A Study of the Educational Administrator's Responsibility for Facility Planning as Seen by the Public-School Superintendents and Private-School Principals in Southwestern Michigan

Gado Appollo Ongwela

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A STUDY OF THE EDUCATIONAL ADMINISTRATOR'S RESPONSIBILITY FOR FACILITY PLANNING AS SEEN BY THE PUBLIC-SCHOOL SUPERINTENDENTS AND PRIVATE-SCHOOL PRINCIPALS IN SOUTHWESTERN MICHIGAN

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A Dissertation

Presented in Partial Fulfillment

of the Requirements for the Degree

Doctor of Education

by

Gado A. Ongwela

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ABSTRACT

A STUDY OF THE EDUCATIONAL ADMINISTRATOR'S RESPONSIBILITY FOR FACILITY PLANNING AS SEEN BY THE PUBLIC-SCHOOL SUPERINTENDENTS AND PRIVATE-SCHOOL PRINCIPALS IN SOUTHWESTERN MICHIGAN

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ABSTRACT OF GRADUATE STUDENT RESEARCH

Dissertation

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Date completed: June 1980

Problem

Planning of educational facilities is recognized as the responsibility of the educational administrator (Anderson & Van Dyke, 1972; McClurkin, 1964). Much has been written about planning of educational facilities and about the role of the architect and the facility planning specialist, but the details of the educational administrator's responsibility for facility planning has not been clearly defined (Boyer, 1973).
Method

To determine the essential elements of the administrator's responsibility in planning educational facilities, an extensive review of literature was undertaken. Sixty-three educational administrators in southwestern Michigan—thirty from private schools and thirty-three from public-school systems—were involved through a structured interview that used a questionnaire as its basis.

Findings

Based upon the structured interviews of administrators and the related literature, thirty-five essential elements of administrative responsibility relative to facility planning were identified. Ten related to the area of general school survey, twenty-one to the area of new buildings and major renovations, and six to the area of school maintenance.

Conclusions

It was concluded that:

1. The planning of educational facilities requires cooperative efforts from various people including administrators, teachers, board members, students, and parents and should not be expected of the architect alone.

2. The planning of educational facilities is a complicated process and educational administrators in preparation for their responsibility should include a course in educational facility planning.

3. Most private-school administrators interviewed had not taken courses related to planning educational facilities, and this was noted as a weakness.
4. The private-and public-school administrators have similar concerns for planning educational facilities although the scope of the responsibility of superintendents for facility planning in large school systems is more complex than that of a small school principal.

5. The clarification of the educational administrator's responsibility possesses a potential for improving the process of planning educational facilities and for eliminating the confusion which often arises concerning the responsibility.

6. The stages and characteristics of the historical development of educational facilities by administrators in southwestern Michigan were quite similar to that of Massachusetts.

Recommendations

1. Whereas it was found from the literature reviewed (Campbell, 1973; Thrasher, 1973) and whereas 64 percent of the educational administrators surveyed support that teachers, students, parents, architects, and those concerned with education should be involved in planning educational facilities, it is recommended that the community's contribution should be sought as much as possible during the planning process.

2. Whereas it was found from this study that only 13 percent of the private-school administrators had taken a School Building Planning course and only 27 percent had taken a School Survey course, it is recommended that private-school administrators should include such a graduate course in planning educational facilities during their training and should thereafter attend seminars on facility planning in order to keep abreast with recent changes in the field.
3. In order to make the position of the educational administrator all-inclusive, it is recommended that a summary of his or her responsibility in facility planning should be included in the development of the job description.

4. It is recommended that educational administrators should be concerned with educational facility maintenance design during the planning process.

5. Whereas it was found that the educational administrators surveyed had no written guide as to their responsibility for facility planning, it is recommended that educational administrators should consider as a guide the identified, essential elements in this study during their involvement in facility planning.

6. Whereas it was discovered through this research that the historical development of private-school administrators' role for educational facility planning is non-existent in southwestern Michigan, it is recommended that further study should be conducted in this area.

7. It is recommended that this study should be replicated in other states in the United States to ascertain how other educational administrators view their responsibility for planning educational facilities.

It is recommended, however, that delineation be made between respondents with actual experience in school construction projects and those lacking such experience.
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DEDICATION

This dissertation is dedicated to my wife, Grace, whose sacrifice, support, prayers, and unfailing love have been sources of inspiration throughout my graduate studies; and to my children Jimmy and Janice for their patience and loving endurance throughout the years devoted to this work.
CHAPTER I

INTRODUCTION

It is difficult, if not impossible, to administer an educational program without educational facilities. An educational program fulfills its purpose if a child learns. In order for learning to take place, a child has to interact with his or her environment. Davis (1929) stated that a "... program that is 'child centered' has emphasized the necessity of providing an environment in which the potential abilities of individual children are discovered and developed" (p. 1). Even the advocates of open environment "recognized that learners must be in some kind of site or structure which for a period of time performs educational functions" (Davis, 1973, p. 2). Such an environment requires planning.

Planning educational facilities today is not an easy task. Recent advances in electronics, teaching devices, and automated instructional material have been so rapid that educators and school planners have yet to realize their full import (Trotter, 1969). Another reason for difficulties faced in planning educational facilities is given by Davis (1973) as follows:

School facilities today are more complex than ever before. Such facilities include a site, a physical structure, an arrangement of spaces, a set of special environments, and a cluster of specialized tools called furniture and equipment. (p. 2)
The existing economic and social problems also present difficulties in facility planning. Shifting student populations, inflating costs, and public reluctance to approve expenditure of funds create problems that require more accurate and efficient planning than was necessary in the past (Piele & Wright, 1976).

As a result of these difficulties, there are increasing challenges to improve facility-planning methods because the planning of today will affect the educational programs for many years to come. The buildings erected will, for several years, "accommodate changes in curriculum content, teaching methodology professional personnel, and community characteristics" (McClurkin, 1964, p. v). The planning of educational facilities should, therefore, be done well because "excellent facilities for a given situation enhances learning, increases teaching efficiency, lowers the rate of obsolescence and deterioration, reduces those educational losses resulting from inadequate housing, and minimizes the extent of rehabilitation when needed" (ibid).

In the United States, the superintendent of a public school or the principal of a private school, under the board of education, is responsible for overall planning for educational facilities in his/her school system. The public-school superintendent or the private-school principal has daily contacts with his or her community and has opportunity to study the educational and the local community needs with the ultimate goal of adjusting one to the other. The public-school superintendent or the private-school principal is in a position to understand the peculiar educational facility needs, limitations, and possibilities of his or her community in a way that only one
who has lived in that community in a position of leadership can understand them. For the purpose, and the convenience, of this study, the private-school principal or the public-school superintendent are referred to as the educational administrator.

**Statement of the Problem**

Planning of educational facilities is recognized as the responsibility of the educational administrator (Anderson & Van Dyke, 1972; McClurkin, 1964; National Society for the Study of Education, 1932). Considerable literature has been written about planning of educational facilities and about the role of the architect and the facility planning specialist, but the details of the educational administrator's responsibility for facility planning has not been clearly defined (Boyer, 1973).

**The Purpose of the Study**

The purpose of the study was to determine the educational administrator's responsibility for facility planning as seen by the public-school superintendents and the private-school principals in southwestern Michigan.

**Sub-purposes**

In order to accomplish an adequate treatment of the problem, the following sub-purposes were identified:

1. To investigate the historical development of facility planning by educational administrators in the United States and an attempt was made for a similar investigation for southwestern Michigan.

2. To analyze information obtained during personal interviews with educational administrators.
3. To identify essential elements of the responsibility in facility planning as viewed by educational administrators in southwestern Michigan.

Importance of the Study

The responsibility of the educational administrator in facility planning has gained increasing importance. The planning of functional educational facilities requires time and an understanding of the responsibility of the educational administrator in order to guide different groups involved in the process of planning facilities. The need for defining the responsibility of educational administrators has been expressed by authors on facility planning. McCracken (1969) stated:

Another continuing need is for better organizational set-ups in educational programs. These can best be achieved by wise planning prior to building. . . .

All of the foregoing considerations are taking on added importance today; for we must be certain that educational programs and facilities effectively provide equal opportunities for all youth and help to abolish dual school systems within a district. Many of the mistakes of the past make this very difficult; but these mistakes must not be allowed to continue.

Careful planning will help answer many of the foregoing questions and also other questions yet to be raised about the educational process. The failure of the superintendent to provide the leadership in this most important phase of planning---a comprehensive survey of projected educational needs---can result in poorly planned buildings. And, to compound the injury, poorly planned buildings will surely result in less than effective, successful educational programs. (p. 3)

Brooks (1972) pointed out that it is difficult to avoid the suspicion that many disappointing buildings end up that way because the parties involved in their planning were either confused or did not know their responsibility. Everyone involved in the planning process of educational facilities should know his or her responsibility. The National Society for the Study of Education (1934) stated that

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... the planning process becomes a cooperative enterprise in which superintendent, architect, and contractor each has a definite function in connection with each major decision. Evidence shows that disregard of any of these factors results in poorly planned buildings. The unpublished University of Iowa studies of errors in school building planning, of C. P. Minear in six consolidated schools of Iowa, and of G. K. Lowry in six township high schools in Indiana, indicate clearly that absence of professional participation by the school superintendent in the planning process results in an astounding number of breakdowns and maladjustments in building utilization. Minear identified 233 specific errors classified under 118 types. Lowry identified 317 specific planning errors and 345 structural errors. Practically all the mistakes could have been avoided by proper planning. (p. 135-36)

Too often educators dabble in architecture and architects get involved in curriculum designs. The NSSE pointed out the danger:

... not only in view of consequences that may arise when those who are not qualified endeavor to assume responsibilities for which they have had inadequate preparation, but also because in an enterprise that engages such a diversity of talent there are also conflicts in interests that demand friendly and equitable adjustments, rational understandings, and impartial adjudication if the school district that pays is to secure the building for which contracts have been signed. (NSSE, p. 57)

The educational facilities which result from the confusion of responsibilities by those involved in planning not only affect the quality of the educational programs which they house but also the economy of the community they serve.

McGuffey (1969) expressed the same idea:

Physical facilities exert a profound and continuing influence on the scope, content, and quality of educational programs which they house. Moreover, these facilities represent major capital investment in the communities which they serve. (p. iii)

Bass (1973, p. 4) expressed the need for this study by stating that the increasing complexity of school-building requirements makes it necessary for educators to understand clearly the nature of and also their responsibility in the school-planning process.
It is believed that this study will bring to light information that may be useful to educators in:

1. Evaluating the effectiveness of their responsibility in facility planning

2. Providing information that may be used in the job description of educational administrators as it pertains to facility planning.

**Limitations and Delimitations of the Study**

1. This study was limited to the public-school superintendents and the principals of the private schools in Berrien county and the contiguous counties, Van Buren and Cass.

2. The source for the identification of the essential elements of the administrator's responsibility in facility planning was the related literature reviewed, the data gathered and analyzed, and the experiences gained from interviews during the study.

3. The study dealt only with the responsibility of the educational administrator as it relates to school survey, new buildings and major renovations, and school maintenance. It did not deal with different techniques of planning such as subcontracting, construction of facilities, or systems approach.

The following terms are defined to ensure familiarity with the present investigation:

**Educational Administrator**

For the purpose of this study, the term educational administrator refers to both the superintendents of the public schools and the principals of the private schools, elementary and secondary. However, in
the analysis, the responsibility as viewed by the public- and the private-
school administrators will be shown separately and compared.

Environment

The environment is the sum of all the factors that combine to create
a teaching-learning situation. The school's environment can be divided
into (A) physical environment which includes, for example, the thermal,
auditory, lighting, and aesthetic aspects of the school facility and its
surroundings, and (b) psychological environment, which includes every­
thing outside of the individual to which he or she responds and with
which he or she interacts, either consciously or unconsciously.

Open Environment

A physical space characterized by the reduction or even the
complete elimination of internal walls is called open environment. Equip­
ment and furniture may be used to identify specific spaces within the
open environment.

Facilities

The physical properties of a school, land, buildings, improve­
ments other than buildings, and equipment, or any physical property
outside the school campus used to accomplish any part of the curricu­
lim are referred to as facilities.

Facility Planning

Planning for the physical property of a school district or private­
school system is facility planning. It consists of planning for grounds,
buildings, and equipment to facilitate an instructional program.
Responsibility

For the purpose of this study, responsibility is used to mean the tasks in which the educational administrator is involved during the planning of facilities.

Educational Program

The entire offering of the school, including the out-of-class activities, and the arrangement or sequence of subjects and activities, is included in the educational program.

Review of Related Literature

In the planning process of educational facilities, McCraken (1969, p. 1) stated that the educational administrator is the key person in every case. McClurkin (1964) had earlier stated:

The superintendent of schools, as executive agent of the school board and titular head of the school staff, is the person upon whom final responsibility for educational planning falls. He is thus responsible for school plant planning coordinating the efforts of the various individuals and groups involved in the process. . . . His position of leadership, his contacts in the community, and his acquaintance with the citizenry qualify him for this role. (p. 17)

In the United States, educational administrators have been key persons in the planning for educational facilities as early as 1820 when James G. Carter, Horace Mann, and Henry Barnard preached the doctrine of universal education (Long, 1933). In 1832, William A. Alcott provided a schoolhouse plan which won a prize from the American Institute of Instruction (Long, p. 6). As a result of the influence of Horace Mann, Sheaf Primary School was erected in Boston. At the dedication of this building, Mann said that the building "might well be called the model schoolhouse of the state, and in schoolhouses Massachusetts was the
model for the world" (Barnard, 1948, p. 176). Mann's influence also led to the erection of the Quincy Grammar School in Boston, the first graded school in the United States.

In 1857 Philbrick, a superintendent of schools in Boston suggested a plan for educational facilities to his board of education. Philbrick's plan was "adopted and the first model primary schoolhouse, the May, was erected in 1864" (Long, 1933, p. 15).

The educational administrators have continued since the 1860s to have key responsibility for facility planning. In 1969, McCracken stated that the educational administrator is "the beginning and the end in school plant facilities--an awesome task" (p. 1).

In order to investigate the responsibility of the educational administrator for facility planning, the Comprehensive Dissertation Querry Service of University Microfilms revealed that only fifteen dissertations from the 1950s to the present dealt with related topics (a selection of these are listed in the bibliography). There were, however, well over a hundred dissertations written that were distantly related to this study in some way.

An exhaustive computer search through ERIC files was done by North Carolina Science and Technology Research Center. The search produced a list of fifteen documents. Those that provide information on the administrator's responsibility for planning facilities are referred to below:

Fredrickson (1975) provides useful information for educational administrators. He renders practical guidelines which the administrator may apply in his or her leadership during the process of planning educational facilities.
One study (Campbell, 1973) provides information which educational administrators need at the initial stage of planning educational facilities. Campbell states that the educational administrator should not ignore citizens, teachers, educational programs, school safety, flexibility, and environmental considerations in the initial planning process. The administrator should not fail to engage in flexibility studies and in information—giving question/answer sessions with community members, staff, and students. The information provided by Campbell was useful in identifying essential elements of the administrator's responsibility for facility planning.

