth & Development	55	18	54	23	46	20	48	32 (20)	not asked	
Math Computation	59	19	66	19	52	20	77	16	78	12
Math Reasoning	60	18	65	21	53	20	70	19	71	19
Music	64	13	68	13	58	8	81	7	51	33 (16)
Physical Education	62	17	71	13	61	10	77	12	78	18
Reading	58	20	59	26	49	24*	61	30	*73	16
Research Skills	52	22	60	25	48	20	62	24	72	18
Science	73	8	75	11	59	13	88	3	not asked	
Social Studies	70	7	76	6	66	7	85	5	76	13
Vocational	24	35	32	31	23	28	28	50 (22)	not asked	
Counselling	35	34	49	23	35	24	75	18	not asked	
Special Needs	24	16	31	14	23	16	77	16	not asked	
Sports	54	17	63	15	56	9	not asked		not asked	

* On teachers and students questionnaire, topic listed as Reading Comprehension

the "needs improvement" percentages, usually only 1 or 2%. A generally high rating seems to be given to Math (Computation/Reasoning) and Research Skills by parents, teachers, and students; and all are in agreement on the amount of improvement needed. Science, Social Studies and Foreign Language seem to be seen as strong programs by both parents and teachers, though the students want slightly more improvement in Social Studies than teachers or parents and they want quite a bit more in Foreign Languages and Art.

Composition seems to be seen very differently by parents, teachers, and students. Teachers want a great deal more improvement than the students. Parents seem to be rather low-key about Handwriting and Counselling while teachers are much more satisfied with Counselling services than Handwriting. Special Needs is also seen as in need of improvement by the same percentages of parents and teachers, but far more teachers are satisfied with it than parents (most of whom have no opinion about the area). Teachers also think vocational help for students is in great need of improvement, more so than the parents, of whom approximately 40% had no opinion.

Art, Music, and Physical Education all seem to be seen as good programs by parents, teachers and students, though students are much more equivocal about Music than the other two subjects.

IV C. 3. High School Programs

Table IV displays high school parent/teacher/student ratings of programs. In the high school programs, both parents and teachers view Science, Social Studies, and Foreign Languages as the strongest academic programs. Math Computation and Reasoning fall into second place with both parents and teachers, who find it a strong program, but in need of some improvement. The students rate Math Computation slightly better than the other two groups, but there is general agreement in their assessment of the Math areas.

Research Skills and Composition are not seen as positively by the teachers as they are by parents and students. Composition is fourth on the teachers' list of subjects to improve after Reading Comprehension, Vocational Education, and Counselling. Even 31% of the students thought Composition needed improving.

Handwriting was given a low rating by all, but students found less need for improvement than teachers and parents.

Art, Music, and Physical Education seem to be strong programs, giving general satisfaction (except Music to the students). Vocational Education and Counselling are seen as most in need of improvement by both parents and teachers.

TABLE IV

How Parents and Sr. High Teachers and Sr. High Students Rate the
Lexington School System Programs

Key: ES = percent indicating excellent or satisfactory
 NI = percent indicating Needs Improvement
 () = percent giving no opinion when exceeds 20%

SUBJECT	PARENTS		TEACHERS		STUDENTS	
	ES	NI	ES	NI	ES	NI
Art	71	6 (22)	82	2	67	8 (25)
Composition	51	45	39	51	59	31
Foreign Languages	73	19	71	8 (21)	68	19
Handwriting	26	48 (26)	21	36 (40)	39	27 (34)
Human Growth & Development	48	31 (21)	40	33 (27)	not asked	
Math Computation	67	26	58	22 (20)	72	12
Math Reasoning	66	25	60	15 (25)	66	19
Music	78	3	85	2	59	10 (31)
Physical Education	76	14	71	15	77	18
Reading	51	40	*39	56	*56	22 (22)
Research Skills	60	31	47	38	64	24
Science	81	13	77	8	not asked	
Social Studies	81	13	77	8	65	18
Vocational Ed.	25	58	26	56	not asked	
Counselling	24	66	39	53	not asked	
Special Needs	26	24 (50)	61	32	not asked	
Sports	73	7 (20)	not asked		not asked	
Business Courses	35	10 (54)	not asked		not asked	
EWOW	30	17 (53)	not asked		not asked	
Max-Ed.	35	23 (42)	not asked		not asked	

*"Reading Comprehension" listed on teachers & students questionnaire

It is interesting to compare the junior high teachers' ratings to those at the senior high. Most subject areas are rated almost exactly the same by teachers at the two levels. Controversial Composition is rated the same by junior and senior high teachers, but Reading Comprehension and Counselling are dramatically different, dropping badly at the senior high. Teachers also rate Math Computation and Reasoning and Research Skills less highly at the senior high than junior high. Special Needs also seems to fall off at the senior high in its teacher-rating.

Parents at the junior and senior highs seem to rate the programs about the same, except Composition, Vocational Education, and Counselling, (allowing for the increased response at the senior high level which increased each number about 5%). All these areas are seen as needing much more improvement at the senior high, especially Counselling.

It is amazing how consistent the parent ratings at junior high are with parents at elementary level. Composition, Research Skills, and Reading satisfaction are about the same. Fewer think Math Computation and Reasoning need improvement at junior high than do at elementary level. Science and Social Studies give less satisfaction at the elementary level than at the junior high.

Composition is the one program at all three levels receiving the largest percentages in the parent-teacher groups for need of improvement. At the elementary level, about 35% of parents and teachers agree on need for improvement but differed on satisfaction, teachers being more pleased than parents. In junior high, the reverse is true; the parents are more satisfied than the teachers, with percentages reversed between the two groups. At senior high, parent dissatisfaction has grown to almost match the teachers.

IV D. Standardized Testing as a Means of Assessment

Another means of assessing the strengths and weaknesses of elementary programs is to examine the results of the standardized tests which have been given regularly to Lexington students for many years. Has the average level of achievement (in basic skills) in Lexington been rising, falling, or holding steady over the last ten years? Are our children performing up to their intellectual potentials, as measured by IQ tests and test scores in basic skill areas? Are there significant IQ-corrected differences between the achievements of children in the various Lexington elementary schools?

The committee has attempted to answer these three questions. All of the work has been carried out with due regard for the sensitivity of some of the information and the limitations of standardized testing. More will be said about the limitations after the conclusions have been presented.¹

¹ The detailed description of the committee's work on test scores is contained in Appendix C: Analysis of Pupil Performance Data.

IV D. 1. Trends

To answer the first question, the committee used town-wide average scores on the Iowa Test of Basic Skills. Average scores for each grade 3-8 in various skill areas were compared year-by-year, from 1965 through 1973. Three conclusions were reached. (i) There has been very little change in the achievement scores for grades 3 and 4. (ii) There has been a slight downward trend for students in grades 5 and 6. (iii) There has been a pronounced tendency for scores in grades 7 and 8 to decline. Thus we see in Lexington a bit of the downward trend which has been so widely discussed in the public press recently. The magnitude of the decrease is small enough that if national scores are going down markedly the Lexington students are probably doing increasingly better relative to the rest of the country. The committee did not have the national data to test this. But, should we be concerned about the Lexington decline in relation to fixed norms? If the only analysis of data we had were the one just described, the answer would be unclear. In fact, we would probably have a confusing debate: The magnitude of the decline has not been very great; the tests have remained fixed, while curricula and goals have not; there are many things we teach which the tests don't measure; etc. Still, the committee feels there is some cause for concern, because of the reinforcement which this elementary analysis lends to the more thorough analysis made to answer the second basic question posed earlier.