Brooks (1972) provides information that clarifies the relationships between educator and architect in the planning of a new school. He points out that when the architect is directed by many parties during the planning process, he or she finds it difficult to sort out instructions. He recommends that the architect be responsible to one particular person, the educational administrator.

Herman and Hirsekorn (1975) discuss specific steps involved in planning a school building from its inception through the occupancy and maintenance. The document provides useful information regarding the responsibility of educational administrators in developing educational specifications, financing the need for educational facilities, remodeling and renovating old buildings, and maintaining educational facilities.

Bass (1973) notes that with the increasing complexity of school building requirements, educators should clearly understand the nature of their role in the school planning process. This document discusses the educator's role as it relates to the selection and duties of the architect.
Thrasher (1973) points out that citizens, students, and teachers, as well as architects and administrators, should be actively involved in planning for educational facilities. The document states that this involvement is essential in order that school plants serve their purpose—facilitating learning. Thrasher shows that cooperative planning helps to insure financial support and intelligent use of buildings when they are completed.

In summary, literature indicates that the educational administrator is the key person in planning educational facilities. It is the educational administrator upon whom final responsibility for planning educational facilities falls.

**Related Studies**

McCrary, Nile O. (1975)

This study sought to identify essential elements for the program of school-plant planning and, on the basis of this identification, to develop guidelines for planning school facilities, grades 1-12, in Tennessee.

The sub-problems for this study were:

1. To trace the historical development of school planning in Tennessee

2. To identify the elements commonly found in or recommended for inclusion in a program of school-plant planning

3. To identify and appraise the general elements considered characteristic of a program of school-plant planning

4. To develop guidelines for planning school plants based on the elements identified and appraised.
The findings and conclusions showed the elements which were essential to a program of school-plant planning. The elements were:

1. Determination of school-plant needs
2. The development of standards and educational policy
3. Selection of an educational consultant
4. The public-relations program
5. Legal problems and services
6. The school survey
7. Planning the educational programs
8. Preparation of educational specifications
9. Site selection and acquisition
10. Architectural services
11. The financial program
12. Construction services
13. Selecting furniture and equipment
14. Accepting and occupying the building

Larson, Arthur L. (1966)

The purpose of this study was to investigate the roles of educational consultants who, as school-planning specialists, have assisted local districts in planning for new school plants.

The study focused on a problem which may be useful to the present study. The problem was:

1. To determine what specific functions were performed by educational consultants
2. To define relationships of the consultants with other personnel involved in the same planning projects

3. To assess the influence effected by the consultants within the projects

4. To appraise the contributions of the consultants to the planning process.

Some of the major findings of the study were:

1. Consultants functioned in all phases of school planning. They most frequently helped with school surveys and site selections.

2. Fourteen common tasks were defined which revealed what the consultants did in helping districts plan for new school plants. The task most frequently performed was that of stimulating local thinking and action.

3. The influence of consultants was reflected by fourteen effects produced by their assistance. The most frequent effect was the obtaining of maximum facilities for the money expended.

4. The consultants were perceived to have exerted their influence through the exercise of twenty-eight technical skills, human relations, and conceptual skills. The most frequently recognized skills were the abilities (a) to understand the architectural features of the proposed plant; (b) to communicate with educators, architects, and laymen; and (c) to visualize the proposed school as a total unit.

Carpenter, Charles E. (1970)

This was a case study of the facility-planning process in five Texas two-year institutions. The study attempted to discover specifically of what the process of planning consisted by:
1. Ascertain the who was involved in the process
2. Determining what procedures were used in planning educational facilities
3. Discovering what data were used as a basis for planning decisions.

Some of the recommendations given are useful to the present study. They were (1) that sufficient data about the community, resources, potential enrollments, and projected employment needs should be collected and used as a basis upon which to make planning decisions; (2) that sufficient lead time should be allowed to permit a thorough examination of alternative solutions to planning problems; and (3) that a carefully conceived costs, income, and resource allocation model should be developed for the use of planners.

Boyer, Wayne D. (1973)

The purpose of this study was to investigate the nature and degree of congruency of expectations in school-building planning and development held by:

1. Architect
2. Superintendent
3. School board member—with respect to two of the agents.

In major conclusions the data suggested disagreement between the superintendent group and the architect group about the proper role of the superintendent in the school-plant development process. This discrepancy was so severe as to suggest the potential for conflict between these two primary agents.
Procedures for clarification of the superintendent's role was discussed and recommendations for further research were mentioned.

Hodel, Ross A. (1977)

The study was undertaken to develop procedural instruments which would serve as a guide in the process of educational planning for school facilities. The following instruments were developed to enable the educator to complete the planning process through which he or she could guide the staff and the community:

1. Planning the educational programs
2. Calculating room and/or space requirements
3. Preparing specifications to guide the architect
4. Reviewing those plans from an educational viewpoint
5. Moving into and settling down in the facility.

The instruments provided guidelines and background information which may be used by administrators reviewing architectural plans from an educational point of view.

Evans, Milton D. (1974)

The superintendents' questionnaire for this study was devised to determine the skills and information which the school superintendents thought essential, that is, necessary for performing their administrative responsibilities in planning educational facilities. In order to validate his questionnaire, thirty school superintendents were interviewed using the instrument as a basis. The study stated that the reaction of the thirty superintendents to the importance of the area of facility planning was considered positive and their understanding of the questionnaire was adequate. The study further stated that the administrators interviewed
expressed their interest in the areas covered by the instrument and suggested that more training in the field of facility planning be offered to future school administrators.

**Procedure and Methodology**

This study concerning the responsibility of the educational administrator for planning educational facilities is descriptive. The following methods were used:

1. A survey of literature and research established the need for defining specifically the responsibility of the educational administrator for planning facilities. A further survey of literature provided the basis for identifying the essential elements of the administrator's responsibility.

2. In addition to the survey of literature, sixty-three educational administrators from private and public schools in Berrien, Cass, and Van Buren counties were visited and interviewed, using the questionnaire as a guide (appendix A).

3. The data gathered were analyzed and the results formed a basis for identifying the essential elements of the administrator's responsibility.

**Organization of the Study**

Chapter I introduced the importance of planning facilities for educational programs. The statement of the problem, purpose, and importance of the study was presented. It also included the definitions of significant terms used in the study, limitations, and delimitations of the study, a brief review of related literature, and procedures to be followed.
Chapter II contains a more complete review of literature dealing with the responsibility of educational administrators as they relate to facility planning.

Chapter III outlines the methodology of the study, showing how the data was gathered and analyzed.

Chapter IV presents the findings of the study.

Chapter V presents essential elements identified from the related literature, the data gathered and analyzed, and the experiences gained during interviews with the educational administrators.

Chapter VI presents the summary, conclusions, and recommendations.
CHAPTER 2

REVIEW OF LITERATURE

The purpose of this chapter was to investigate from literature the responsibility of the educational administrator for facility planning. In order to accomplish the task, the following areas were covered: historical development of educational facility planning in the United States, facility development in southwestern Michigan, general introduction to the planning process, conducting school surveys, planning new buildings and renovating old ones, and maintaining educational facilities.

Streeter (1975, p. 21) stated that the educational administrator "as professional leader and executive officer of the board of education was responsible for school plant development." He further observed that "according to the American Association of School Administrators, the superintendent of schools spent approximately 29 percent of his time in school plant" (p. 21).

Although the Council of Educational Facility Planners. International (1976) indicated that the educational administrator is a primary agent for facility planning, lack of definite statements of his or her responsibility still raised some problems, even in the 1970s. Babcock (1979, pp. 26-27) observed:

Unfortunately, even to this very day, it is not always acknowledged that there is need for cooperation between educators and architects. Current literature reveals that there is still a wide diversity of practice in the planning of school buildings.
It, therefore, became apparent from literature that the responsibility of the educational administrator in planning facilities needed to be clearly defined.

**Historical Development of Educational Facility Planning in the United States**

The development of educational facilities in the United States has reflected and responded to broad social changes which should be significant to facility planners (Council of Educational Facility Planners, International, 1976). The social changes plus other factors have contributed to a slow recognition of planning educational facilities as an essential responsibility of educational administrators. Roaden (1963) explained:

> Perhaps the slow growth of school planning as an administrative specialty can partially be explained by the fact that for many years school administrators and architects alike viewed the planning of school buildings as the sole responsibility of the latter. During the past few years, however, both educators and architects have come to realize that certain types of information relative to the purposes of the facility must be developed by educators. (p. 24)

The realization by both architects and educators regarding the unique role educators play in planning educational facilities has created a need for specifying the elements of his or her responsibility. This study seeks to clarify the responsibility of educational administrators in planning educational facilities.

**Early Planning Developments**

School houses in the United States have a history as old as the nation's development. At first, home instruction was depended upon to furnish the necessary training, but with an increasing
population and an ever greater need for organized instruction, it
soon became apparent that this procedure would not have the desired
result (Long, 1933). Long further indicated that "in the development
of schoolhouse facilities, the rest of the country undoubtedly followed
Massachusetts" (p. 24). Callahan and Clark (1977) wrote:

The primary schools that emerged from Massachusetts laws of
1642 and 1647, and similar laws in other American colonies
were of several different types. They included a dame school,
which was concerned chiefly with teaching reading and writing,
parochial schools conducted by various religious groups, and
charity or pauper schools, which were managed by missionary
groups. (p. 10)

The conditions of schoolhouses following Massachusetts' laws indicated
very little improvement. They were "small, crude shelters with wooden
walls and roofs and few windows" (Council of Educational Facility

Seventeenth and eighteenth century American schoolhouses
had progressed very little beyond the ancient Greek notion
that they were basically shelters in which pupils and teachers
came together. They did include some furniture--benches and
table for the pupils and a podium for the teacher. (p. 18)

Although these one-room schoolhouses were primitive, they "did serve
the needs of an immigrant, agrarian society and their presence indi-
cated an early recognition of the value of education--no matter how
narrowly defined" (Knight, 1957, p. 2).

Planning Developments in the 1800s

The advent of the nineteenth century brought some changes in
the planning of educational facilities. The population growth mainly
in the eastern seaboard towns led to the adoption of a plan developed
by Joseph Lancaster, a British schoolmaster. The Council of
Educational Facility Planners, International (1976) added:

Implemented in the United States around 1806, the Lancasterian Schools featured a large (50' x 100') room furnished with numerous rows of benches facing a teacher's platform. . . . Comfort was irrelevant in this educational venture which operated on strict discipline and regimentation. Thankfully, the Lancasterian Schools were in vogue only until about 1840. (p. A-3)

Although the Lancasterian plan for schoolhouses responded to the need then, educational administrators in the United States sought for ways to improve schoolhouses. In 1830 the American Institute offered a prize for the best essay on the construction of schoolhouses, which was won by William A. Alcott. The plan of the schoolroom recommended by Alcott was described by McClintock (1970) as follows:

The room to accommodate 56 pupils, each with a separate seat and desk, and 8 to 16 small children with seats for two, should be 40 ft. long by 30 wide. The teacher's platform occupies the north end of the room, towards which all the scholars face when in their seats. Each scholar is provided with a seat and a desk (each 2 ft. by 14 inches), the front of one desk constituting the back of the seat beyond. The top of the desk is level, with a box and lid for books. The aisles on each side of the room, are 2 ft. wide, and those between each range of seats and desk is 18 inches. A place for recitation 8 feet wide extends across the whole width of the room, in the rear, with movable blackboards. The room can be warmed by stove, placed as in the cut referred to, or by fire heated by furnace or stove in the basement. The room is ventilated by openings in the ceiling. A thermometer, library, museum, etc., are to be furnished. (p. 116)

The schoolhouse plan introduced details never expressed before by planners. Long (1933) commented that Alcott's plan "was considered an improvement over schoolhouses which were being used" (p. 7).

In 1838 another educational administrator, Horace Mann, Secretary of the Massachusetts Board of Education, recommended a plan for educational facilities that "fixed public attention on the defects of these edifices, and has led to extensive improvement all over that
commonwealth" (McClintock, 1970, p. 117).

One of the educational administrators who contributed to the planning of educational facilities in the 1840s was Henry Barnard, Commissioner of Public Schools in Rhode Island. Barnard recognized the need for educational facilities to relate and to support educational programs (Wilkinson, 1978). Concerning Barnard, McClintock (1970) wrote:

He brought architecture and pedagogy into cooperation, and through this operation, he determined the characteristic concerns to which the designers of schools must still attend. . . . He took great care to explain the spiritual impact of the child's physical surroundings. (p. 6)

Barnard was concerned about the nature of the learner and his relationship with the learning environment. He was an associate of Horace Mann, and it was due to their efforts that some advances were made in the design and use of schoolhouses. Commenting on the work of Barnard and Mann, the Council of Educational Facility Planners (1976) added:

Because of their work, the relationship between learning and the built environment was acknowledged. The quality of school construction improved: brick and stone replaced wood as a building material; desks of various sizes replaced benches; centralized heating systems replaced stoves. Recreational facilities were provided. (p. A-3)

In 1848, through the influence of Horace Mann, the first graded school in America, Quincy Grammar School, was built in Boston (Brown, 1965). Cubberly (1934) wrote about the impact of Quincy Grammar School stating that "more than any other single influence it stimulated the introduction of the graded classroom form of school organization" (p. 311). The educational administrators throughout the
United States made efforts to use the value of free education for the improvement of educational facilities. Castataldi (1977) noted:

Through the efforts of Horace Mann, Henry Barnard, and others the value of free public education became an accepted institution in America. Schoolhouses of many types began to rise throughout the country. The more elaborate schools were, of course, erected in cities. Simple one- or two-room structures sufficed for the rural areas. (p. 10)

In 1857 Philbrick, superintendent of schools in Boston, suggested a primary school plan to his School Board Committee. As a result of his suggestions, the first model primary school, the May, was built in 1864 (Reisner, 1930). Beginning about 1860, learning theories of Heinrich Pestalozzi swept over the United States. As a result of Pestalozzi's idea, the Council of Educational Facility Planners, International (1976) expressed:

The value of observation, investigation, discussion, evaluation, and self-expression and the importance of the individual learner were established and new subject matter was introduced. With this growth in learning theory and increase in subject matter, larger spaces were required. . . . By 1873 the advent of Kindergarten and the secondary school gave new dimension to public education. With its emphasis on the development of the individual child, the kindergarten quietly began unbolting furniture from the floor and changing traditional concepts of space used and equipment. (pp. A-3, A-4)

In 1879, Lincoln, one of the educators, reported to the Massachusetts Board of Education and made the following proposals for educational facility planning:

Orientation of the structure so that corners would point to the cardinal points of the compass in order to insure direct sunlight in every room during some part of the day; doors to open outward as a safeguard in case of fire; fireproof stairways, with no spirals or walls, and with at least one landing between floors, the height of the riser to be such as to permit easy travel, no schoolroom to be placed in a cellar or partially underground, all schoolrooms to be on the first and second floors; no building to be over three stories high; 20 square feet of floor area in the
classrooms for each pupil, and a height of 12½ feet, thus making provision for 250 cubic feet of air per pupil. . . . (p. 123)

The learning theories of Pestalozzi influenced the plan of Lincoln. The safety of the learner and the environmental convenience for learning were emphasized. This emphasis was also revealed in the planning of educational facilities as may be seen in the report made by Dickson to the Massachusetts Board of Education in 1885. In his plan he suggested:

In constructing the building the following hints may be useful. Let it be of ample size for the number of children to be provided for. . . . Provide good systems of heating, ventilating and lighting the rooms. Make ample provision for dressing rooms, closets, shelves for books, for apparatus, and for natural objects to be used as means of teaching. . . . It is important that the school furniture selected be specially adopted to the physical wants of the individual pupils. . . . (p. 79)

In the 1890s, the planning of educational facilities had not changed from the previous decade. The design of schoolhouses throughout the United States continued to follow the pattern of the Quincy Grammar School constructed in Boston in 1848 (Koos, 1919; Leu, 1965; Morisseau, 1972; Sibley, 1924). Leu, in writing in 1965, added that "it is interesting to note that this school building, built over a century ago, is still in use today" (p. 3).

Planning Developments in the 1900s

By 1900, the egg-crate school design was still the model (Morisseau, 1972). Morisseau further indicated that the pattern had not totally disappeared by the time he was writing in 1972, and "may never do so" (p. 6).

It should be noted, however, that there were a few exceptions to the general pattern of early school-building design. The Educational
Facilities Laboratories (1960) expressed:

There were notable exceptions to these monumental buildings with their impressive entries and halls and their depressing rooms. Frank Lloyd Wright's Hillsdale Home School in Spring Green, Wisconsin, done at the turn of the century, and Dwight Perkin's Carl Schurz High School in Chicago in 1910 were two that pointed the way toward open planning on a scale more appropriate to the younger generation, and a freedom from the dictates of historical eclecticism. (p. 31)

Educators realized the need for improving educational programs to be accommodated in new school designs. Hence, curriculum for both elementary and high schools expanded (Long, 1933 and Morisseau, 1972). The trend in the planning of educational facilities followed the increase in society's complexity (Leu, 1965). The Council of Educational Facility Planners, International (1976) made the following observation:

Until the post World War I period, few architectural changes occurred in educational facilities. Although size increased and Victorian decorations disappeared, no positive innovations were developed. Schools, while sturdy and for the most part functional, were flexible, uninspiring and monotonously uniform. (p. A-4)

In the 1920s some changes began to appear. In 1928 and 1929 Barrows developed a questionnaire study of "the most modern elementary school building" in eighty-four communities. Her study revealed that "there is a growing tendency in planning elementary school buildings to provide such facilities as auditoriums, gymnasiums, and special rooms..." (p. 14).

Educational administrators gave attention to desirable sites for school buildings, safety and health of children, and play programs (Engelhardt and Engelhardt, 1930).

In 1930 the depression affected the planning of educational facilities. Between 1933 and 1937 the construction of most public
school buildings was supported by the federal government (Leu, 1965). The school buildings erected during this decade were plain and avoided any wasteful ornamentation as far as possible. The Council of Educational Facility Planners, International (1976) pointed out that state controlled building standards were introduced in the 1940s. The appearance of school buildings during the period prior to World War II was described by Castaldi (1977):

Many looked like large boxes enclosed by red brick walls and covered by a steep slate roof. The large boxes were subdivided into four or eight smaller, uniform cubicles called classrooms. Oftentimes, the attic space under the steep slated roof was finished and used as an assembly hall. (p. 8)

In the early 1950s there was a process of change. Morriseau (1972) indicated that educators stimulated by "foundation funds--began experimenting with new educational arrangements such as team teaching, new techniques such as non-graded instruction, and new technology such as the use of educational television" (p. 6). In order to accommodate new learning activities and equipment, expensive school buildings were erected. The Council of Educational Facility Planners, International (1976) noted that "School construction was a multi-billion dollar effort and school design reflected an interest in accommodating more movement, activity, and experiential learning" (p. A-4).

The planning of educational facilities in the 1960s, like any other institution was affected by economic changes, social ferment, and introduction of new educational technology (Leu, 1965). Educational administrators vocalized the need for facilities which would encourage self-direction and individualization of students during their
learning. The need was met by the construction of "facilities which are open, colorful, informal, comfortable, which allow movement and provide visual and spatial variety" (Council of Educational Facility Planners, International, 1976, pp. A-4, A-5). There was emphasis on windowless schools in order to lower the load of air conditioning equipment and to reduce damage due to vandalism (Castaldi, 1970).

The schools constructed during this period reflected a new concern for needs and preference of the users.

The planners of educational facilities in the 1970s were faced with many challenging tasks. With the increased concern of educators for the learning of children, the educational programs broadened, teachers and students used a wide range of equipment, needed larger rooms, better and larger storage space, greater flexibility, and easily moveable furniture and equipment (Leu, 1965). In the mid-1970s, the educational facility planners . . . were coping with the complexity of new issues and needs, declining enrollments and disposing of unnecessary buildings, intelligently using energy and other environmental resources, providing for more creative forms of career education, extending the use of schools as a community resource, modernizing and recycling facilities, designing to avoid vandalism, providing flexibility which will allow response to future unknown needs, designing for the handicapped, and so on. (Council of Educational Planners, International, 1976, p. A-5)

In order to plan for the future, educational facility planners should be aware of the complexity of social structures so as to plan for school buildings "in such a way as to allow for changing educational objectives, and activities in order to avoid having buildings become obsolete at an early age" (Roaden, 1963, p. 31). Educators should address themselves to the fact that "the needs of children seem to be
increasingly complex and difficult to meet because of changes in society and family structures and because of courtroom decisions" (American Association of School Administrators, 1976, p. 10). Educators should endeavor to update "the school facility planning process and for improving, through careful selection, education, and training, the performance of the educational planner" (Council of Educational Facility Planners, International, 1976, p. A-5). New technologies like the computer should be used where possible to provide for future planning. By exploring into new concepts and developments, planners may realistically plan for rearrangement for the interior as well as the exterior spaces to accommodate new kinds of instructional media. Present school buildings may be improved to meet the challenges of future educational needs. Castaldi (1969) offered hope to planners:

The future holds much promise for the planning of educationally creative schools. A number of emerging educational concepts seem destined to make radical changes in the design of American schools. (p. 13)

Literature revealed that educational administrators have had key positions in the planning of American schools. Truth was spoken when Brown (1975) in his research stated that "historically, schools in America have been planned and built with only the input of the superintendent and his central office in conjunction with an architect" (p. 349).

Facility Developments in Southwestern Michigan

As Massachusetts became the leading colony in the development of education, it also led in the development of schoolhouse facilities in the United States (Long, 1933). Michigan followed the example of
Massachusetts both in educational practices and schoolhouse facilities development. The people of Michigan came from all over the eastern states and brought with them cultural and educational influences. Jackson (1926) expressed:

From Rhode Island to Maine and in all New York counties bordering on the Erie Canal and the Hudson and the Mohawk River . . . this tide of immigration increased the number of villages from nine in 1825 to twenty-six in 1835 and caused Michigan to be more homogeneous in population and more definitely "Eastern" in outlook than any of the other states in the Northwest. The people in the new territory of Michigan brought educational practices and points of view of their earlier homes, and these were passed on to the next generation. . . . (p. 10)

The attention of people in Michigan for their support of educational facilities was awakened by the Act of 1827. Concerning the Act Dain (1968) said,

It marked the beginning of an educational consciousness in Michigan. . . . The law decreed that the money necessary for the purchase of a school site and for the building and maintenance of a schoolhouse was to be raised by a tax levied upon all residents of the district, rather than solely upon those inhabitants with children who would benefit by the law. (p. 133)

After the Act of 1827, schoolhouses were built here and there in southwestern Michigan. Ellis (1880) indicated that log schoolhouses were erected in various townships: Berrien near Niles Road (U.S. 31) in 1830; Niles and Hamilton in 1833; Decatur in 1835; Lawrence, South Haven, Antwerp, and Hartford in 1837. The log schoolhouses had some features resembling those of the homes in the area and their conditions for learning were poor. Concerning schoolhouses in Michigan Dain (1968) said:

Like the homes, most of the schoolhouses built in the interior during the years immediately preceding statehood were log structures, heated by Dutch fireplaces or stoves. If the separations between the logs were properly chunked and plastered,
which was frequently not the case, the building might be quite comfortable. Instructional materials and equipment were negligible. . . . Within the schoolroom there were neither maps, globes, nor blackboards. The primitive desks and slab benches were usually built at a uniform level, much to the discomfort of smaller students. Poorly sealed logs assured adequate ventilation but lighting was bad. Even on bright days the small windows in the log schools permitted so little light to enter that the students, facing the log walls, worked at their lessons in semi-darkness. (p. 196)

Educational administrators in Michigan as in other parts of the United States led out in planning of educational facilities. They wrote and spoke about the conditions of schoolhouses and suggested plans which should be followed. In the 1837 report, State Superintendent Pierce stated:

The schoolhouse should be placed in the most healthful and attractive spot in the district with due regard, of course, to the convenience of the pupils. The building should be spacious, warm, and well ventilated; there should be an enclosed yard suitable for proper exercise. (Jackson, 1926, p. 76).

In southwestern Michigan the construction of schoolhouses in some areas was far from the ideal buildings advocated by educators like Superintendent Pierce. The citizens of Three Oaks township in 1840 erected a log schoolhouse described by Ellis (1880) as "10 by 14 feet inside and, 8 feet to peak of roof, with puncheon floor, one window, and flattened logs set on pins for seats" (p. 337). Jackson (1926) noted that the conditions of schoolhouses in the rest of Michigan were no better than those in Berrien, Cass, and Van Buren counties. He explained that in 1842 State Superintendent Sawyer spoke of Michigan schools saying that "few buildings are what they should be, and a great many are worse than none" (p. 77).

In 1847 the conditions of schools in Michigan were still poor. State Superintendent Mayhew advocated the need for more space, the
use of Perkin's steam heating air furnace, and the choice of a proper site for school location (Jackson, 1926).

On January 1, 1851, Michigan's new constitution became effective. The first governor under the new constitution's provisions was Robert McClelland. During the period of McClelland's administration, "educational facilities were multiplying and improving" (Fuller, 1926, pp. 216-17). In the rural areas "the crude log structures that had housed the pioneer schools were being replaced by houses of frame, brick, or stone construction" (Starring & Krauss, 1969, p. 16).

Educational administrators and local school committee members began in the 1850s to improve the conditions of schoolhouses in southwestern Michigan. Ellis (1880) reported that by 1851 Lawton and Mattawan each had an excellent graded school and brick schoolhouse, "the one at Lawton being one of the best schoolhouses in the county" (p. 385). In 1854 there were brick schoolhouses erected in Niles, Cassopolis, and Buchanan.

Log schoolhouses, although they were being replaced by frame and brick edifices, were still used in Michigan as late as the 1860s. Starring and Krauss (1969) indicated that in 1867 "three-fourths of the eighty-nine schoolhouses in Tuscola County were built of logs" (p. 20). The authors observed that from all over Michigan, "inspectors reported schoolhouses not fit for cowsheds or pigpens . . ." (p. 20).

The decade of 1870s was a period in which administrators improved the conditions of schoolhouses in southwestern Michigan. In 1871 Niles township had a new three-story brick edifice. The building was "78 by 80 feet on the ground and three stories high
above the basement, containing eight recitation rooms and one lecture room, and furnished throughout with modern furniture (Ellis, 1880, p. 178).

In 1872 Martin, the principal of the school at Bangor township, led in educational plans for facilities. Concerning Martin, Ellis (1880) wrote,

With his presence was manifested an increasing interest in education on the part of citizens, which resulted the second year of his engagement, in the organization of a graded school. The immediate demand for more space was met by removing the staircase and hall of the present building, all available space being thus utilized; a recitation room of limited dimensions was provided for the high school. (p. 416)

Educational facility planners in southwestern Michigan were aware of facility needs which were advocated throughout the state by educators. The facility needs by this time included more space for the convenience of learners and teachers, a proper heating system, appropriate location of schools, and consideration of safety factors in a school building (Disbrow, 1968). In response to these needs, educators in St. Joseph township erected a brick building in 1872. The plans were prepared by Rufus Rose and the superintending committee consisted of W. S. Maynard and John Whittlessey. Of this school building, Ellis (1880) stated:

The edifice has a fine location on a spacious lot, and is built of brick and stone, 86 by 102 feet, three stories high, with basement. There are fourteen school rooms and a number of recitation rooms, which are heated by hot-air furnaces. The building presents a fine appearance, and its erection reflects great credit on the village and township. (p. 323)

Although the 1874 Kalamazoo Court decision authorized public high schools to be operated at the expense of the public, the conditions of schoolhouses still needed improvement. By 1875 Jackson
(1926) reported that in the construction of schoolhouses in Michigan there were "77 percent frame; 12 percent brick; 10 percent log; and 1 percent stone" (p. 85). Educational administrators continued to suggest ways to improve school buildings.

Jackson (1926) summarized the relation of the superintendents of public instruction in Michigan to the school-plant development as follows:

<table>
<thead>
<tr>
<th>Pierce</th>
<th>1837</th>
<th>Suggestions as to site and character of school buildings.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sawyer</td>
<td>1842</td>
<td>Desirable standards to be incorporated.</td>
</tr>
<tr>
<td>Mayhew</td>
<td>1847</td>
<td>Heating and ventilating standards and methods of attainment.</td>
</tr>
<tr>
<td>Gregory</td>
<td>1857</td>
<td>Desirable school apparatus.</td>
</tr>
<tr>
<td></td>
<td>1859</td>
<td>Recommended that districts having less than 50 pupils be authorized to raise tax for purchase of apparatus.</td>
</tr>
<tr>
<td></td>
<td>1862</td>
<td>Recommended that districts be furnished with plans and specifications for schoolhouses; also that they be obliged to have plans approved by competent authority before beginning the work of construction.</td>
</tr>
<tr>
<td></td>
<td>1863</td>
<td>Legislature requested the superintendent of public instruction to prepare plans and specifications of district schoolhouses and publish same in his reports.</td>
</tr>
<tr>
<td>Hosford</td>
<td>1869</td>
<td>Gave details to be embodied in a desirable district schoolhouse.</td>
</tr>
<tr>
<td>Pattengill</td>
<td>1895</td>
<td>Legislature made it the duty of the director of the district to supply certain specified school appendages. Gave specifications with respect to school architecture and proper heating, lighting, and ventilation.</td>
</tr>
<tr>
<td>Year</td>
<td>Author</td>
<td>Action or Publication</td>
</tr>
<tr>
<td>------</td>
<td>--------</td>
<td>-----------------------</td>
</tr>
<tr>
<td>1904</td>
<td>Fall</td>
<td>Stressed the value of beautiful school grounds and gave plans.</td>
</tr>
<tr>
<td>1912</td>
<td>Wright</td>
<td>Bulletin on beautifying school grounds.</td>
</tr>
<tr>
<td>1913</td>
<td>Keeler</td>
<td>Recommended that all building plans be passed upon by a state board of experts before construction begin.</td>
</tr>
<tr>
<td>1915</td>
<td></td>
<td>Legislature enacted as above and put in the Department of Public Instruction.</td>
</tr>
<tr>
<td>1917</td>
<td></td>
<td>&quot;Michigan building&quot; with plans, specifications, and standards.</td>
</tr>
<tr>
<td>1923</td>
<td>Johnson</td>
<td>Detailed building code. (pp. 95, 96)</td>
</tr>
</tbody>
</table>

Jackson (1926) further gave a list of bulletins issued by the Department of Public Instruction corresponding to the administration of different superintendents named since 1901 concerned with the school plant and equipment:

<table>
<thead>
<tr>
<th>Year</th>
<th>Author</th>
<th>Action or Publication</th>
</tr>
</thead>
<tbody>
<tr>
<td>1901</td>
<td>Fall</td>
<td>A study of school grounds for the school of Michigan</td>
</tr>
<tr>
<td>1903</td>
<td></td>
<td>Yards and architecture</td>
</tr>
<tr>
<td>1904</td>
<td></td>
<td>A study of school gardens and elementary agriculture</td>
</tr>
<tr>
<td>1908</td>
<td>Wright</td>
<td>School grounds and school architecture for the school officers of Michigan</td>
</tr>
<tr>
<td>1910</td>
<td></td>
<td>School architecture</td>
</tr>
<tr>
<td>1913</td>
<td></td>
<td>Planting plans for school grounds in Michigan</td>
</tr>
<tr>
<td>1915</td>
<td>Keeler</td>
<td>Michigan standard schools</td>
</tr>
<tr>
<td>1917</td>
<td></td>
<td>Buildings, plans, requirements and suggestions</td>
</tr>
<tr>
<td>1920</td>
<td>Johnson</td>
<td>Equipment, standards, and courses applying to Michigan high schools</td>
</tr>
</tbody>
</table>

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1922 School buildings, equipment, and grounds

1923 Rural school building plans, requirements, and suggestions. (p. 96)

The regulations issued by the State Department of Public Instruction concerning school plants applied to all schools in Michigan, public and private (Starring & Knauss, 1969). Disbrow (1968) referred to the state law of 1921 and said, this legislation explicitly provided for the supervision of private, denominational, and parochial schools by the Superintendent of Public Instruction. Section one of the law defined its general intent to be "that the sanitary conditions of such schools, the courses of study therein, and the qualifications of the teachers thereof shall be of the same standard as provided by the general school laws of the state" (p. 89).