IV D. 2. Performance and Potential

The committee compared the achievement test performances of 427 Lexington students with their "potentials", as measured by IQ scores and ages. The sample consisted of those students who began first grade in a Lexington elementary school in 1967 and who completed grades 1-6 in that same elementary school. At each of three stages of development -- Grade 3, Grade 5 and Grade 7 -- a formula devised by Professor Helmer Myklebust of Northwestern University was used to calculate an Expectancy Age for each child, by averaging chronological age, grade age and IQ.¹ For each student, this was compared with Achievement Age in Reading Comprehension, Spelling and Arithmetic.²

For each of the three subjects (and at each of the three stages) particular attention was paid to two groups of children: those whose Achievement Age exceeded their Expectancy Age by more than one-half year and those whose Achievement Age fell short of Expectancy Age by more than one-half year. Several conclusions were reached.

¹ The IQ score is converted to a grade level using a chart developed by Myklebust. For this and other details of the analysis, see Appendix C.

² Achievement scores are regularly converted to grade equivalents.

- There are substantial numbers of children achieving at a high level in every grade, in every subject, at every IQ level.
- There are significant numbers who are underachieving in every grade, in every subject, at every IQ level.
- The percentage of underachievement rises significantly from lower to higher elementary grades.
- There is greater underachievement in those children with lower IQ's.
- There are numbers of students with higher IQ's who are underachieving and who are not presently being identified in any systematic way within the school system.

In connection with the second and third conclusions, one table from Appendix C should be reproduced here. For each student, Expectancy Age was subtracted from Achievement Age. (A negative difference indicates underachievement.) The differences for the 427 students were averaged. The results for the three grade levels and the three subjects were as follows:

TABLE V

Mean Achievement Age Minus Expectancy Age
For a Sample of 427 Students

<u>Grade</u>	<u>Reading</u>	<u>Spelling</u>	<u>Math</u>
3	0.14	0.10	-0.01
5	0.06	-0.02	-0.22
7	-0.33	-0.43	-0.43

By the seventh grade, the average level of underachievement is over a third of a year in each subject. These declines would have occurred by chance less than one time in a thousand. The magnitude and the statistical significance of the results strongly suggests that, in spite of the unreliability of IQ and achievement testing, declining performance with increasing grade level is something which we should be quite concerned about.¹

¹ It is worth noting that the average IQ of students in the sample used was 120.

IV D. 3. Differences Between Schools

The third basic question, about IQ-corrected differences between schools, was not analyzed by separating the data from individual schools. The eleven schools were grouped into three categories: small (Hancock and Munroe), large (Bridge and Bowman), and medium (the seven other schools). The sample sizes in the three categories were 19, 106, and 302, respectively. Eighteen analyses of covariance were performed. These tests failed to yield a single case of significant variation in performance between students from the three school groups. The obvious conclusion -- that there is no difference -- would appear to be sound as far as medium and large schools are concerned, but cannot safely be drawn when comparing the small schools because the small school sample was biased in two ways. First, the sample size for that group was too small (19). Second, at the time this group of students attended elementary school, the AP (Advanced Placement) students from small schools were sent elsewhere and they were not part of the sample.

IV D. 4. Use of Standardized Tests

Recently the validity of testing, both IQ and Achievement, has been questioned. IQ tests are apt to label children and increase the inequities in education. They are biased toward a certain socioeconomic population. There is serious doubt as to whether they measure intelligence. Indeed there is question as to what intelligence really is. Nevertheless they are the standard means of evaluation, both national and local, and as such deserve an explanation.

There are both group and individually administered IQ tests. Some of the group administered tests that have been popular are the Otis-Lennon Mental Ability Test, the California Test of Mental Ability, The Otis Quick-Scoring Mental Ability Test, the Lorge-Thorndike Intelligence Test, the Henmon-Nelson Test of Mental Ability and the Kuhlman-Anderson Intelligence Test. Individually administered tests are the Stanford-Binet Intelligence Scale, the Wechsler Intelligence Scale for Children or the WISC, the Wechsler Preschool and Primary Scale of Intelligence or WIPPSI and The Illinois Test of Psycholinguistic Abilities or ITPA.

Individually administered tests are more reliable, they are not confined to paper and pencil skills, they involve face-to-face verbal interaction between tester and child and the manipulation of materials, and they are useful for the purpose of diagnostic evaluation. They are far more accurate in evaluating the nonverbal child, the child who has difficulty with reading or writing or working under pressure within a certain time limit.

The Stanford-Binet and the Lorge-Thorndike tests were used at the time that the statistical data was taken for this report. The

discrepancy between scores, in many instances, was extreme. In twenty cases The Stanford-Binet scores were thirty or more points higher than the Lorge-Thorndike. In one case the score on the Lorge-Thorndike was 87 and on the Stanford-Binet was 121. A score below 89 is considered retarded. Thus the implications are enormously serious.

Any testing instrument is just as good as the testor who administers it and the person who interprets it. On the one hand the fact that in Lexington at the present time a WISC is administered to every second grader is very exciting. On the other hand this is very expensive and often the testors have little experience which makes the results doubtful. Teachers, who have access to the results, are often not trained in the interpretation of the results and can be biased by the scores. (This child is bright; this child is not.) The concensus of opinion seems to be that the WISC should be used as a diagnostic instrument and should be used only in special instances.

The achievement test given each year in Lexington until 1974 was the Iowa Test of Basic Skills. These are paper and pencil, timed tests administered to groups of children. There are eleven subtests, which are combined into five areas: Vocabulary, 17 minutes; Reading Comprehension, 55 minutes; Language Skills, 67 minutes; Work-Study Skills, 80 minutes; Arithmetic Skills, 60 minutes. A composite score representing overall achievement is also generated. National norms are available for all tests and subtests.

The use of Achievement Tests is also questionable. Presumably the goal is to evaluate how a child is doing as compared with others in his or her class, town and the national norm. They are diametrically opposite to the way that good teachers teach. Usually Achievement Tests are given in October and take one to two weeks to administer. This is enormously disruptive and often requires that the teacher take another two weeks to reestablish her/his style of teaching in the classroom. The instructions are to push on and on and on regardless of tears, frustration and threat. Questions are often ambiguous. For example: In this case the child is asked to find the word most consistent with those at the top.

big great huge

rich, heavy, tiny, many, large

Since these tests are computer corrected the answer, in many cases, is to be checked in a tiny oval . If the child misses, the computer does not search for the mark. Many tests were created prior to the impact of television. No one knows the results of the impact of television, but we do know that a child comes to school with a very different set of knowledge than in the years prior to its advent. Some children love to take tests, some hate to. Possibly the major thing evaluated is the student's ability to function under stress.

With all of these weaknesses one could well ask why IQ and Achievement Tests are used. Achievement information is used for a large variety of seemingly vital functions. It is used as a basis for selecting students for college, major areas of study, graduate school honors, scholarships, post-school employment, etc. Some kind of information regarding a student's academic performance relative to other students is needed in the educational system as it now functions. Consequently standardized achievement and ability tests will continue to be used. But the committee feels that their use in connection with elementary school education in Lexington should be reduced.

At the present time, the California Test of Basic Skills (which was adopted in place of the Iowa Test of Basic Skills) is given every year in Lexington, from grade two through grade eight. This seems excessive. The committee feels that every other year (grades 3, 5 and 7) would be sufficient now. If the curricular efforts which the committee has recommended move ahead, use might be restricted even further in the future.