Literature showed that the development of educational facilities in southwestern Michigan has been the same as in other parts of Michigan. The schools visited during interviews with educational administrators had modern facilities with features which fitted well into various designs of American schools as given by the Council of Educational Facility Planners, International (1976):

Flexibility, new building systems, open space, complex equipment, carpeting, air conditioning, movable walls, pods, use of new energy sources are a few features of contemporary schools. These innovations are the result not only of new technical capabilities, but also of a rather pervasive change in the perception of how learning happens. (p. A-4)

Educational administrators have been and still are key persons in planning educational facilities (Brown, 1975; Castaldi, 1977; and the Council of Educational Facility Planners, International, 1976; Leu,
1965). The present need is for a clear definition of the administrator's responsibility in planning educational facilities. The literature was reviewed and organized for the reader into the following areas: planning, new building and major renovating, and maintenance.

Planning Educational Facilities

The planning of educational facilities requires coordination of knowledge, skills, and efforts of different people. This is because "school programs are directly and sometimes adversely affected by the educational facilities in which they are housed" (Leu, 1965, p. 29). Educational facilities, on the other hand, serve the needs of different groups of people. Hence, "in planning buildings and facilities, the educational needs of the community, as well as the number of students to be served, must be taken into consideration" (Hollenberg, 1960, p. 1).

In order to ensure that educational programs that would serve the needs of the community and the students are translated into physical facilities, the educational administrator should occupy "a key role in the total planning process relating to the educational plan and the school plant program" (National Council on Schoolhouse Construction, 1964, p. 4). The cooperation between educator and architect would be inevitable if the purpose of planning educational facilities is to be accomplished. There must be a willingness from the educator "to face up to architectural design problems; and the architect in turn too must approach each design problem with an open mind and willingness to explore new educational ideas and translate them into
space designs" (Sumption & Landes, 1957, p. 155). Apart from cooperating with the architect, the educational administrator should know what is involved in planning functional facilities and specific tasks which he or she should undertake. The National Council on Schoolhouse Construction (1964) has given the following advice to administrators:

Educational plants which are of immense functional value to the instructional program are generally the result of a prudent plant planning process; this is also true of the educational physical properties which are planned so that they will be economical to maintain and to operate, and so that they will be safe, healthful, and aesthetically appealing to the particular school community surrounding each of them. These results of plant planning are the principal objectives of competent school plant planners. However, the attainment of new school plants which are functional, well-constructed, economical and aesthetic is not easy to secure. Plant planning is a complex, time-consuming process which taxes the energies and talents of a large number of persons. (p. 1).

Planning educational facilities is, therefore, a group effort. The coordinator of the group activities should be a professional who can lead people to create "school plants which demonstrate what can happen when free men work together toward a common and worthy end" (Perkins, 1949, p. 20). In other words, well-planned educational facilities should help students to grow and be happy. The person who should lead in the planning process is the educational administrator, the executive officer of the school board (The Division of Instruction, Maryland State Department of Education, 1977). As a guide for a well-planned school building, suggestions were given in American Educational Administrator (1967) as follows:

It must provide a functional environment for education moving into a state of unending transition. It must provide a visual environment which reassures and inspires—which
says to students that a change is a challenge, not a threat. It must encourage innovation and lend itself to modification as the educational program grows and changes. It must be a community rallying point, a focus of community learning from the cradle to the grave. Above all, it must not force the educational program into a restrictive architectural mold. (p. 8)

When the administrator knows the nature of functional educational facilities desired by the community, his or her leadership expertise in planning may be rightly exercised. The administrator should know his or her responsibility for planning the facilities in order to make it a purposeful preparation culminating in decisions which provide a basis for subsequent action.

School Survey

The purpose of school surveys is to provide a means by which a school system may determine ways to formulate its administration and supervision, eliminate waste, and put the investment of time, money, and human efforts into education (Cubberly, 1925). The National Study of Education (1934) added that "by marshalling competent personnel and using the best techniques and instruments available, surveys bring to bear upon the problem the best that the various professions involved have to offer" (p. 24).

The purpose of a school survey, therefore, is to determine the requirements, aspirations, and resources of a school system. Larson (1966) stated that "a school survey provides the means for studying a community, determining the enrollment of pupils to be served, defining the community's educational expectancies and its ability to provide, and to support the schools" (p. 24). A school survey is not undertaken just to collect information, it involves analyzing and interpreting
the data obtained (Sumption & Landes, 1957).

A school survey is an integral part of educational facility planning. It enables a school system to "secure a maximal provision of suitable educational facilities advantageously located for a minimum of capital expenditure" (National Society for the Study of Education, p. 24). It is through school surveys that a school system may establish a long-range development plan.

The responsibility of initiating and coordinating plans for facility planning lies with the educational administrator. American Association of School Administrators (1949) stated the responsibility of the educational administrator as follows:

He is the chief executive officer of all building planning, surveys, and procedures. It is his responsibility to see that capable assistance and special services are provided and smoothly coordinated in carrying out these procedures, or to carry them out himself. In either case, he is called upon for a remarkable degree of scholarship, judgment and tact. (p. 23)

The administrator anticipates needs, arranges for necessary studies, and makes appropriate recommendations concerning major proposals or requests to the board. His or her recommendations are based on the data collected and analyzed during the school survey. The information obtained from a school survey may help a school system to analyze the nature of its educational program, reveal building deficiencies, improve the use of public funds, and to insure proper locations and variations in designs of school buildings (Herrick, McLeary, Clapp and Boyner, 1956).

A school survey reveals the needs of a school and its community. It provides the basis on which to develop school policies. Sears (1928) stated:
As schools exist for the service they can render to the people, it is obvious that plans of instruction must be designed with careful regard for the interests and needs of those who are to be served.

It is in a study of the community itself, therefore, that a school survey may hope to find the proper starting point for school aims, school organizations, and instructional programs. Who the people are, their social and intellectual interests, how they live, what they work at, the geographical, social, and economic forces operating in community life are the factors with reference to which school policies must be developed. (p. 17)

The understanding of the purpose of a school survey helps the administrator to know whom to involve. It is the responsibility of the administrator to involve as much human resource as possible.

School Survey Team

The selection of the participants in a school survey should be done in the best way convenient to a school system since each system has a unique situation. From four studies (Boles, 1965; Leu, 1965; Louisiana State Department of Education, 1975; Sumption and Landes, 1957) the suggested list of individuals and groups that may be included in a school survey are:

1. Staff personnel
2. Administrator
3. Board members
4. Lay citizens
5. Civic leaders
6. Survey consultants
7. Local government
8. Students
9. City planners
10. State government
11. Architect
12. Engineers
13. Curriculum specialists
14. School-planning specialists

The list suggested was not intended to imply that all the individuals and groups should participate in every school survey. The school boards and their educational administrators could use the list as a guide to decide who should participate in a school survey planned. In Planning Together for Better Schools, it was suggested that "the Superintendent may exert initiative and leadership while principals, teachers, community leaders, and others, including children, are brought into the total picture with the children's activities and contributions gauged according to their maturity and capabilities" (1950, p. 17). The responsibility of the educational administrator in a school survey was defined by Herrick and others (1957) as follows:

According to the best practice of school administration, the superintendent of schools is the chief executive of the board of education and the sole executive directly responsible for anticipating needs, arranging for necessary studies, and making appropriate recommendation in the school plant field as in other aspects of school operation. (p. 7)

The educational administrator has the responsibility of planning for school surveys in his or her school system. He or she initiates the plan and exerts leadership throughout the school-survey period. The administrator supplies the necessary equipment and information that may be helpful to the survey team. The type of leadership given to a school survey team will determine its accomplishment. Castaldi (1977) observed that "educators generally agree, however, that a well-designed school survey reveals as objectively as possible the
educational status of the school district and sacrifices the action required if the educational objectives of the school district are to be realized" (p. 96).

The administrator, therefore, should know and discharge his or her responsibility well during a school survey. It is the administrator who should arrange for activities that may enrich or enlighten the experience of the survey team members. One of the activities that may be encouraged is the visiting of other school systems.

McCracken (1969) suggested:

Money should be provided in the school budget for visits to other districts where good results are being obtained from new and better ways of meeting educational needs of the citizenry. The personnel of a school district who are continuously involved in this sort of study and visitation will do an excellent job of planning an effective educational program. And from this careful effective planning the rewarding result will be better educational facilities. (p. 3)

The educational administrator should ensure that a school survey team is composed of those who know their duties and could contribute to the project.

**Determination of Needs**

The educational facility needs of a given community has both qualitative and quantitative aspects. The National Council On Schoolhouse Construction (1964) stated:

It follows that the qualitative portion must be spelled out to suggest the types of instructional spaces and equipment that would be needed to satisfy community demands for educational opportunities. . . . The educational plan implies the type or quality of spaces and equipment to be provided. The number of pupils to be housed determines in large part the quantity of spaces and equipment to be provided. (p. 7)
In order to determine educational facility needs of a school system, forecasting pupil enrollment becomes essential. The Council of Educational Facility Planners, International (1976) lists essential components for forecasting pupil enrollment as:

1. Population trends of the total school community
2. Birth rates and the number of births
3. Public school enrollment figures
4. Non-public school enrollment figures
5. Holding power of public schools. (p. C-4)

The educational administrator should be aware of the above components and the issues involved in each of them. If done well, the projection of student enrollment may be the basis of deducing the number of sites and buildings required (Boles, 1965).

Appraisal of the Existing Facilities

In order to determine the educational facility needs of any community, there should be plans for maximum use of the present plant (American Association of School Administrators, 1949). The Council of Educational Facility Planners, International (1976) stated conditions which appraisers should examine:

1. Is the facility structurally sound?
2. Is it healthful and safe?
3. Is it efficient to operate?
4. Does it support the program?
5. Is it attractive and comfortable?
6. Is its location convenient for the users?
7. Is its space optimally used?
8. Is it the right size?
9. Can it be modified? (p. C-10)

The appraisal will cover different aspects of educational facilities such as physical, program, site, size, and the degree of utilization.

The National Council on Schoolhouse Construction (1964) said that physical appraisal will be based "Upon the quality of the buildings as
physical structures, upon their suitability from the standpoint of health and safety, and the degree to which they facilitate the attainment of the desired school program" (p. 11). Program adequacy is concerned with how well the spaces can be economically adopted to serve their intended educational functions.

The location of an educational facility is another aspect of appraising existing facilities. Hawkins (1977) suggested:

Present freeways, streets and roads should be evaluated as well as currently developed plans which include additions, changes or modifications in traffic flow patterns for the city. . . . Preferably, streets leading to the school should not be main traffic arteries, and approaches to school sites should not require pupils to cross main traffic arteries, railroad rights-of-way or heavy business and industrial traffic. (p. 6)

Utilization of existing facilities is an objective for facility planners which is not easily reached. The American Association of School Administrators (1967) suggested that "space needs to be fluid, flexible, variable, of multiple use and not restrained by tradition" (p. 57).

When available space is used properly, there is a possibility of providing quality instruction to the learners. The Educational Facilities Planners, International (1976) explained:

The utilization of the educational plant may be expressed in terms of room utilization or student station utilization. Room utilization is usually expressed as percentage relationship between the number of periods per day that rooms are used and the total number of periods all rooms are available for use. Similarly, student station utilization is expressed as a percentage relationship between the number of student stations used and the total number of stations available for use. (p. C-12)

The effort to appraise the existing plant helps a school system to fit usable school property into the projected program. It is through an appraisal that it may be judged whether the existing school plant's adaptability to the needs of the educational program justifies retention
or rejection in the ultimate future plant. The educational administra-
tor, therefore, should make all the arrangements necessary for appraisal
so that, in the end, the rejection or retention of a school property can
be justified.

Long-range Planning

The long-range planning of facilities has become necessary because
of "recent fluctuations in school enrollments, facility standards, and
fiscal resources that have emphasized the need for a structure and a
systematic approach to educational planning" (Saint Louis Research
Consortium, 1976, p. 11). It is the responsibility of the educational
administrator and his staff to project curriculum desires and pupil
enrollments several years into the future to make possible the facilities
which could be needed. One study (Herrick et al., 1956) expressed
that a "primary responsibility of the superintendent and other adminis-
trative staff members is to study and plan continuously for the
future . . ." (p. 7). When a school survey has been conducted by a
survey team, the conclusions reached are recommended to the board of
education by the administrator. The items approved by the board
become the basis for the long-range planning of educational facilities.

Boles (1965) felt that long-range planning should be envisioned
for ten years. He felt that five years may be too short and planning
for more than ten years may be unwise due to rapid changes in society
and uncertainties of population shifts. Whatever steps may be taken
for long-range planning, they "must be consistent with known facts
about the present and future and sufficiently flexible to permit adapta-
tion to meet future developments which can be seen as possibilities but
not predicted as uncertainties (Herrick et al., 1956, p. 83).

Finance and Planning

In order to plan for the present and future educational facilities, there should be a determination of financial resources available to a school district. Regarding financial planning, the National Council on Schoolhouse Construction (1964) cautioned:

The determination of financial resources is often complicated by the availability of many sources of income, by legal limitations on tax rates, by the sale of bonds, and by a need to understand the feelings of the people toward supporting financial proposals which, in many cases, must receive a favorable vote at the polls. . . . An often overlooked aspect of financial evaluation is the financial rating of the district by moneylending institutions. Ratings can be improved often by greater attention to prompt and regular payments and by supplying lending agencies with detailed information about financial resources. Lack of such information generally means poor ratings. (p. 13).

In addition to careful financial planning by the administrator and the board of education to avoid complications, budgeting should be done in advance to insure that funds are available from some source when needed, either from current financing or from funding operations. One study (Engelhardt, Engelhardt Jr., & Leggett, 1956) added:

In budgeting expenditures, advance planning tends to reduce misunderstandings between the board of education and its contracting parties. It assures funds to cover each item of cost as the need occurs. It tends to regularize procedures and project costs from getting out of hand. (p. 153).

Financial planning done in advance could enable school administration to protect every source of income available and to envision some other attainable sources. The results of a school survey could provide valuable information for financial planning.

To summarize this section of the study, a school survey is essential to planning educational facilities. It is a tool which enables planners
of educational facilities to study a community and to gather information concerning the total school-plant needs of a school system, now and in the foreseeable future.

The leadership of the educational administrator during a school survey is essential. It is the administrator who recommends to the board of education the inclusion, if necessary, of a survey consultant to a school-survey team. The position of the administrator as the executive officer of the board of education entitles him or her to be the community's leader in educational affairs. It is his or her responsibility to plan for the necessary steps needed to determine the facility needs of the school system. In the process of conducting a school survey, the educational administrator should have facts which will suggest possible solutions, identify sound solutions, and support these solutions when they are presented to the board of education. When the board has approved the items recommended by the school-survey team, it is the administrator who is to implement the final decisions of the board. The leadership of the educational administrator during a school survey may, therefore, affect the development of educational facilities for worse or better.

**New Building and Major Renovation**

A school building is more than a physical structure in which users are sheltered from the elements of weather. The American Association of School Administrators (1949) expressed it thus:

The schoolhouse is a place for many kinds of learning; the schoolhouse itself is an instrument of education. It can teach children much of beauty, of useful ordering of space, and of possibilities of harmonious living. There is increasing recognition
of the school building as a place that will help children to grow to their best physically as well as mentally; their seeing, posture, nutrition, and every bodily process should be helped toward the ideal by the conditions of life at school. (p. 9)

In addition to the influence a school building may have on the life of a learner, "it represents a major financial outlay which is made jointly by all local taxpayers" (Essex, 1950, p. 20).

The people in the United States are interested in education of their children and thus spend much time, money, and human resources in constructing school buildings. In a report of the American Association of School Administrators, Cooper (1967) said:

Of all the activities in which the American people engage as they live and work together in their local communities, counties, and states, perhaps none expresses in material form so many aspects of our culture as school-building construction. With its roots deeply embedded in the past, the school building is a symbol of ideals of a free, self-governing people. (p. ix)

The value placed on school buildings by the American people is a constant reminder to educational administrators and facility planners that much wisdom and professional skill should be brought to the task of planning. The American Association of School Administrators (1967) pointed out that "if teachers, administrators, and parents want to foster in young people the desire to be daring, to be bold, to try new ways, and to discover the truth, then they must set an example by daring to design buildings which exemplify and embody these aspirations" (p. 20).

The Department of Public Instruction, Michigan State, in 1950 observed that "Good buildings do not just happen. They must be planned carefully and thoroughly" (p. 13). The planning should be an accurate translation of the school program and its requirements.
into building needs. The task involves many steps and procedures.

The American Association of School Administrators (1949) issued the following statement:

School buildings are never built for the past or even for the present. They must be planned and built for the future. Planners of school buildings must be thoroughly informed on the trends in education because trends reveal in part the future. This is not an easy or simple task. . . . School buildings must be planned with a clear recognition of the desirable changes in education which should result from this greater knowledge of the learners, and how these changes should affect the building facilities provided. (p. 14)

The planning of school buildings requires people with different professional skills. Davis (1973) suggested members of the planning team to be composed of:

1. Architect
2. Special educational consultants with expertise in facility planning
3. State department of education personnel with responsibilities for school plant design
4. School board members
5. The Superintendent
6. People in the community
7. Students
8. Teachers
9. Custodians (p. 3)

The study above suggested possible people and groups that may participate in the planning team of a new building. Depending on the project and the size of the school system, the size and the composition of the planning team should be determined by the board of education and the educational administrator (Larson, 1966). Concerning the planning team, the National Council on Schoolhouse Construction (1964) added:

Of course, good school planning involves both educator and architect and numerous others working as a team, each contributing according to individual competencies, but it is important that educational planning be under the leadership of an educator.
rather than an architect. Team planning permits good communications, and promotes economy and high-quality architectural work by insuring the planning of a building designed to meet the needs of the program. (p. 14)

The educational administrator is a key person in all steps taken for a new building program. The American Association of School Administrators (1949) defined the administrator's responsibility as follows:

He is the chief executive officer of all building planning, surveys, and procedures. It is his responsibility to see that capable assistance and special services are provided and smoothly coordinated in carrying out these procedures, or to carry them out himself. In either case, he is called upon for a remarkable degree of scholarship, judgment, tact, and leadership. (p. 23)

When a school-building planning team has been formed, its work starts. The educational administrator should program both time and place so that the team may know when and where to meet. The team deals with the task of educational planning.

Educational Planning

Educational planning is used here to mean "the planning which follows the survey and which is done to produce a statement of the facilities and qualities that a particular proposed building should include (Herrick et al., 1956, p. 104). The steps included in educational planning are a review of school programs, a review of survey reports, a determination of qualitative needs, an assertion of quantitative needs, and a preparation of educational specifications (Boles, 1965; Tonigan et al., 1964).

The review of the school program is essential to sound educational planning. It should include "the experiences to be learned; services
to be rendered; and the organization policies, methods, and instructional materials to accomplish the task" (National Council on Schoolhouse Construction, 1964, p. 14). The review should be thorough with emphasis upon policies so that firm decisions may be reached. Its purpose should be to deal with information so that educational specifications do not become cumbersome and lose their value for architects (Boles, 1965).

The review of the survey reports should be done so that plans for the new building desired may be viewed in the context of its place in the entire long-range plan of the school. The review should be done with reference to such information as the total number of pupils, the budget, the general location, and the size of the site needed for the new building (Boles, 1965).

After a review of the school program and the school survey, the next step should be the determination of quantitative and qualitative needs. The determination of quantitative needs involves calculating the number of different types of rooms and spaces needed for regularly scheduled classes, determination of space requirements for nonscheduled instructional activities, and for administrative and service activities (National Council on Schoolhouse Construction, 1964). In order to ascertain qualitative needs, focus is directed toward the functional details of each room. The qualitative needs are based mainly on value judgments. Boles (1965) stated that landscaping and providing roads, sidewalks, and parking areas belong to qualitative needs.

The development of educational specifications is a "way the
educator can assist the architect in understanding the activities, purposes, relationships and needs related to the proposed facility" (Council of Educational Facility Planners, International, 1976, p. E-4). Viles (1957) cautioned in connection with the development of educational specifications:

This is a phase of the functional planning for which the local administrative staff, teachers, custodians, and others must be responsible. It is a phase that should not be neglected or too long delayed. The educational specifications should be prepared for the plant or building and the various units before the architect is requested or authorized to prepare sketches of these units. The architect should not be expected to do educational planning and is not in a position to design the finish and facilities desired in each room or space until specific needs are outlined. (p. 12)

In developing educational specifications, team effort is called for. The recommendation of members of the team is done by the chief school administrator (American Association of School Administrators, 1949; Fredrickson, 1977; Viles, 1957). The Council of Educational Facility Planners International (1976) added that the educational administrator provides leadership, guidance, and assistance to the working committee throughout the study; evaluates the progress; and interprets the results to the board of education, staff, and the citizens of the community (p. E-3).

Architectural Planning and Construction

The planning and construction of educational facilities are processes which require cooperation among the educational administrator, the community, and the architect. The National Council on School-house Construction (1964, p. 16) indicated:

Throughout the building planning process it is important that the chief educational officer or his appointed local school official
be seen as the building program director. With the beginning of the architectural planning the lead activity role passes to the architect but the educational planners still have parts to play.

The educational administrator and the architect continue to work together in mutual understanding and confidence of each other. Although the architect's major work starts after the approval of educational specifications by the board of education, the educational administrator is still the major advisor on educational aspects that pertain to architectural planning. Regarding the educators' responsibility Larson (1966) summarized:

Education may not become as involved in architectural planning as do architects in educational planning, but they must be able to read the architect's sketches, plans and specifications. They must be able to perceive the physical projection and visualize any discrepancies of the architect's plans with the educational specifications. The educators must be able to sense operational handicaps wherein the physical facilities could inhibit the educational program. They must be able to see the hazards which threaten the health, safety, and welfare of the occupants of the proposed plans. (p. 33)

The advisory status of the educator to the architect on educational aspects should not hinder architectural decisions. There should be a compromise between the educator and the architect so that they can work toward common goals of the best school building possible.

Selection of the Architect

The selection of the architect should be done with care. Viles (1957) stated that "the local board of education should select with care the architects who will be responsible for planning a building to serve the community for the next 50 to 75 years" (p. 20). The board should give consideration to the opinion of the educational administrator who has a professional interest in the selection as his or her
opinion may be helpful to the board in making final decisions (Sumption & Landes, 1957). Castaldi (1977) added that "the chief school officer represents his board and is the client whom the architect serves" (p. 162).

The administrator should not neglect his or her responsibility of assisting the board of education in selecting the right kind of architect. He or she should inform the board of any current change in the procedure of hiring the architect. Boles (1965) expanded on the administrator's responsibility and said:

The administrator locates architects who are interested in the work, leads in developing criteria for the selection of architects, secures information about the architects, perhaps does preliminary screening, arranges interviews and building visits, recommends on the employment of the architect, has legal counsel approve the architect's contract, transmits accumulated information to the architect, arranges for property surveys and soil explorations, arranges for records of all decisions reached in any conferences between school people and the architect (this is a must), recommends on revisions to and acceptance of architectural drawings. . . . (p. 146)

The board of education will rely on professional experience of the educational administrator. The administrator's recommendations of an architectural firm will influence the final decisions of the board.

Architectural Services

School officials sometimes have a misconception of the architectural services. As a result of this misconception, "school districts seldom make full use of the services of an architect because often they do not know what they are entitled to" (Thurston, 1950, p. 22). The board of education may make a wise choice of the architectural firm if the school board members are aware of the firm's services.

Regarding the architectural services Castaldi (1977) clarified:
1. The architect is responsible for architectural programming. He is not responsible for educational specifications.

2. He is responsible for preplanning studies. He is not responsible for making the final choices among the alternatives he may present as possible solutions to the educational problem.

3. He is responsible for preliminary plans, large-scale drawings, and final plans and specifications to be approved by school officials. He is responsible for making architectural changes, at his expense, after final drawings have been approved by the board.

4. He is responsible for bidding and contract award. He is not responsible for the legality of the contracts as to form, or content.

5. He is responsible for the periodic supervision of the construction. He is not responsible for the continuous "on-the-job" supervision unless it is so specific in the contract.

6. He is responsible for all architectural matters related to the acceptance and occupancy of a school.

7. He is responsible for overseeing the correction of defects in construction during the warranty period and acts in the interest of the owner.

8. He is responsible for the selection and installation of all fixed equipment. He is not responsible for the selection and purchase of movable equipment when he is paid only the normal fee. (p. 159–60)

The board of education should be aware of the carefully worded form of agreement between owner and architect prepared by the American Institute of Architects. The board may find it helpful to employ an "attorney who will give legal advice in the negotiation and enforcement of contracts, interpretation of building codes, determination of liability, and various items of a similar nature" (Sumption & Landes, 1957, p. 18).

Construction of a School Building

During this phase of planning a school building, the architectural plans are converted into a building. Although at this stage, the
architect is legally responsible for construction, the contractor is brought into the task and the educational administrator continues to work together with both the architect and the contractor. The administrator's responsibility in contracting for a building construction is summarized by Boles (1965) as follows:

The administrator should transmit the recommendations of the architect to his board of education, along with his own recommendations, and should have the advertisements for bids and all contracts approved by legal counsel. He should make inspection copies of working documents available to prospective bidders in his office or the board's office, at least. He should assist in receiving, opening, reading, tabulating, and analyzing bids, including checking the proficiency and the financial reference of the bidders. He or another designated agent of the board should retain custody of the bids and bid bonds and see that the bonds are returned to unsuccessful bidders. He should expedite the execution of contracts, see that signed copies get to the proper parties, and see that all bidders are notified of contract awards. (p. 166)

When the bids are advertised, an effort should be made by the school board to reach contractors and allow them ample time to prepare their bids. Castaldi (1977) suggested, "a period of about four weeks is allowed, but in less complicated projects two weeks is generally sufficient" (p. 315). He further suggested that at the awarding of the contract, "legal advice be sought at this point to make certain that the document is properly prepared and fully protects all concerned, and that persons signing the contract are legally authorized to do so" (p. 316).

The construction of the new building should be started immediately the contract is let. The contractor should work closely with the architect and no deviation from the plans and specifications should be made without the architect's approval. The responsibility of the
educational administrator is indicated by Boles (1965).

The administrator keeps informed regarding the progress of construction, stays in communication with the architect, helps keep the board informed, advises on change orders, either handles the business affairs connected with construction or sees that they are properly managed, transmits to the board the architect's recommendations on expediting the work, provides for the assembly and custody of building documents, verifies receipt of "as built" documents, perhaps recommends mediators for disputes. . . . (p. 185)

The educational administrator keeps up the flow of communication between the architect and the board during the construction. He or she keeps the board and the public informed of the progress of a building program. The administrator informs the architect of any decision of the board regarding the building construction.

Equipping and Occupying the Building

When the construction is completed and the building is accepted, "the educator assumes the leading role in the planning process even though the architect and engineer will provide some services during the final stage of completing the building project" (National Council on Schoolhouse Construction, 1964, p. 18). This final stage involves furnishing and equipping the building and orientating the staff, pupils, and the community in the use of the building.