This seems an appropriate point at which to mention one other use which is often made of standardized achievement tests. In many communities (and even some state school systems) average achievement test scores by grade and by individual school are published regularly in the newspaper. The purpose of this is to allow the citizenry to "keep a watchful eye" on the schools. There are many drawbacks to such a practice, most of which are evident. The principal drawback is that pressure is put on the teacher directly to coach his or her student to make high marks on examinations which have fixed questions (not changing from year to year); and, if student performance on the exams becomes a prime criterion by which the teacher is to be evaluated, a situation is created which would strain anyone's integrity. But, the idea of using achievement test scores as some sort of measure of how well the schools are doing is not completely absurd. Still, the committee feels that regular publication of achievement test data in Lexington would not serve any useful purpose.

The committee is convinced, from all its investigations, that mastery of basic knowledge, concepts and skills by all students must be a high priority goal of education in our Town and that better means of informing parents of student progress in such areas need to be found. A method for achieving these objectives more fruitful than publishing test scores and thus putting erratic pressures on the schools, would be to press ahead with the town-wide curricular development which the committee has recommended and to couple it with greater emphasis on mastery learning and criterion-referenced testing.

Many educators in recent years are committed to expressing educational achievement in terms of behavioral objectives and criterion-referenced evaluations. They feel that the purpose of education is not to determine who learns more and less of a given subject, but rather to see to it that all students learn what is considered necessary. Kibler et al (1970) says that "each student in a given class can be expected to master successfully the behavior specified in an objective." This idea may seem startling. However, such outstanding psychologists as Bloom (1968) and Carroll (1963) have argued that most students can achieve mastery if they will (and are permitted to) devote enough time to learning the task. Behavioral objectives are statements which describe what students will be able to do after completing a prescribed unit of instruction. There are number of advantages to using behavioral objectives:

- Recent research has demonstrated that when students are given a list of specific objectives for a course they tend to perform better on examinations. It stands to reason that if students know what is expected of them they will expend their energy studying important material.
- They help administrators to insure that content and subject matter are covered adequately and that there are minimal overlaps between courses. They promote consistency and a thread of continuity through the years.
- They help teachers to determine the most significant aspect of the subject matter to be learned and to aid in establishing criteria for the measurement of achievement.
- They help the schoolboard by presenting the members with a concrete representation of the educational program.
- When given Behavioral Objectives the parents may also study them and determine what is expected of their child during the coming year. Behavioral objectives lead quite naturally into criterion-referenced testing in which mastery of the subject is evaluated. The general model is

Instructional Objectives	Pre- Assessment	Instructional Procedures	Evaluation
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IV E. Educational Process

In any social organization, relationships between the constituent groups in the organization play an important role in determining its success. One reason for this is rather simple: How people "feel"

about others with whom they work or deal affects what they do and how well they do it. It is perhaps more important to note that the pattern of human relationships in an organization influences heavily the character of the organization and thus helps to shape or mold its individual members.

These observations have special significance for a school, since -- unlike most other organizations -- a school exists for the express purpose of playing a role in the development (i.e. the shaping) of most of its members.

From the beginning of its work, the committee has been conscious of this and has sought to determine the state of health of the relationships between various groups involved in the elementary schools, how this varies from school to school, and how it may be affecting the quality of education children are receiving.

IV E. 1. Staff Morale

At present, staff morale within most elementary schools is good. Responses from the teachers' survey indicate that 68% of the staff believes good morale "fosters the educational process in 'their' school." Our observations in the schools certainly reinforce this assessment; teachers share with each other, support each other and overall enjoy very positive relationships which contribute substantially to a healthy learning climate inside the elementary schools.

Only one problem is town-wide in scope: the concern of teaching staff about School Committee relations and support.¹ It has created a widespread feeling of uncertainty among staff and contributed to a systemwide erosion of morale. A recent study of management, conducted for the School Committee by a team from Arthur D. Little, Inc., concluded that there is a serious morale problem among teachers and that its causes are to be found in staff dissatisfaction with the central administration of the school system.² The committee disagrees with the premise about the cause of morale erosion and the level of dissatisfaction with the central administration. The feeling staff reiterated is regret that "administrators have so much responsibility for so many areas that they do not have time to visit, observe and keep in contact with teachers and schools." The role of the former assistant superintendent for elementary schools provided liaison with policy makers and this is sorely missed.

The committee found many teachers and administrators perplexed and uneasy: perplexed by the suspicions and dissatisfaction of parents and by their increasing demand for accountability. Uneasy

¹ In the committee's staff survey, 59% of teachers said that School Committee/staff relationships hinder the educational process in their school. On an open-ended question asking them to describe weaknesses of the school system, 54% of teachers cited the School Committee. See Appendix A.

² Opportunities for Improving School System Management, Charles C. Halbower, Project Director, Arthur D. Little, Inc., Cambridge, 1975.

because they feel little support from central office administrators and School Committee in what is a difficult, transient period. The disease and instability has generated the lowest system-wide morale in years. The decline has many sources in addition to those already mentioned above:

- Teachers feel their professional standing is under attack by dissatisfied citizens and School Committee members;
- Parents expectations of what schools and teachers can do is unrealistic when teachers are inundated with clerical duties, paperwork, the extra time required by 622 and the exigencies of Chapter 766, as well as demands for "more" from the town;
- The over-riding concern to save money without apparent concern for educational quality, the suspension of merit awards for teachers, what appear to be arbitrary cuts of specialists, summer workshops, etc.;
- The school closing questions and its effect on schools which might be closed as well as schools concerned about absorbing additional students;
- The absence of clearly articulated educational priorities from the School Committee and administrators, as distinguished from fiscal policies.

Many parents feel the schools have declined in recent years and that they pay high taxes for an excellent educational system but get only a good education for their children. If mutual trust is to be restored, teachers and parents must appreciate more fully the satisfactions and dissatisfactions both feel about what should and what does happen in the schools.

It also seems important that something be done to improve School Committee/staff relations, and it appears to the committee that it is up to the School Committee and the new Superintendent to take the initiative. In fact, the committee recommends that two initiatives be taken. First, an attempt to clarify for the staff the basic directions in educational development which will be followed in the next few years. Second, the improvement of channels of communication between the staff and the School Committee. Serious consideration should be given to instituting some regular meetings between the staff of each school and (some) members of the School Committee, preferably meetings within the school which do not take place at the time of pending budget decisions.

IV E. 2. Students' Perceptions

There were several questions on the committee's elementary student summary which dealt with individual or group relationships and attitudes. The students (72% of them) felt that their parents were very interested in what happens in their school, and this was uniform over the schools. When asked whether school is fun, 39% said it was often fun. This percentage was higher (48%) for students in small schools.

The comments which students volunteered on open-ended questions show that they regard some aspects of human relations as an important part of school. In response to the question "What do you like best about your school?", the students mentioned a broad range of things: specific subjects, recess, the building, gym, special activities, etc. But, in spite of the open-ended nature of the questions, approximately 32% of the students mentioned some form of adult relations and about 11% mentioned relations with other students. When asked what they like least about their school, about 11% mentioned adults (teachers, aides, principals, etc.) while approximately 5% mentioned fellow students. When asked what they would change about their schools, about 15% mentioned adults while 4% mentioned peers.

These percentages varied considerably from school to school (see Table VI) and there does seem to be a pattern which indicates that, in the students' eyes, their relationships with adults and peers are more rewarding in Hancock, Munroe and Parker than in the other eight schools.

TABLE VI
Elementary Student Views
on
Adult and Peer Relations
(% of students at each school citing
in response to three questions)

		Liked Best		Liked Least		Would Change	
		Adult Relations	Peers	Teachers Admin.	Peers	Teachers Admin.	Peers
small	[Hancock	51	32	2	3	3	3
	[Munroe	47	29	3	3	4	0
	[Parker	43	15	4	4	5	0
medium	[Adams	32	2	12	1	13	3
	[Estabrook	35	10	12	7	5	3
	[Fiske	31	7	18	7	11	3
	[Franklin	26	13	6	6	4	1
	[Harrington	28	5	14	8	17	4
large	[Hastings	25	17	7	3	11	3
	[Bowman	35	8	16	6	21	6
	[Bridge	12	8	13	5	20	2

IV E. 3. Committee Observations

The pattern observed in student responses was repeated in the reports of the committee's interviewing teams: With a few exceptions, relationships between teachers, principals and parents in our elementary schools are in good health and the atmospheres of the schools are alive and exciting; yet, there are three schools in which the atmospheres and relationships have a warmth and vitality which simply places them on another level. These schools are Hancock, Munroe and Parker. The intimacy, involvements, cooperation, mutual support and unity in these schools are remarkable. Two questions about this phenomenon have been important for the committee's work.

What is it about (most of) Lexington's elementary schools that promotes good human relationships, and what are the special circumstances at three of the schools which place the quality of the relationships on another level?

Should the generally high quality of human relationships in our schools be viewed as one of the strengths of the Town's educational program?

Out of the many factors which influence patterns of human interaction in important ways, four seem to the committee to be important for Lexington schools in general: quality and dedication of teaching staff,¹ size,² location, principal. Two physical characteristics of the three schools which have been identified are the things which distinguish them from the other eight schools. The committee is convinced that it is these things which further enhance human relationships in them. Each has a small student population (under 275) and is a neighborhood school. (This is to a certain extent corroborated by the committee's assessment that the quality of human relationships at Adams is not too far behind those at Hancock, Munroe and Parker.³) School size will be discussed further in the next section. Here, it will suffice to say that a student population of, say, 250 or less makes for a school its members can "know", that is, a school in which almost everyone knows almost everyone. This is reinforced by the neighborhood quality of a school, which also contributes to a sense of belonging and increased parental involvement of a constructive nature.

But, does all this affect the quality of education? The committee's work discovered no significant difference between schools in terms of student performance on tests of basic skills. For reasons

¹ As has been pointed out, these are heavily influenced by the organizational plan, which allows the schools to be semi-autonomous.

² By the standards of many school systems, the present student population of Lexington elementary schools are not large.

³ Adams draws from two districts but definitely has the spirit of a neighborhood school. Its student population is larger (343).

explained in section IIC4, the analysis was inconclusive as far as small schools are concerned. But, even if it had been, our answer to the lead question of this paragraph, could not stop there. For, what is education? A better way to put the education question is: For which parts of it are schools responsible, in whole or in part? Instruction in basic knowledge and skills, surely. What else? On the committee's citizen questionnaire, parents of elementary school children rated in importance seven aspects of education.¹ Two of the seven were, "human relationships" and "building confidence". Each of these was rated important or very important by at least 84% of parents (92% of those who rated the items.) It is evident that parents expect the schools to contribute to the education of their children in ways which go beyond instruction in basic skills and knowledge and, therefore, that the quality of the human relationships in a school is an important criterion by which the strengths and weaknesses of the educational program must be judged.

The committee concludes that the quality of the human relationships in the elementary schools in general, and at three schools in particular, is one of the strengths of the educational program in Lexington.

IV F. Physical Facilities and School Size

We come now to a discussion of physical characteristics of schools and their effects on education. Does the size of a school affect the type or quality of education a student receives? How important are various physical facilities in providing education of high quality? With such questions in mind, the committee has sought the views of many people on facilities and size and has made some investigations of its own. The discussion begins with a summary of the data and opinions from several sources then extracts a few key things from the tangle of inputs and presents the conclusions which the committee has reached.

IV F. 1. Summary of Attitudes

Teachers and administrators were asked the same questions on physical facilities and school size.² The topic was approached

¹ All seven had been identified by teachers as important.

² From the school-wide survey of 450 teachers and administrators, the following groups were formed and examined:

- 116 elementary teachers; 21 from large schools, 65 from medium sized (350-500), 16 from small (200-350), and 14 from very small schools
- 110 junior high teachers (Their opinions on optimal elementary school size are noted in this section.)
- 30 administrators; 12 elementary, 4 junior high, 5 senior high, 5 with grades 7-12 responsibility, and 4 with grades K-12 responsibility. 51% were in schools over 500, 38% in schools 350-500, 11% in schools 200-350, and 3% in schools of less than 200. See Appendix A.

more indirectly with the elementary school students, but many spoke directly about the facilities at their school. Citizens were asked in the Citizens Survey to place facilities, equipment, and materials in a list of priorities.¹

One Citizens Survey question combined the two topics of facilities and school size in its concern about "diversity" or "equality".

- 34% preferred diversity in facilities and size,
- 50% thought it did not matter, while
- 8% wanted equality of facilities and size
- 8% had no opinion or did not answer.

School Size

Administrators and teachers judged the optimum size for an elementary school to be between 200 and 500.

	Size	Elem. Teach.	Jr. H. Teach.	Admin.
Medium	(350-500)	34%	35%	34%
Small	(200-350)	42%	37%	37%
Very Small	(under 200)	6%	12%	

There seems to be a slight preference for the small school of the 200-350 size. When the elementary teacher responses were broken down by the size of their own school, 64% of the teachers in the very small and 75% of the teachers in the small schools voted for the 200-350 along with 31% of those in medium-sized and 38% of those in large schools. 15% of all elementary teachers stated that school size made no difference.

On open-ended questions, 12% stated the small school is a definite strength in its promotion of (1) close association among children, teachers, and parents, (2) pride in the school, (3) neighborhood spirit, and (4) personal warmth and a friendly atmosphere. About weaknesses in their own school, 21% noted the lack of space for tutoring, library, music, physical education, and storage; hence the lack of space is limiting.

1797 students from grades 4, 5 and 6 at all eleven elementary schools who responded designated their own school size on the multiple-choice section. 19% thought they were in small schools, 47% in large, and 30% had attended both large and small. When asked if the size of the school mattered:

- 34% of all students said a lot or some
- 62% said not much or not at all.

Students across the system responded in the same pattern.

¹ See Appendix B for the complete summary of citizen responses.

When asked if the age of the school mattered:

- 46% of all students said it mattered a lot or some
- 50% said it mattered not much or not at all.

Students in the large schools were much more emphatic about the age of the school they attend. 22% said age mattered "a lot" (only 8% had cared "a lot" about size) whereas only 12% in small schools cared a lot. 30% in large schools cared "some" while 24% in the small schools agreed. The students in the large schools that are the newest ones seem to want to stay in new schools.

4th, 5th and 6th graders at all elementary schools were also asked to "write the way you feel about old, new, small, and large schools if you can." The responses were varied: some imaginative, some pithy, some confused by the terms (many considered a "new" school a different one), and many unsure of whether they were in a large school or a new one. Many stated their values clearly:

It's small so you get to know your teachers well and you are not just numbers on a file like in a big school.