Selection of Furniture and Equipment

The planning for a new building is not complete without considering its furniture and equipment. At the initial stage of the planning process, "the location, size, and shape of spaces included in a new school plan should be determined by their educational functions, and likewise the equipment and furniture to be installed in such spaces
should be selected to serve educational purposes" (Engelhardt, Engelhardt Jr., Legget, 1956, p. 141). Strevell and Burke (1959) observed that the "selection of new instructional equipment and furniture and the utilization of available items in the new facility are integral parts in the preparation of educational specifications for a project" (p. 424). In order for a school building to have a conducive atmosphere for learning, care should be taken in the selection of equipment and furnishings. Taylor (1956) expressed:

Many school administrators and school boards realize the importance of suitable furniture and equipment if the school plant is to function efficiently as an educational tool. "So essential is serviceable furniture and equipment for school buildings that great care and precaution should be exercised in its selection and installation. . . ." The use of outmoded furniture detracts from the usefulness and attractiveness of a new building and, what is more important, it may even interfere with the activities of the educational program for which the building was designed. (p. 7)

The educational administrator and the architect should follow sound guidelines for the selection of equipment and furniture. The National Council on Schoolhouse Construction (1964) suggested the following criteria:

1. Program adequacy
2. Aesthetic qualities
3. Color
4. Finish
5. Safety
6. Durability
7. Economy
8. Completeness
9. Cost (p. 18)

The educational administrator should take a leading part to see that there is a proper balance between all the criteria. He or she should see that the right type of equipment and furniture ordered for the new building is received. Although the advice of the architect is
helpful during the selection stage, "the process of specifying and ordering educational equipment and furniture for a new plant is often delegated to the school administrator and his staff" (Strevell & Burke, 1959, p. 424). In his discussion of the administrator's responsibility in the selection of furniture and equipment, Boles (1965) stated:

His would be the responsibility to have and to make available to others many kinds of equipment catalogues; he should visit displays and installations of equipment and see that the staff personnel have opportunities to do so; he should secure and coordinate the recommendations from the staff and from architects; he should decide what is to be specified and what qualities of various products are important enough for inclusion; he should assist in making documents available to bidders for inspection and in securing bids from a number of successes. . . . (p. 202)

When the educational administrator is involved in the selection of furniture and equipment, his or her task is made lighter at the time of occupying the building. The administrator and the staff will have had experience with the equipment and furnishings ready for the time of orientation in the use of the building.

Occupying the Building

When the needed equipment and furniture have been received and installed, the educational administrator "makes arrangements for occupancy" (Boles, 1965, p. 185). In this task, the administrator, the architect, and the board members undertake inspection to make sure that the specifications are complied with. The inspection should be thorough and detailed.

After the inspection the next step is the acceptance of the building by the board of education. This step involves the payment to and release of the contractor (Viles, 1957, p. 40). Orientating the building
users becomes the next step. If the building has been cooperatively planned, the staff, pupils, and community will understand the usefulness of different building features. However, for all the users, "a limited amount of in-serve education can be provided for discussing its various aspects" (National Council on Schoolhouse Construction, 1964, p. 19). During orientation period, the educational administrator may execute some duties himself while others he or she may delegate to members of his staff (Boles, 1965, p. 232).

In summary, the educational administrator is the key person in planning a new building in a school system. He or she initiates plans to study the building needs in a school system. The administrator participates in the development of educational specifications. The administrator's recommendation helps the school board in the selection of the architect. He or she recommends the use of an educational consultant, when needed, to the board.

As the chief executive of the board of education, the administrator should be familiar with laws of his or her state which relate to a new building program. The administrator informs the architect on educational aspects pertaining to school buildings. It is the administrator who also informs the school board of architectural aspects of a school building.

The educational administrator, on behalf of the board, gives reports to the community about the progress of the building program. The administrator participates in the selection of furniture and equipment for a new building. The final inspection of the new building is done by the team in which the administrator is a member. The
orientation of the staff, pupils, and community in the use of the new building may be done by the administrator and/or his appointee from the staff.

Renovation

Renovation is a term used in planning facilities and it means to renew or repair. A school building may be improved or restored to its original state by renovation. The planning process for a building renovation is similar to that of a new building. The educational administrator takes a leadership role in planning for the renovation of a school building. It is the responsibility of the educational administrator to suggest and plan for the evaluation of the existing school buildings (Davis, 1973). In 1975 the New Hampshire State Department of Education stated in its Manual for Planning and Construction of School Buildings that "the decision to renovate or remodel an existing school building must be based on a realistic evaluation of the facilities in the light of the present requirements for education" (p. 29).

In renovations, "a comprehensive study of all aspects of the problem is a necessary first step" (Castaldi, 1977, p. 329). It is suggested that an architect be employed at the beginning to help the planning team to determine how the needs of the school system can be met. With the help of the architect, the team should make a thorough inspection of the school building which is to be renovated. Those who use the building, particularly the teachers, the pupils, and the community, should be involved in the planning as much as possible. The American Association of School Administrators (1952) added that "if economy is to be achieved in school planning the educator must take
an active part in the planning" (p. 5).

Renovations, like any other project in the planning process of educational facilities, take time, money, and human resources.

Domke (1975) observed:

Any project consists of so many jobs or activities. All jobs cost something and the cost of the project will vary with the time taken to do the jobs. Since these three commodities—jobs, cost, and time—are always interrelated, one aim of management is to bring about the best arrangements of job, cost, and time to produce a desired result. (p. 19)

In order to produce the desired result, Domke suggested three phases which should be followed in renovation:

Planning Phase:
1. Develop the plan
2. Involve the architect
   a. Site visits
   b. Conferences
   c. Prelim drawings
   d. Approvals

Design Phase:
1. Final drawing and specification
2. Approval
3. Bidding
4. Contracts

Construction Phase:
1. Organize work force
2. Shop drawings
3. Material approvals
4. Change orders
5. Clean up (p. 20)

The educational administrator is involved in all three phases mentioned above. In the planning phase, the administrator is involved with the architect and other members of the planning team during site visits to "gather the basic data relating specifically to the site under consideration and the surrounding areas" (Chiara & Koppelman, 1978,
The administrator arranges for when and where the planning team may hold conferences. Boles (1965) summarized the first phase by stating that "in 'getting organized' the superintendent, as educational leader, must be personally involved" (p. 7). His or her involvement is vital because from the initial planning stage, "one person here-in designated as the planner, should be continually aware of all existing plans and all proposed changes and suggestions and should be in a position to coordinate the many details involved" (The Community College Planning Center, 1966, p. 11).

The design phase has activities which require a united effort of the planning team. During renovations, Lyon (1975, p. 30) suggested that school administrators should allow their maintenance staff to be part of the design team because unlike new construction, the total available space is usually already rigidly defined. When the educational administrator together with the consultant and the staff have checked the final architectural drawings and specifications, he or she recommends that the board should give its consideration and approval (Herrick et al., 1956, p. 156).

The educational administrator continues partnership with the architect through the construction phase of renovation. Pierce (1959) expressed that "architect-educator coordination is absolutely essential to provide spaces which are based on the educational program" (p. 5). The administrator receives all necessary change orders, requests for payments to contractors, and reports of the project's progress from the architect, and he or she transmits these details to the board of education (Herrick et al., 1956).
The educational administrator may not personally be involved in every step of the three phases of renovation. The administrator may delegate duties to a subordinate who is directly responsible to him or her. Summarizing the planning process of renovations, MacConnell (1957) added:

Throughout the planning process the responsibilities of the members of the planning team vary with the involvement of the project. However, the major responsibility is carried by the school administrators, teachers, and consultants who survey the total situation and determine the procedure to achieve maximum results. (p. 150)

**School Maintenance**

One of the factors which may affect the function of a school building as a learning environment is maintenance. Linton (1958) said, "Since education takes place in a building and on school grounds, the degree of educational opportunity cannot help but be influenced by the type of building and ground facilities provided and the condition in which they are maintained" (p. 298). The only way to keep educational facilities from inhibiting the learning of children is "to keep these structures functional, attractive, and economical to operate; the ideal is to keep them ageless, the realistic, to maintain status quo and decay" (Weber & Finchman, 1974, p. 75).

The maintenance of a learning environment gives practical experience to students. Through maintaining school facilities the students learn that cleanliness is an essential part of life. As the students learn by using functional facilities, they realize the benefit of caring for possessions whether they are their own or the public's. Davis (1973) stated:
A school building is an educational tool and it should be maintained to give its most effective service in the learning process. If it is well kept and well repaired, appearance helps to create an ideal environment for students and conveys to them a feeling that schools are most important factor in their lives. Then any amount of effort and concentration of quality plant maintenance will be of inestimable value. (pp. 150-51)

When planning educational facilities, their maintenance should be put into account right from the beginning. The costs of maintenance are influenced by the quality of materials used for building and the type of equipment and furniture installed. Testa (1975) explained: "The relationship between initial and maintenance costs for a given element is usually such that high quality means low maintenance, and, therefore, this point should be carefully analysed when planning a building program, in order to avoid false economies" (p. 182). Baker and Peters (1963) expressed the value of maintaining educational facilities and the challenge such maintenance offers to planners as follows:

Maintenance is a vital factor whenever buildings and equipment are involved. Planned maintenance is the act of keeping plant and equipment in good condition by organized methods. This serves to protect the original capital investment and provide the optimum use for which the facilities were designed. Maintenance of facilities of a school district presents a greater challenge than maintenance in most any other type of operation. This is because the occupancy of school facilities is made up of young people with a great deal of vitality and energy, who cause much wear and tear on buildings and equipment, in addition to normally expected weathering and obsolescence. (p. 43)

The maintenance program in a school system is not simple. It requires "an organization capable of emergency, preventive and corrective work on a wide variety of structures and systems" (Weber & Finchman, 1974, p. 75).
Recruitment of Maintenance Personnel

The recruitment of maintenance personnel should be done in accordance with the regulations set by the board of education. Hill and Colmey (1968) declared that "a clear statement of school board policies should be the starting point in determining a plan for assigning custodial personnel in a school district" (p. 31).

The hiring of maintenance personnel is the responsibility of school superintendents and principals depending on the size of the school system (Brainard, 1961). The criteria for hiring may vary in school systems even though, "generally speaking, it is desirable to obtain the most competent, best trained, most ambitious, most moral, most cooperative, most pleasant, neatest, most interested, healthiest, etc., person available to fill a job" (Baker & Peters, 1963, p. 30).

Additional information on hiring maintenance personnel was given by Castaldi (1977):

The central administration establishes the qualifications for hiring custodial personnel. It conducts the search for qualified candidates for existing vacancies, and sets up a screening procedure to identify the best candidates. In many districts, the final selection is made jointly by the central administration and the school principal where the vacancy exists. (p. 359)

Maintenance and Operation Budget

The operation and maintenance of school buildings need funds. The financial plan of a school system should include the budget for a maintenance program. The financial plan of a school district should aim at developing "sound budgets to support worthwhile programs, rather than to tailor programs to fit allocations" (Weber & Finchman, 1974, p. 39). Bakers and Peters (1963) added:
Budgetwise, school plant operations and maintenance rank next to teacher's salaries. . . . Aside from financial aspects, school plant operations and maintenance programs are important because of their relation to the educational program. A child learns from his total environment, and certainly his learning will be influenced by the condition of the physical plant. (p. 13)

The administration of school system, therefore, should supply sufficient funds for the maintenance program. With the funds, equipment and supplies that assist maintenance personnel in their services will be purchased. The responsibility of purchasing supplies for maintaining educational facilities may fall to different people depending on the size of school system. Castaldi (1977) stated that:

The selection and proper use of cleaning agents is usually the responsibility of the superintendent of buildings or the director of plant operations in large school districts. In smaller school districts, however, this function is often delegated to the head custodian of the building. (p. 361)

The Custodian's Relations with Others

A school custodian is in constant contact with teachers and school auxiliary staff during school hours. The custodian, therefore, should be a person "who is tolerant of others, who uses good common sense, and who understands what is expected of him as a public employee [and] should be able to avoid many misunderstandings that might lead to unpleasantness" (Linn, Helm and Grabarkiewicz, 1948, p. 5).

The educational administrator should consider a custodian as a coworker. It has been asserted by educational administrators that they would rather lose the best teacher in their school system than to lose their best custodian (Brainard, 1961; Linn et al., 1948).

The educational administrator should encourage teachers and pupils to cooperate with custodians. On this issue Davis (1973) said:
Students and teachers must feel they are part of the learning environment and have responsibility in the keeping of the building safe, clean, and attractive. Teachers should be given this responsibility of seeing that their teaching and learning areas are free from unnecessary debris thrown carelessly by students. It will normally take a minute or two of the class time for students to clean up floor, desk, table, or special areas. It is a simple contribution to ecology and fosters good citizenship habits. (p. 120)

The cooperation of teachers and pupils in school maintenance may make it possible for custodians to carry out preventive maintenance programs. The custodian will from time to time thoroughly maintain all educational facilities. The support from the administrator and the cooperation of teachers and pupils will encourage maintenance personnel to serve with a feeling that they are a part of the school system.

The Custodial Schedule

The work of a school custodian involves many and various duties required of him or her. Hence, the school custodian should have a work schedule to know what to do and when to do it. Pierce (1959) said, "it is strongly suggested that a cooperative program of schedule making between the administrator and the custodians will produce desirable results" (p. 93). Scheduling custodial work is critical to effective custodial service. Cooperative scheduling effort is further suggested by Hill and Colmey (1968, p. 38) as follows:

When school board policies are determined and building staffs are assigned, it becomes the responsibility of the school principal to determine schedules for the building staff themselves, with the head custodian playing an important role.

The custodial schedule should be checked at regular
intervals in order to change with the conditions. The schedule should be followed so that no confusion may arise between the custodian and the other school citizens.

Energy Conservation

The conservation of energy is an aspect of school maintenance which needs attention from the educational administrator. Council of Educational Facility Planners (1977) indicated that school systems should develop a comprehensive energy conservation program because:

1. It can provide the board of education with a means of retrieving valuable tax dollars that are wasted by inefficient energy use.

2. It can provide the board of education with a means for alleviating the impact of the energy crisis on schools.

3. It can provide the board of education with a means of enhancing communication and cooperation among the state department of education, the local community and the education personnel (Section B).

The Council further recommended that the chief administrator be a member of the energy management committee so that he or she can support the committee’s resolutions and recommend them to the board. The educational administrator should solicit the cooperation of students and teachers to conserve energy in the school buildings. He or she should provide financial support and give instruction to the heating engineers to keep the equipment clean and in operation. The administrator should be knowledgeable of a variety of ways in which to assist the school system in reducing expenses through energy conservation.

In summary, the maintenance of educational facilities is an integral part of the planning process. During the planning process of educational facilities, the administrator should recommend to the
board of education the inclusion of maintenance personnel in the planning team. The administrator should also recommend to the board the allocation of sufficient funds for the maintenance and operation of educational facilities.

The policies for hiring custodians should be prepared by the office of the educational administrator. The administrator should encourage the cooperation between teachers, students and custodians in the maintenance of school buildings. The educational administrator should take an active part to see that energy is conserved in school buildings.

Chapter Summary

Chapter II was a review of literature to investigate the responsibility of the educational administrator for planning educational facilities. Literature revealed that as early as 1642 when the Massachusetts law for education was offered, educational administrators had leadership in planning facilities in the United States.

It was discovered that American people have pride in their educational facilities and that school buildings are a means of service to the community and its children. Literature showed that the educational administrator as a professional and chief executive officer of the school board was the only one who has had the opportunity and who has assumed the duty of studying the whole field of education and his or her local community with the ultimate goal of adjusting one to the other.
The Administrator's Responsibility in General School Survey

In any size of school system, large or small, there should be certain studies and certain decisions that should put every planned educational facility into its perspective within the master plan of the entire school system based upon a complete survey of the whole territory served.

1. The educational administrator should determine community and educational needs and desires for the future and then crystallize into material form plans that will meet those needs (Herrick, et al., 1957).