I am happy at this old small school, but I would like to go to a new big school.

I don't care about large, small, old, new. It's what you learn in them and if you are happy in the school.

I like a medium sized school like Bowman.

I would like to go to a big, new school but with the same kids.

Except for the Munroe and Hancock students, the expressed preferences were for new especially and large. As one student (not from Hancock or Munroe) phrased it:

Old schools are good for monuments and tourists but some of them aren't good for learning in.

Another voiced a common student concern for "clean and bright" and a desire for a little more experience and independence:

Old schools are alright but newer ones are cleaner and brighter.

I don't like small schools. Large schools are bigger, opener, much better.

It's new, challenging, and pretty exciting.

Physical Facilities, Equipment, and Materials

Teachers, administrators, students, parents, and citizens have all expressed their views and weighted the value of facilities.

Elementary school teachers and administrators definitely thought physical facilities affect the educational program:

	<u>Elem.Teach.</u>	<u>Admin.</u>
a great deal	40%	43%
moderately	47%	51%
not necessarily at all	13%	

71% of the teachers in the large (new) schools said "a great deal, and 57% of the teachers in the very small schools said "moderately".

Renovations as suggested in the Ad Hoc Survey done in 1974 at each school were thought to be the building-modification plan that would best serve the educational program.

The choices were:

	<u>Elem. Teachers</u>	<u>All Teachers</u>	<u>Admin.</u>
Renovating as specified by parents & teachers in Ad Hoc Survey	42%	37%	37%
Following School Facilities Study	17%	16%	29%
Closing older schools when students can readily fit in another	15%	17%	
Renovating older schools	21%	17%	
Keeping schools as they are	5%	6%	

Renovations in their school would allow greater program variety said (44%) of elementary teachers and (47%) of administrators. 24% of the elementary teachers thought renovations would make little difference. Most of this 24% came from either the very small schools or the large schools. Administrators (21%) said renovations could better accommodate teaching styles, but only 10% of the elementary teachers agreed.

Newer schools do provide "many and some" educational advantages not found in older schools according to elementary teachers (81%) and administrators (83%). (71% of the teachers in the very small schools agree as do 94% of the teachers in small schools).

Older schools also have advantages:

	<u>Elem. Teachers</u>	<u>Admin.</u>
Some or many	62%	60%
No advantages	19%	31%

(20% of teachers at the large elementary schools did not answer.)

Classroom space was judged (63%) to be excellent or (74%) satisfactory by elementary teachers and administrators. 35% of all elementary teachers thought it needed improvement. 64% of teachers at the small schools felt classroom space and auxiliary space (79%) needed improvement.

66% of elementary teachers and 59% of administrators declared auxiliary space needs improvement.

Physical education facilities were rated excellent or satisfactory by elementary teachers (65%) and administrators (56%). 30% of the elementary teachers feel the need of improvement. At the very small and small schools, 67% and 64% respectively feel physical education facilities need improvement.

The students are very clear about the value they place on the gym and playground. Except for Hancock and Munroe, 10 to 32% of the students mentioned the gym as one of the things they liked best about their school. Poor gyms and playgrounds showed up in the responses from Hancock, Munroe, Adams, and Parker as "things they liked least about their schools, and things they would change. Students at Bowman, Parker and Hancock would like to change their playground. Good playgrounds at Fiske, Franklin, and Munroe were noted by the students.

Parents are also aware of good playgrounds. Bowman parents spoke very strongly also about the need for a better playground. Most of the good playgrounds came from several years planning by PTA's and the gym teacher and hard labor from parents and teachers. Two students from small (old) schools said it:

Make the gym bigger. Otherwise my school is super.

Make a pissa gym and fix the playground.

Libraries need improvement in all schools except the new (large) ones.

	<u>Elem. Teachers</u>	<u>Admin.</u>
excellent	13%	} 45%
satisfactory	41%	
needs improvement	44%	41%

Of the elementary teachers, 47% at very small, 57% at small, and 50% at medium schools thought the libraries needed improvement...only 14% at the large (new) schools.

Students at Hastings, Fiske, Estabrook, Bridge, and Bowman listed the library as one of the things they liked best about their school. Estabrook students also commented on the equipment, books, films, etc. Many at Hancock spoke of the poor library.

Superior facilities, equipment, and materials were placed last by citizens' seven priorities. Yet 69% of the citizens thought them important or very important. As one looks at the breakdown by age groups, it is interesting to note the downward trend in importance of facilities as age increases. 79% of those aged 25-39 thought them important or very important, 65% of those 40-60, but only 41% of those over 60. (It is probable that the importance for elementary students would exceed 79%).

Students were also very definite about other facilities, e.g. clean bathrooms with doors for privacy, less noisy lunchrooms (especially at medium and large schools), and clean, colorful walls and rooms. Many teachers also spoke of dreary corridors, lack of tutoring space, and the need for more electrical outlets and sinks in classrooms.

No consistent pattern seems to be present in the figures on whether teachers and administrators think the physical facilities hinder or foster the educational process. Roughly 27% think they hinder, 41% foster the educational process, and 26% of the elementary teachers and administrators think it has little effect. The percentages by school size vary greatly:

	<u>Elementary Teachers</u>			
	Very Small	Small	Medium	Large
hinder	7%	20%	25%	24%
foster	21%	25%	43%	19%
has little effect	64%	19%	22%	10%
did not answer				47%

Most schools in Lexington were built as self-contained classroom schools (especially those in the small category where 50% feel the facilities hinder the educational process) many years ago.

In the last 20 years, schools and teachers have often wanted to present their program in a different framework or with a change of emphasis; if the facilities are not there it is much harder to overcome their lacks or work against the building. Children no longer sit quietly at desks and work almost exclusively with paper and pencil; they learn by doing. This has caused an acoustical "overload" in some older buildings. A poor library, for example, certainly hinders the educational process for a teacher encouraging independent research and many reports. Poor facilities or the lack of them limit the number of ways in which a teacher can present a concept. As one teacher said:

Mechanical and physical facilities ease the process somewhat; space and flexibility allow for more diverse programs and teaching formats.

Another put it all in perspective:

Leadership is most important; it can make a success of an old school, or a disaster of a new one.

IV F. 2. Conclusions about Facilities

There is considerable diversity in the physical facilities of the eleven elementary schools. This is hardly surprising, since Hancock opened in 1891, four schools opened in the period 1904-1931, four in the period 1949-1961 and two in 1966-67. What the committee did find surprising is that, even during the period of expanding enrollments, so little seems to have been done in the way of renovations in the pre-World War II schools. As a result, when asked in conjunction with the recent School Facilities Study what their physical needs were, staff in the older schools developed rather extensive lists: gyms, auditoria and auxiliary space of various sorts were lacking in some of the older schools; libraries and rest-rooms were in need of expansion or improvement. The committee's inquiries into these matters, many of which are reflected in the summary of the previous section, revealed three interesting patterns.

First, the intensity with which the need for these facilities is felt has varied, depending on the time at which the questions were asked and the context in which they were placed. When information was solicited for the Facilities Study, improvement of education was assuredly understood to be the basis for response, but the context was more or less "what would you like to have if you could have it". When the threat of school closings was in the air (and the committee's staff survey was taken) deficiencies in facilities in older schools were being weighed against the educational merits of the schools, and although teachers still felt facilities to be important, a "we'll make do" attitude had set in. By the time of the committee's in-school interviews last fall, fewer teachers cited physical facilities

as weaknesses of their schools and many of those who did focused on items such as inadequate library space or poor acoustics in classrooms, which were more clearly of direct relevance to education than some which had been mentioned earlier. Furthermore, major facility concerns were almost as prevalent at newer schools as at older ones.