2. The educational administrator should coordinate the activities of members of the survey team. He or she should lead in identifying and understanding the responsibility and authority of all participants. He or she should see that proper steps are taken so that adequate time is provided (American Association of School Administrators, 1949).

3. The educational administrator should work with parents, teachers, and students in conducting a school survey (Thrasher, 1973).

4. The educational administrator should recommend the inclusion of a survey consultant for the survey team (Boles, 1965).

5. The educational administrator should present the findings of the survey team on the needs of the school system to the board of education (Boles, 1965).

6. The educational administrator should know the financial ability of his or her school district community (NCSC, 1964).

7. The educational administrator should lead the discussion of the educational philosophy with the staff, the board of education, and the interested public (Boles, 1965).
8. The educational administrator should recommend adoption of the reports of the school survey to the school board and he or she should see that long-range plans are developed (Herrick, et al., 1956).

9. The educational administrator should arrange for his or her staff and board members to visit other school districts to improve the educational facilities of their own school district (McCracken, 1969).

10. The educational administrator should be acquainted with information concerning population shifts (Council of Educational Facility Planners, International, 1976).

11. The educational administrator should determine plans for maximum use of the existing school plant (AASA, 1949).

12. The educational administrator should continually review comprehensive surveys and should keep abreast with changing needs of his or her community (Herrick et al., 1956).

The Responsibility of the Educational Administrator in Planning New Buildings and Renovations

1. The educational administrator should select a planning item for a new building program. The team should be composed of the best personnel that circumstances should permit, every member of which recognizes his or her responsibility to the educational administrator for a certain portion of the work to be done (Davis, 1973, Lason, 1966).

2. In the selection of the architect, the board of education should assume the full responsibility. The educational administrator should assist the board in deciding on the method of choosing the architect and formulate definite specifications for architectural services. The educational administrator should act in an advisory capacity to the
board in the selection of the architect (Sumption and Landes, 1957, viles, 1957).

3. The educational administrator should take an active leadership in the development of educational specifications. He or she should select an educational consultant, when needed, to work with the planning team (Council of Educational Facility Planners, International, 1976; Fredrickson, 1977).

4. The educational administrator should review the architectural plans with the architect (CEFPI, 1976; Castaldi, 1977).

5. The educational administrator should inform the school board about the architectural aspects of the new building under construction (Larson, 1966).

6. The educational administrator should be involved in the selection of the school site and its development utilizing consultants where necessary (Boles, 1965; CEFPI, 1976).

7. The educational administrator should ensure that there is agreement with board members on proceedings in the planning process for the new building (Leu, 1965; NCSC, 1964).

8. The educational administrator should assist the architect in advertising for bids and obtain legal counsel on contracts (Boles, 1965).

9. The educational administrator should monitor the progress of the building program (Boles, 1965; Castaldi, 1977).

10. The educational administrator should be involved in the acceptance and opening of the new building structure. The educational administrator should make plans for the orientation of staff, pupils, and community in the use of the new building (Boles, 1965; Viles, 1957).
11. The educational administrator should inform the community about the progress of a building program (AASA, 1949).

12. The educational administrator should make plans for renovating school buildings. He or she should organize the planning team and arrange studies to assess the needs for any renovations in the school system (Chiara and Koppelman, 1978; Davis, 1973).

**The Administrator's Responsibility in Maintaining Schools**

1. The educational administrator should recommend to the board of education an allocation of funds for the maintenance needs of the school system (Weber & Finchman, 1974).

2. The educational administrator and his or her staff should develop criteria for the hiring of maintenance personnel (Brainard, 1961).

3. The educational administrator should encourage cooperation between teachers and custodians (Davis, 1973; Linn et al., 1948).

4. The educational administrator should encourage the custodial personnel in the development of a work schedule (Pierce, 1959; Hill and Colmey, 1968).

5. The educational administrator should appoint an energy conservation committee. He or she should ensure that plans for energy conservation are included in any new construction programs. The educational administrator should promote energy conservation involving students and staff (Council of Educational Facility Planners, 1977).

The literature reviewed indicated that the educational administrator is a key person in the planning process of educational facilities. The educational administrator is the coordinator of the efforts of various groups involved in the planning process.
CHAPTER III

PROCEDURES FOR THE STUDY

The purpose of this study was to determine the educational administrator's responsibility for facility planning as seen by the public-school superintendents and the private-school principals in southwestern Michigan. In order to accomplish an adequate treatment of the problem, essential elements of the administrator's responsibility for planning educational facilities were identified.

It was assumed that the essential elements of the responsibility of the educational administrator could be identified through a review of literature and a survey of how educational administrators see their responsibility for facility planning. This chapter describes the procedures used for determining the administrator's responsibility. The particular steps were:

1. The review of literature
2. The use of the chosen instrument
3. The gathering of the necessary data
4. The tabulation and analysis of data
5. The identification of the essential elements.

Review of Literature

An extensive review of literature was undertaken in an attempt to trace the educational administrator's responsibility for planning
educational facilities. The historical development of the responsibility in the United States and southwestern Michigan was especially investigated. The concepts obtained from the literature formed a basis for identifying the essential elements. This review was accomplished by using the facilities of the James White Library and of the Educational Facility Planning Laboratory, both at Andrews University.

Instrument Used

The literature reviewed on the responsibility of the educational administrator for facility planning plus consultation with the major advisor of this study provided the basis for adopting the instrument used. The instrument was originally designed by Evans (1954), University of Nebraska (Lincoln, Nebraska). It was developed to survey the skills and information required by the superintendents to carry out their responsibility for facility planning. The areas of conducting school surveys, planning new or renovating old school buildings, and maintaining schools, in which the educational administrator is involved, were investigated. The responses from the administrators were tabulated and percentages computed. These formed the basis for the descriptions and summaries given in determining skills required in the areas surveyed.

Although Evans' study was done in 1954, current literature reviewed for the present study revealed that the concepts dealt with are still valid (Boles, 1965; Castaldi, 1977; Davis, 1973; Leu, 1965). These studies dealt with similar areas that were considered by Evans. The instrument was validated by Evans and therefore considered appropriate for use in the present study. Some minor modifications were made in
phraseology to enhance clarity and grammatical structure. Several items were deleted to avoid duplications. Evans' study further provided the major organization for the present study in that the elements gleaned from the related literature and the responses were compiled under his divisions of the school survey, new building and major renovation and school maintenance.

The instrument has four descriptors: "unimportant," "desirable," "essential," and "undecided." Educational administrators were asked to indicate, using these descriptions, the values they placed on the items given. The instrument as revised and used in this study is presented in appendix A.

**Gathering of Data**

Contact was made with the Berrien, Cass, and Van Buren Intermediate School Districts requesting their educational directories (1978-79). Appointments were made by telephone to visit the private-school principals and the public-school superintendents listed in the directories.

A structured interview was held with each administrator visited. The data gathered and analyzed formed the basis for identifying essential elements of the administrator's responsibility for planning educational facilities. The number of public- and private-school administrators visited is shown in table 1.

**Tabulation and Analysis**

The administrators were grouped into three categories for comparison. The first grouping was by the system in which they were employed--public or private--as shown in table 2.
# TABLE 1

**DISTRIBUTION OF SCHOOL ADMINISTRATORS VISITED**

<table>
<thead>
<tr>
<th>School System</th>
<th>Total Number of Administrators</th>
<th>Number of Administrators Visited</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Public</td>
<td>34</td>
<td>33</td>
<td>97</td>
</tr>
<tr>
<td>Baptist</td>
<td>2</td>
<td>2</td>
<td>100</td>
</tr>
<tr>
<td>Adventist</td>
<td>10</td>
<td>8</td>
<td>80</td>
</tr>
<tr>
<td>Catholic</td>
<td>6</td>
<td>5</td>
<td>83</td>
</tr>
<tr>
<td>Lutheran</td>
<td>14</td>
<td>13</td>
<td>93</td>
</tr>
<tr>
<td>Christian</td>
<td>2</td>
<td>2</td>
<td>100</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>68</strong></td>
<td><strong>63</strong></td>
<td><strong>93</strong></td>
</tr>
</tbody>
</table>

# TABLE 2

**SCHOOL ADMINISTRATORS BY CATEGORIES**

<table>
<thead>
<tr>
<th>School Category</th>
<th>Administrators Visited</th>
<th>Percentage of Total Visited</th>
</tr>
</thead>
<tbody>
<tr>
<td>Public</td>
<td>33</td>
<td>52</td>
</tr>
<tr>
<td>Private</td>
<td>30</td>
<td>48</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>63</strong></td>
<td><strong>100</strong></td>
</tr>
</tbody>
</table>
The second grouping compared the public, private, and the combined system. The third grouping of administrators was by years of experience in administration and by the courses they had taken in planning educational facilities.

Tables were prepared for each category, presenting two columns of percentages. The first column indicated the percentage of educational administrators who ranked items as "desirable," and the second column for items ranked as "essential."

An additional table was prepared, in a convenient form for comparison, indicating "essential" ratings by private- and public-school administrators. An attempt was made to clarify trends and directions indicated by the data. A summary table for "essential" ratings is displayed in appendix B.

Those items in section A were judged as essential by at least 60 percent of the respondents. Those in section B were judged as "essential" by 40 percent to 59 percent of the respondents. The items in section C were judged as "essential" by less than 40 percent of the respondents (Kerlinger, 1973).

It was considered that those items listed in section A were judged by the respondents as being part of the administrator's responsibility; those in section B show lack of agreement as to whether or not this is part of his or her responsibility; and those in section C as being no part of his or her responsibility.
Identification of Essential Elements

The review of literature, the data gathered from the educational administrators in southwestern Michigan and analyzed, in addition to experiences gained by personal visits with the administrators, provided the basis for identifying essential elements of the educational administrator's responsibility for planning facilities. The essential elements were presented in chapter V.

Summary

The purpose of chapter III was to describe the procedures used to determine the responsibility of the educational administrator for planning educational facilities. The particular steps described were the literature reviewed, the instrument, the data gathering, the data analysis, and the identifying of the essential elements.
CHAPTER IV

DATA PRESENTATION AND ANALYSIS

The purpose of this chapter was to present and analyze the data gathered from thirty private-school principals and thirty-three public-school superintendents. The data related to what administrators considered to be essential or desirable for their responsibility in facility planning. Comparison was made between the response from private- and public-school administrators.

Tables were prepared according to the following groupings of administrators: private schools, public schools, and combined private and public schools. For the purpose of comparison another table was compiled showing percentages for "essential" responses of both public- and private-school administrators. Additional tabulations were also presented for administrators' years of experience, and percentages for administrators by courses taken.

Private Schools

Thirty private-school administrators participated in this study. They were interviewed using the questionnaire as a guide.

Table 3 presented the percentages of the administrators according to their "desirable" and "essential" responses to the individual items. The administrators (97 percent) agreed it was
<table>
<thead>
<tr>
<th>Item</th>
<th>Desirable</th>
<th>Essential</th>
</tr>
</thead>
<tbody>
<tr>
<td>The educational administrator should be involved in:</td>
<td></td>
<td></td>
</tr>
<tr>
<td>1. Plans for the educational program needed by the community</td>
<td>3</td>
<td>97</td>
</tr>
<tr>
<td>2. Planning with the board of education</td>
<td>3</td>
<td>97</td>
</tr>
<tr>
<td>3. Preparing statements on the school's function in the community</td>
<td>13</td>
<td>83</td>
</tr>
<tr>
<td>4. Long-range planning</td>
<td>17</td>
<td>83</td>
</tr>
<tr>
<td>5. Considering acceptable standards of school buildings</td>
<td>27</td>
<td>73</td>
</tr>
<tr>
<td>6. Considering facility needs of different age groups</td>
<td>30</td>
<td>70</td>
</tr>
<tr>
<td>7. Relationships with parents, teachers, and pupils</td>
<td>37</td>
<td>63</td>
</tr>
<tr>
<td>8. Determining room requirements for educational program</td>
<td>37</td>
<td>63</td>
</tr>
<tr>
<td>9. Formulating educational philosophy for the community</td>
<td>30</td>
<td>60</td>
</tr>
<tr>
<td>10. Considering about traffic problems in relation to sites</td>
<td>37</td>
<td>53</td>
</tr>
<tr>
<td>11. Assessing the financial ability of the community</td>
<td>43</td>
<td>50</td>
</tr>
<tr>
<td>12. Considering local transportation problems</td>
<td>43</td>
<td>50</td>
</tr>
<tr>
<td>13. Continuous revision of school survey</td>
<td>50</td>
<td>43</td>
</tr>
<tr>
<td>14. Acquiring information about population shifts</td>
<td>30</td>
<td>40</td>
</tr>
<tr>
<td>15. Considering maximum distances children should travel</td>
<td>47</td>
<td>40</td>
</tr>
<tr>
<td>16. Ensuring the maximum use of school plant</td>
<td>60</td>
<td>37</td>
</tr>
<tr>
<td>17. Considering sites for new schools, including costs</td>
<td>40</td>
<td>30</td>
</tr>
<tr>
<td>18. Presenting a building program to the community</td>
<td>53</td>
<td>27</td>
</tr>
<tr>
<td>19. Plans for the use of survey consultants</td>
<td>53</td>
<td>20</td>
</tr>
<tr>
<td>20. Visiting other schools to review school planning technique</td>
<td>73</td>
<td>20</td>
</tr>
</tbody>
</table>
"essential" that they should be involved in planning for the educational program which should serve the needs of their community. Another 97 percent of the administrators indicated as "essential" that they should work together with the school board during a school survey. The administrators expressed their opinions during the interview that a school survey would not accomplish its purpose if the school board members were not involved. Preparation of a statement showing the school's function in its community was regarded by 83 percent of the administrators as an "essential" element of their responsibility.

The administrators (83 percent) saw that their participation in the long-range planning of educational facilities was "essential." While 73 percent of the administrators felt that it was "essential" for them to consider acceptable standards of school buildings during a school survey, 27 percent felt that the item was "desirable." Considering facility needs of different age groups of children was indicated as "essential" by 70 percent of the administrators. The administrators pointed out during the interview that it was their duty to see that each age group of children had facilities suited for its level of learning. Parents, teachers, and pupils could render helpful information to facility planners. Working with this group was considered as "essential" by 63 percent of the administrators. Sixty percent of the administrators supported their involvement in formulating educational philosophy of their community as "essential." In talking with these administrators, it was learned that they considered educational philosophy of a community as the basis for determining the
types of school programs which should be offered. It was noted that the items considered by less than 40 percent of the educational administrators as "essential" were regarded as "desirable" by over 40 percent of the administrators.

During the interviews, the administrators expressed that their concern for these areas could be carried out by their subordinates who would be delegated the responsibility.

The lowest "essential" rating was given by the administrators for their involvement in visiting other schools to review school planning techniques and also in planning how the school system could use survey consultants. The administrators interviewed stated that the use of survey consultants would depend on the nature of the survey to be undertaken.