The second interesting pattern is that, even after an allowance is made for defensive responses in schools which might be closed, it appears that teachers in the newer schools attach more importance to facilities (and equipment) than do teachers in the older schools. This is a common pattern with people, one which the committee members decided was best described by Helen Grush's grandmother, who used to say, "One want supplied makes room for another."

The third pattern is especially interesting to the committee, because it is quite similar to teacher response to the lack of basic teaching materials which was discussed in section IIIB. The staff of each school has been very creative at adapting to what is available and, in many cases, turning apparent defects into assets. At Fiske School, part of the science program takes place in a corridor lobby. At Hancock, the principal and a few volunteers cleared the top floor over the summer and thus made it function as a gym. At Adams, it is amazing what has been done with closets and in place of closets. All across the system, rooms and corridors are used in imaginative ways. The committee has been impressed at what people who are dedicated to teaching can do and at what they can do without.

And yet, there do remain some problems with physical facilities which will need attention. The committee has not made a systematic study of facilities. It has noted that there are a number of physical problems which are detrimental to the educational process and small enough to be attended to without great cost, e.g., the acoustic problems in the old wing at Franklin. Where small quantitative space needs are involved, e.g., library space, declining enrollments should help. Surely, a modest plan of renovation over several years could complete the correction of these things. The committee would like to point out that, based upon its interviews in the schools, it appears that development of such a "modest" plan will require going back to the schools (or the Ad Hoc reports prepared at the schools) to identify needs which fall into the "small but serious" category.¹

What about more large-scale differences in facilities? From the point of view of education, is it important to try to iron out such

¹ There is a strong feeling in the schools that their inputs were not properly taken into account in the School Facilities Study.

differences, i.e., to "equalize" facilities in the schools?¹

The committee's major conclusion about physical facilities is the following. The two major responsibilities of the schools are (i) to instruct students in the knowledge, skills and concepts basic to functioning as an adult in the society, (ii) to provide an environment and an educational process which promote good human relationships and enhance the development of such attributes as self-confidence, empathy, etc.² Proper facilities are necessary for carrying out both of these responsibilities. The committee's work indicates clearly that, in the context of Lexington today, facilities should not be a primary educational issue because: (i) the (newer) schools with the most adequate facilities are no more effective at teaching "basics" than other schools (section IVD); (ii) the best educational environments and relationships are at the three schools with facilities which are deemed least adequate (section IVE).

IV F. 3. Equipment and Materials

The committee found the lack of materials, supplies and small equipment in some schools rather appalling for a town that prides itself on the quality of its school system. Teachers without maps or globes, without up-to-date textbooks, with duplication processes that produce virtually unreadable copies of worksheets they depend on -- these are things which almost have to be seen to be believed. The committee has made no study as to why these situations exist. But some schools have bountiful materials and supplies while others have to skimp on things that are vital to the educational process. Part of the explanation may lie in the policy of allocating resources for materials and supplies on a dollars-per-student basis, which gives smaller schools much less flexibility than larger ones. Part may be due to past principals, who were less assertive. In any event, the committee feels strongly that this situation should be remedied as soon as possible.

IV F. 4. Conclusions about School Size^{3,4}

Two of the committee's conclusions about the effects of school size on education have been presented in sections IVD and IVE:

- There is no significant difference between the performance on achievement tests of students in large (500-700) and medium-sized (300-500) schools.

¹ This was the rationale behind the School Facilities Study.

² More will be said about these two responsibilities in the next chapter.

³ The term "school size" is being used here as shorthand for "the size of the student population in the school." Of course, the size of the physical plant usually is correlated with this, but the number of students is the principal thing being discussed here.

⁴ As this report was being written, the committee became aware of a 1973

- Human relationships are significantly better in small schools (under 250 pupils) than in large or medium-sized schools.

Three comments must be made here. First, the committee's analysis also showed no significant difference in performance for students in small schools versus those in medium and large ones; however, the sample size for small schools and the bias created by AP students being absent from the sample for these schools did not allow firm conclusions to be drawn. Second, the study leading to the first conclusion was based on data from the period 1968-73. At present, no Lexington elementary school has as many as 500 students. Bridge and Bowman now have 455 and 481 pupils respectively, whereas they were over 500 during 1968-73 (Bowman had 700 pupils at one stage.) Third, the student populations in our schools have been changing. Most, but not all, are going down. This is one of several reasons that the demarcation numbers 250,300,500, must be interpreted flexibly.

What does school size affect? It seems convenient to organize the rest of the discussion around the advantages and disadvantages of smallness of school population.

Advantages of Smallness

School size affects the pattern of human relationships in the school.¹ When the student population is under 250 or so, the principal knows almost all children by name, the children can know most teachers, not just those who teach them, most of the teachers know most of the students, and parents who are at all active in the school know all the teachers. When the student population approaches 200, it is almost literally true that everyone knows everyone, and they support and help each other. The sense of community that everyone is bemoaning the loss of these days is present in these small schools.²

The pattern which the committee sees is this. As the population in the school increases, some of the relationships begin to weaken. This is especially true for the student. The size eventually exceeds that of a group he or she can "know". The student thus has been robbed of a little bit of his or her humanness because of not feeling part of an integrated community. Obviously, there is no student population size which clearly marks the point of transition, but one can see that by the time the student population passes some point in the 350-400 range the student's ability to "know" the school

study of the 200,000 pupil school system of Montgomery County, Maryland, which reached educational conclusions very similar to those we are about to describe. As of this writing, the committee has not seen the report, but has the abstract located by a computer search of the literature on school size.

¹ This includes relationships with the parent group.

² There is a tacit assumption here that a school with 200-250 is a neighborhood school. If children were bused around town to such schools the size would still help but part of the sense of community would be lost.

is gone. For her or for him, the school as a body of people is much less "manageable", and the student's natural tendency is to identify with a smaller group, e.g., the class, the home room. If the school utilizes self-contained classrooms, or team teaching, or any physical organization which creates "wings" or "mini-schools", this partially compensates for the loss of community -- but it is not the same.

When the student population passes 500 or so, the phenomenon is more pronounced, and some new effects set in. First, the parent group becomes more remote from the school, especially if children are drawn from many "neighborhoods" (as is usually the case for a school of this size).¹ Second, the school requires additional internal organization, i.e., a vice-principal, more formal coordinating committees, supra-team structure, schools within a school, or some combination of these. The school is a more complex place. The principal has responsibility for more, knows fewer children, is farther removed from the delivery end of the educational process. Unless great care is taken, factionalism in the teaching staff develops, because people are busier and less personally involved. It's a different kind of a place in which to go to school.

The committee is reasonably certain that other changes of some significance occur when the school size reaches 700 or more, but did not have any schools of that size to look at. The local indicator of this is that, according to staff members, Bowman (with 481 students) is a very different and far healthier place today than it was when it had 700 students, even allowing for (1) a new principal sensitive to human relationships and (2) physical facilities which are no longer overburdened.

The committee's conclusion is that, in Lexington, three approximate school sizes are important: 250 pupils or less, 250-500 pupils, over 500 pupils, and a fourth is probably important (over 700 pupils). None of them appears to affect significantly what students learn about "basic skills", but each time school size increases a level, a sacrifice is made in terms of the quality of the human relationships students experience.

Disadvantages of Smallness²

The principal disadvantage of a small school is that it can offer only a limited number of educational options. If the school is small enough to have only one teacher per grade, parents have nowhere to turn if they feel a given teacher or teaching style is not well

¹ At least in Lexington.

² Here, it is important to remember that "smallness" refers to the number of students. Lexington's smaller schools are also older and thus have less modern facilities. Facility questions were discussed in the previous section.

matched with their child's needs.¹ The committee did not find this to be a serious problem now in Lexington, largely because administrators are very aware of this and have been flexible wherever possible, even to the extent of redesigning class structure to accommodate. The other disadvantage of smallness is lack of staffing flexibility especially for dealing with special needs children. Again, the committee did not find this to be a serious problem.

Parents at Munroe did express some concern with the handling of special needs, but so did those at Harrington, Bridge and Estabrook. Overall, the smaller schools seem to be dealing with special needs children at least as well as the larger schools.

¹ This (potential) problem is not restricted to small schools. The committee found evidence that, for a variety of reasons, some larger schools are not particularly flexible in responding to such situations. The difference is one of degree, which is sharply identified with only one teacher per grade.

WHERE DO WE GO FROM HERE?

The final task given to the committee was "to define an educational program which best represents community priorities." Throughout this report, the committee has described parameters for such a program, but several aspects have yet to be discussed: (i) the purposes (basic goals) of the schools and the relative priorities they should be given; (ii) the school closings issue, and finally the fundamental issue (iii) what citizens, parents, teachers, the School Administration and the School Committee might do to get us back on the path to excellence in education.

V A. Purposes

All across the country, a move by the citizenry to trim public education back to teaching "the basics" is gaining momentum. Educators are deeply troubled by this swing in public attitudes, partly because they feel it is unfair for the public, which has expected and demanded so many things from schools in recent years, to abruptly focus on achievement in basic skills as the sole criterion for whether schools are performing well, and partly because it conflicts sharply with their views of what education should be. It is interesting to note in passing that this swing is completely in keeping with the historical pattern in this country, where periodically the public demands heavy emphasis on "enrichment and experimentation", followed by a "back to basics" retrenchment. The state of the economy has been a fundamental force in these reversals, as it undoubtedly is at present. One thing which seems to distinguish the current cycle, however, is that the level of emphasis and expectation in the area of "human development" has reached an all-time high. If therefore, public concern with the basics continues to grow, there is likely to be a very heated debate over the purposes of the schools, the reasons for which they exist.

The committee sees no sign that a groundswell is developing in Lexington to tell the schools to stick exclusively to the basics, though there is serious citizen concern over student performance in such areas. The committee shares this concern and has made recommendations aimed at helping teachers continue to improve basic education in our Town. We do feel there is trouble just ahead unless we take time to reflect on what we have been expecting of our schools, how we may have to modify those expectations, and how the schools may need to modify their conceptions of what they can realistically accomplish

The current Lexington Public Schools' statement of goals contains a sentence which describes what the schools are trying to do at present:

To provide a curriculum based on explicit instruction in subject areas, learning skills, and the skills of communication, as well as implicit instruction in social relations, behavior, mental and physical health and citizenship.

The sentence makes clear something most of us are aware of, namely that the schools now have two purposes, explicit instruction in knowledge and skills and "implicit instruction" in human development (behavior, relations, emotional development, and a few values). The second purpose needs to be examined in the light of what the committee learned during the past year. What should parents reasonably expect schools to do with "implicit instruction" in these areas? What can (or should) schools attempt to do with them?

Two general answers resulted from our study: Parents expect too much of schools and teachers in the area of human behavior and development; and schools should be more realistic about what they can do. A reordering of priorities for school staff and the system is clearly indicated in the data gathered. We should expect that school atmospheres as well as the way schools are organized and subjects are taught will reinforce certain human qualities, attitudes and behavior. But we need to move farther away from the idea that teachers "instruct" children in such matters and closer to the idea that this part of a child's development is primarily the responsibility of parents.

From the evidence the committee has gathered, the schools are doing a very creditable job now. If we can (i) agree on the (ideas behind) these statements of purpose, (ii) set priorities, (iii) clearly define specific educational objectives and (iv) give teachers what they need in order to work toward those objectives, education in Lexington may avoid an extreme swing of the pendulum (which could be very damaging) and draw nearer the basic goals:

- provide instruction for each child in the knowledge, skills and concepts basic to functioning as an adult in the society;
- provide an environment and an educational process which promote good human relationships and enhance the development of qualities which are important for mental and physical wellbeing.

V B. Priorities

Teachers, citizens and students in Lexington agree that the first purpose listed above is the primary one. They also agree that

the single most important ingredient schools must have to carry out their responsibilities and begin to meet that objective is high quality teachers. In the Citizen Survey 2000 citizens rated educational priorities. The seven items they were asked to rate in importance were based on the choices 450 teachers had listed as the three most important goals for our schools. Citizen and teacher ratings are given in Table VII.

Three substantial differences between the two lists should be noted. First, facilities, equipment and materials are more important to teachers than to citizens in general. Second, teachers rate basic skills sixth, and citizens rate them second. Third, citizens rate varied programs and diverse teaching styles sixth, while teachers give it third place. Committee interviews in schools indicated that one reason "sound basis in basic skills" is sixth in the teachers ordering is that many teachers took this goal as a given and chose items they felt might be overlooked. But there was no doubt that teachers and citizens agree on what the primary purpose of the schools is. The different ratings given facilities, equipment and materials may be due in part to the fact that citizens tend to take these as given.

Teacher response to diverse programs and teaching styles reflects the fact that it has been the conscious aim of the system for many years "to individualize instruction to best meet the needs of each child". Parent response presumably indicates some concern that we may have lost sight of what the instruction is for, be it individualized or not. But the differences need not be competitive if the schools and community can agree about where we are going and how we plan to get there.

Similarities must be mentioned also - Citizens rated every priority identified by teachers as being important, but some things were rated more important than others: quality teaching staff and sound basis in basic skills are very important, while physical facilities are only "important". The consistent pattern of responses in Table VII denotes very clearly what priorities should guide our future educational program: high quality teachers should stress basic skills and provide excellent career or college preparation first, then perform competently in the other areas.

V C. The School Closings Issue

Proposals to close some of the eleven Lexington elementary schools have been stimulated by three concerns. The first concern is financial -- the desire to run the school system as economically as possible and, more specifically, to reduce administrative and plant maintenance costs. The second is the desire to provide more and better physical facilities for students (and teachers) who are now in the older schools. The third is the desire to equalize the physical facilities in the (remaining) schools and thus provide

TABLE VII

CITIZENS RATING OF PRIORITIES

	<u>Very</u> <u>Important</u>	<u>Important</u>	<u>Not</u> <u>Important</u>	<u>No opinion</u> <u>No response</u>
Quality teaching staff	88%	7%	0%	7%
Sound basis in basic skills	75%	15%	1%	10%
Sound preparation for careers and/or college	56%	32%	2%	10%
Building confidence & positive self-image	54%	32%	5%	9%
Learning how to get along with others; human relationships	40%	44%	7%	9%
A variety of programs and teaching styles designed for the needs and individual abilities of each student	34%	40%	15%	11%
Superior facilities, equipment and materials	13%	56%	21%	10%

FACULTY RATING OF PRIORITIES

1. Quality teaching staff
2. Superior facilities, equipment, materials
3. Variety of programs aimed at individual needs
4. Sound preparation for career/college
5. Building confidence and positive self-image
6. Sound basis in basic skills
7. Learning to get along with others, etc.

"equality of educational opportunity" for Lexington's students. The immediate motivation for an increased concern with these things has been the fact that enrollments have been declining, so that we may not need all of the physical space or all of the staff we now have.

The committee has consistently borne in mind that these are difficult financial times for all of us and, therefore, that any recommendations made must be financially realistic. As a result of its work, the committee reached two general conclusions about costs: (i) we must get our educational priorities straight before general financial considerations can be reviewed in proper perspective and before we can see what to do in the face of declining enrollments; (ii) there does not seem to be an abnormally high level of concern among the citizenry about school costs.¹

The committee looked hard at the question of the importance of physical facilities to education and presented major conclusions in section IVF: there is no evidence that the quality of student education would be improved by closing one of the older schools and transferring its pupils to one of the newer schools. On the contrary we have found just the opposite; because the older schools are also the smaller neighborhood schools, the students would lose something which is educationally important. This is not to say that students in older schools are oblivious to physical facilities or the need of paint or repair; students at Adams, Hancock, Munroe and Parker, the four oldest schools, mentioned facilities significantly more often as things "liked least" about their school than did students in the other seven schools.² Nor is it to say that teachers in older schools do not see the need for physical modifications and repairs. But these are of very small significance educationally.

This last point should be underscored, not by reviewing the advantages found in the older, smaller schools, but by citing the most dramatic case of older facilities versus quality of education. By almost every measure of educational effectiveness the committee reviewed, the Hancock School, opened in 1891, is the outstanding elementary school in Lexington.³ We are convinced that the circumstances which combine to make it so could not be reproduced (and have not been) in any facility which has significantly larger or located out of the neighborhood from which its children are drawn. The deliberate closing of such a school would be an act of educational folly.

¹ See Appendix B.

² Gyms and bathrooms were their main concerns. See Appendix A.

³ See Appendix A.

The committee has not investigated why maintenance and small-scale renovations have been neglected at the older schools for some time, but someone should. It appears that we have been operating for years with an unstated policy that more is better (bigger, brighter and shinier facilities). The threat of school closings has made many people - teachers, parents, students - reconsider what is important in education. We strongly recommend that the policy of neglect should be seriously re-examined in light of our findings on the educational effectiveness of large versus small schools.

To provide "equality of opportunity", the most important steps to be taken in the schools are:

- to establish specific educational objectives in major curricular areas, maintain classroom teachers of equally high quality in all the schools, provide them with the materials they need to do their jobs well and see to it that they do them;
- to provide in each school the best human environment possible.

"Equality of educational opportunity" does not mean homogeneity of physical facilities, organization or teaching formats.

The only aspect of physical facilities we have found which does bear on equality of educational opportunity, to a certain extent, is school size. The committee recommends that every reasonable effort be made to keep elementary school sizes small in Lexington. Given the present facilities, this means two things: (i) that every effort be made to keep the existing small schools open; (ii) if enrollments drop significantly in larger schools, ways should be explored to utilize parts of their physical plants for other purposes.¹

V D. Recommendations - Program and Process

The committee throughout this report has discussed the two purposes of the Lexington schools as well as system strengths and weaknesses in educational program and process, and has made specific recommendations in each area. These are summarized below.

The autonomy and diversity of our elementary schools is one of the uniquely valuable characteristics of our school system. Its preservation should be given high priority. The basic organizational scheme of the Lexington system started in the sixties, to allow school and teacher autonomy but provide town-wide frameworks, is fundamentally sound. It does encourage teacher creativity; it does allow for greater diversity in teaching styles to better meet the needs of each child; it has helped attract high quality teachers to Lexington. But it does have some problems which need attention. Educational programs need greater coordination between grades and across the system; educational objectives in each program area need to be clearly defined; teacher resources need to be more readily available. These ends can better be accomplished by:

¹ Administration offices might be one possibility.

- Creating full-time curriculum coordinators in several major areas. Having principals act as program directors is not realistic. Curriculum coordinators should develop town-wide frameworks more fully, oversee the preparation of materials for the classroom teachers, create better channels for exchanging ideas and materials among teachers, work with teachers in the implementation of new programs and continuously evaluate educational programs. Coordinators should ideally be master teachers with extensive knowledge and experience in their subject areas. They should work closely with principals and teachers and be accountable to a central office administrator.
- Establishing a Curriculum Resource Center to provide the kind of learning resources and support which would enable the classroom teacher to spend more time with children.
- Deciding if Lexington is to continue developing curriculum to any great extent. If so, sufficient funding, more teacher-released time, summer workshops and program implementation should be amply provided. If not, then a decision should be made which clarifies what new directions will be taken.
- Using the "mastery learning" approach in program areas where a large component of what is to be learned consists of skills. Mastery learning provides greater continuity in a student's education and is in keeping with current citizen priorities. It can provide clearer communication with parents and greater teacher accountability in the system. Since the approach would be used only in town-wide frameworks, ample room is left for individualized learning and individual teaching styles.
- Appointing an assistant superintendent with responsibility to
 - (i) keep in close contact with elementary staff and act as a liaison between the eleven schools and the central office;
 - (ii) be responsible for curriculum coordination and implementation;
 - (iii) ensure a sharing of resources, ideas and planning at all elementary levels;
 - (iv) work to improve staff, parent, administrative and School Committee communications;
 - (v) ensure research and development to provide continuing staff growth in educational process and practice;

- (vi) be responsible for stimulating in-service teacher training programs;
- (vii) ensure continuity between the 6th and 7th levels where interface is sorely needed.
- Implementation a systematic procedure to ensure greater accountability for students, teachers and administrators. The present arrangement is uneven and insufficient.
- Reviewing the whole question of specialists:
 - Is it more educationally sound to lower pupil-teacher ratios and provide training for classroom teachers so they can better handle challenges within the classroom?
 - Or should we assume teachers' responsibilities will be limited and continue to rely heavily on specialists to supplement many areas of learning and to deal with behavioral aspects?
- Using resources and talents within town more extensively. Sporadic and duplicating efforts have been made to do this. Lexington is a town uncommonly rich in human resources, which still remain largely untapped by the schools. One staff member should explore, coordinate, and make full use of this enrichment by channeling these resources into areas where teachers and students can enjoy them fully.

We are convinced that necessary changes can be made under strong, creative leadership by shifting resources and redirecting efforts. Resources need not be new or additional for the most part. The school budget need not increase substantially over the next few years, except to keep up with inflationary pressures. There is little sign that the citizenry is clamoring for reduction of the school budget or that they are eager to pay more for their schools.¹ They feel about the "right amount" is now being spent.

- The Superintendent should make a concerted effort to reduce personnel in areas where it can be done without increasing class size or decreasing services which directly aid the classroom teacher.
- For the next few years, where staff reductions do occur because of declining enrollments, resources should be channeled directly into curriculum coordination and implementation and the articulation of a K-12 master educational plan.

And finally, Lexington citizens, educators and students have endorsed above all else the utmost importance of hiring top quality staff. False economizing by employing lowest salary applicants to teach Lexington children will only insure long range educational deficits. As one youngster in elementary school said, "I mean, if you don't have good teachers, what's the good of going to school?"

¹See Appendix B.