Table 4 dealt with the administrator's responsibility in planning for a new building or major renovations. Eighty-seven percent of the respondents rated their involvement in forecasting pupil enrollment and orienting the staff in the use of a new building as "essential." The administrators (83 percent) felt it was "essential" that they should identify the types of rooms needed in a new building, and also be involved in the recommendation of the sizes of these rooms within state guidelines. Eighty percent of the respondents saw that it was "essential" to be involved in the consideration of facts about building codes, school laws, and government permits for a new program. They also felt that they should be involved in answering questions and criticisms from the public concerning a building program and in plans for building renovations. Planning for
TABLE 4

NEW BUILDINGS AND MAJOR RENOVATION
(Percentages of Private-School Administrators)

<table>
<thead>
<tr>
<th>Item</th>
<th>Desirable</th>
<th>Essential</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Forecasting pupil enrollment</td>
<td>13</td>
<td>87</td>
</tr>
<tr>
<td>2. Orientating the staff in the use of a new building</td>
<td>10</td>
<td>87</td>
</tr>
<tr>
<td>3. Specifying the types of rooms needed</td>
<td>17</td>
<td>83</td>
</tr>
<tr>
<td>4. Recommending room sizes within state guidelines</td>
<td>17</td>
<td>83</td>
</tr>
<tr>
<td>5. Considering facts about the building codes, school laws, governmental permits, etc.</td>
<td>13</td>
<td>80</td>
</tr>
<tr>
<td>6. Answering questions and criticisms from the public</td>
<td>17</td>
<td>80</td>
</tr>
<tr>
<td>7. Plans for building renovations</td>
<td>20</td>
<td>80</td>
</tr>
<tr>
<td>8. Planning for flexibility in the use of school plant</td>
<td>20</td>
<td>73</td>
</tr>
<tr>
<td>9. Developing educational specifications</td>
<td>27</td>
<td>70</td>
</tr>
<tr>
<td>10. Presenting, with the school board, building campaign to the community</td>
<td>27</td>
<td>70</td>
</tr>
<tr>
<td>11. Specifying building equipment and furnishings</td>
<td>33</td>
<td>70</td>
</tr>
<tr>
<td>12. Considering safety factors such as exits</td>
<td>27</td>
<td>70</td>
</tr>
<tr>
<td>13. Informing the architect on educational aspects</td>
<td>30</td>
<td>53</td>
</tr>
<tr>
<td>14. Informing the school board on architectural aspects pertaining to schools</td>
<td>30</td>
<td>53</td>
</tr>
<tr>
<td>15. Acquiring information about the taxing capacity of the community</td>
<td>30</td>
<td>50</td>
</tr>
<tr>
<td>16. Assessing the community's feeling about the resultant design</td>
<td>47</td>
<td>50</td>
</tr>
<tr>
<td>17. Seeking legal advice for a building program</td>
<td>27</td>
<td>47</td>
</tr>
<tr>
<td>18. Selecting educational consultant, when needed</td>
<td>50</td>
<td>43</td>
</tr>
<tr>
<td>19. Securing specific building materials and color selections desired</td>
<td>50</td>
<td>40</td>
</tr>
<tr>
<td>20. Making regular reports to school board and community on the progress of a building program</td>
<td>50</td>
<td>40</td>
</tr>
<tr>
<td>21. Getting approval of government agencies on various stages of the contract</td>
<td>37</td>
<td>40</td>
</tr>
<tr>
<td>22. Financial planning for a building program</td>
<td>43</td>
<td>40</td>
</tr>
<tr>
<td>23. Organizing community planning groups</td>
<td>30</td>
<td>33</td>
</tr>
<tr>
<td>24. Hiring an architect</td>
<td>30</td>
<td>20</td>
</tr>
<tr>
<td>25. Drawing up contracts with the architect</td>
<td>37</td>
<td>10</td>
</tr>
<tr>
<td>26. On-site supervision during construction</td>
<td>40</td>
<td>10</td>
</tr>
<tr>
<td>27. Advertising and securing bids for a building</td>
<td>33</td>
<td>10</td>
</tr>
<tr>
<td>28. Drawing up contracts with the contractor</td>
<td>43</td>
<td>3</td>
</tr>
</tbody>
</table>
flexibility was considered as an "essential" element of their responsibility by 73 percent of the administrators. Seventy percent of the administrators indicated that it was "essential" to be involved in developing educational specifications, to work with the board of education in explaining a building campaign to the community, and to specify building equipment and furnishings needed. The administrators felt that they should participate in facility planning teams and help in developing at this time educational specifications since facilities are planned to meet the needs of educational programs desired by schools.

The data showed that informing the architect concerning educational aspects and the school board concerning architectural aspects pertaining to schools was seen by 53 percent of the respondents as an "essential" part of their responsibility. Fifty percent of the respondents indicated as "essential" that they should be involved in acquiring information about the taxing capacity of their community, and in assessing the community's feeling about the resultant design of the building program. It was noted that 50 percent of the respondents showed as "desirable" their involvement in selecting an educational consultant when needed and in selecting specific materials and colors desired, whereas these items were considered as "essential" by only 40 percent of the respondents.

Table 5 presented the administrator's responsibility in maintaining school facilities. The administrators (77 percent) rated as "essential" their involvement in periodic inspection of the school buildings and playgrounds. They expressed, during the interview,
The educational administrator should be involved in:

1. Periodic inspection of school buildings and playgrounds 23 77
2. Coordinating teachers'/pupils' cooperation with the custodians 17 77
3. Continuous improvement and repair programs 43 57
4. Planning for projects such as window washing, room painting, etc. 43 57
5. Selecting and hiring a custodian 40 50
6. Plans for energy conservation 50 50
7. Plans for day-to-day repair problems that may arise 40 50
8. Long-range plans for maintenance problems such as footing, chimney repair, etc. 40 50
9. Coordinating custodian's schedule and its execution 43 47
10. Training and indoctrinating custodians 47 43
11. Securing equipment for custodian's needs 40 33
12. Preparing pay schedule for custodial help 37 33
13. Financing repair programs 37 30
14. Providing for removal of waste 53 17
15. Providing information about the latest methods and equipment in the field of maintenance 50 13

that the task of going around the school facilities was helpful in detecting any damages and need for improvement that may be overlooked by the maintenance crew. The respondents also showed agreement among them, by 77 percent, that they should be involved in the coordination of teachers'/pupils' cooperation with the custodians. The administrators explained that they have to support the custodians if any cooperation is expected from the teachers and students. While
43 percent of the respondents indicated as "desirable" their involvement in improvement and repair programs and also in planning for projects requiring constant attention such as window washing and room painting, 57 percent showed that these items were "essential."

It is noted that involvement in plans for energy conservation, both "desirable" and "essential," were rated at 50 percent by the administrators.

Involvement in plans for day-to-day repair problems which may arise, and in long-range plans for maintenance problems such as foot ing, chimney repairs, etc., were shown as "desirable" by 40 percent and "essential" by 50 percent of the administrators. It was noted that 50 percent of the administrators considered as "desirable," but only 13 percent as "essential," their providing information to the maintenance group about the latest methods and equipment needed.

Public Schools

There are thirty-three public-school administrators who participated in this study. This group formed 52 percent of all the participants.

Table 6 indicated the percentages of the respondents for each item in the action dealing with conducting the school survey. The administrators gave their highest "essential" rating of 94 percent to their involvement in planning the educational program needed by their community and to their working with the school board during a survey. These two items were also given the highest "essential" rating by private-school administrators. There was agreement among 84 percent of the respondents that it was "essential" they should be
TABLE 6
SCHOOL SURVEY
(Percentages of Public-School Administrators)

<table>
<thead>
<tr>
<th>Item</th>
<th>Desirable</th>
<th>Essential</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Plans for the educational program needed by the community</td>
<td>6</td>
<td>94</td>
</tr>
<tr>
<td>2. Relationships with the board of education</td>
<td>3</td>
<td>94</td>
</tr>
<tr>
<td>3. Preparing statements on the school's function in the community</td>
<td>15</td>
<td>84</td>
</tr>
<tr>
<td>4. Long-range planning</td>
<td>12</td>
<td>85</td>
</tr>
<tr>
<td>5. Assessing the financial ability of the community</td>
<td>12</td>
<td>85</td>
</tr>
<tr>
<td>6. Application of information about population shifts</td>
<td>15</td>
<td>79</td>
</tr>
<tr>
<td>7. Formulating educational philosophy for the community</td>
<td>27</td>
<td>73</td>
</tr>
<tr>
<td>8. Considering facility needs of different age groups</td>
<td>21</td>
<td>73</td>
</tr>
<tr>
<td>9. Considering sites for new schools, including costs</td>
<td>21</td>
<td>70</td>
</tr>
<tr>
<td>10. Considering acceptable standards of school buildings</td>
<td>27</td>
<td>67</td>
</tr>
<tr>
<td>11. Presenting a building program to the community</td>
<td>24</td>
<td>67</td>
</tr>
<tr>
<td>12. Relationships with parents, teachers, and students</td>
<td>23</td>
<td>64</td>
</tr>
<tr>
<td>13. Ensuring the maximum use of school plant</td>
<td>33</td>
<td>64</td>
</tr>
<tr>
<td>14. Considering maximum distances children should travel</td>
<td>24</td>
<td>58</td>
</tr>
<tr>
<td>15. Considering traffic problems in relation to sites</td>
<td>42</td>
<td>52</td>
</tr>
<tr>
<td>16. Continuous revision of school survey</td>
<td>49</td>
<td>49</td>
</tr>
<tr>
<td>17. Considering local transportation problems</td>
<td>46</td>
<td>42</td>
</tr>
<tr>
<td>18. Determining room requirements for educational program</td>
<td>49</td>
<td>39</td>
</tr>
<tr>
<td>19. Visiting other schools to review school planning technique</td>
<td>64</td>
<td>24</td>
</tr>
<tr>
<td>20. Plans for the use of survey consultants</td>
<td>61</td>
<td>24</td>
</tr>
</tbody>
</table>

The educational administrator should be involved in:

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involved in preparing statements about the school's function in its community. During the interview, the administrators expressed their views that a community should understand the school's role in its varied activities. The community then would be able to plan its activities in such a way that they complement those of the school.

Eighty-five percent of the respondents saw that it was "essential" for them to be involved in long-range planning of educational facilities and in assessing the financial ability of the community during a school survey. A majority (79 percent) of the respondents agreed that it was "essential" for them to know how to obtain and use information about population shifts of the community. The administrator's involvement in the formulation of the educational philosophy of a community, and also in considering facility needs of different age groups of children was indicated by 73 percent. These administrators stated that the educational philosophy of a community should form the basis for planning school programs. Considering, as a part of their responsibility, sites for new schools, including costs, was regarded by 70 percent of the respondents as "essential."

Among 67 percent of the public-school administrators there was agreement that it was "essential" to be involved in considering acceptable standards of school buildings, and in presenting a building program to the community. The respondents considered it "essential" that they should be involved with the parents, teachers, and pupils in school surveys and also in planning for maximum use of the existing school plant. It was noted that 64 percent of the administrators indicated as "desirable" and only 24 percent of the
administrators as "essential" that they should be involved in visiting other schools to review school planning techniques. It was further noted that 61 percent of the administrators indicated as "desirable" and only 24 percent as "essential" that they should be knowledgeable regarding the use of survey consultants. In general, the public-school administrators rated over three-fourths of the elements in this section at 52 percent and above, i.e., "essential."

From table 7 it was revealed that the respondents gave their highest "essential" rating (94 percent) to informing the school board on architectural aspects. Eighty-eight percent of the respondents rated as "essential" that they should be involved with the school board in presenting a building campaign to the community, and in answering questions and criticisms from the public concerning a building program. There was agreement among 85 percent of the administrators that it was "essential" to be involved in the process of hiring an architect. There was a general opinion from the administrators during the interview that they should be aware of architects whose works are nationally distinguished. This awareness would enable the administrators to make strong recommendations to their school boards when need arose to hire an architect.

The administrators (79 percent) showed as "essential" their involvement in seeking legal advice for a building program, making regular oral or written reports on the process of a building program to the school board and community, and in planning for flexibility in the use of the school plant. The selecting of an educational consultant, forecasting pupil enrollment, and informing the architect on
### TABLE 7

**NEW BUILDINGS AND MAJOR RENOVATION**
(Percentages of Public-School Administrators)

<table>
<thead>
<tr>
<th>Item</th>
<th>Desirable</th>
<th>Essential</th>
</tr>
</thead>
<tbody>
<tr>
<td>The educational administrator should be involved in:</td>
<td></td>
<td></td>
</tr>
<tr>
<td>1. Informing the school board on architectural aspects pertaining to schools</td>
<td>0</td>
<td>94</td>
</tr>
<tr>
<td>2. Presenting, with the school board, building campaign</td>
<td>9</td>
<td>88</td>
</tr>
<tr>
<td>3. Answering questions and criticisms from the public</td>
<td>-</td>
<td>9</td>
</tr>
<tr>
<td>4. Hiring an architect</td>
<td>9</td>
<td>85</td>
</tr>
<tr>
<td>5. Application of information about the taxing capacity of the community</td>
<td>18</td>
<td>82</td>
</tr>
<tr>
<td>6. Financial plan for the building program</td>
<td>9</td>
<td>82</td>
</tr>
<tr>
<td>7. Seeking legal advice for a building program</td>
<td>12</td>
<td>79</td>
</tr>
<tr>
<td>8. Regular reports to the school board and community on the progress of a building program</td>
<td>18</td>
<td>79</td>
</tr>
<tr>
<td>9. Planning for flexibility in the use of school plant</td>
<td>18</td>
<td>79</td>
</tr>
<tr>
<td>10. Selecting educational consultant, when needed</td>
<td>31</td>
<td>73</td>
</tr>
<tr>
<td>11. Forecasting pupil enrollment</td>
<td>24</td>
<td>73</td>
</tr>
<tr>
<td>12. Informing the architect on educational aspects</td>
<td>18</td>
<td>73</td>
</tr>
<tr>
<td>13. Assessing the community's feeling about the resultant design</td>
<td>33</td>
<td>67</td>
</tr>
<tr>
<td>14. Plans for building renovations</td>
<td>27</td>
<td>67</td>
</tr>
<tr>
<td>15. Specifying the types of rooms needed</td>
<td>30</td>
<td>61</td>
</tr>
<tr>
<td>16. Organizing community planning groups</td>
<td>36</td>
<td>58</td>
</tr>
<tr>
<td>17. Developing educational specifications</td>
<td>27</td>
<td>58</td>
</tr>
<tr>
<td>18. Orientating the staff in the use of the new building</td>
<td>30</td>
<td>58</td>
</tr>
<tr>
<td>19. Getting approval of governmental agencies on various stages of the contract</td>
<td>30</td>
<td>58</td>
</tr>
<tr>
<td>20. Considering safety factors such as exits</td>
<td>33</td>
<td>52</td>
</tr>
<tr>
<td>21. Considering facts about the building codes, school laws, and governmental permits</td>
<td>40</td>
<td>46</td>
</tr>
<tr>
<td>22. Specifying building equipment and furnishings</td>
<td>46</td>
<td>42</td>
</tr>
<tr>
<td>23. Recommending room sizes within state guidelines</td>
<td>40</td>
<td>42</td>
</tr>
<tr>
<td>24. Drawing up the architect's contracts</td>
<td>33</td>
<td>33</td>
</tr>
<tr>
<td>25. Advertising and securing of bids</td>
<td>36</td>
<td>21</td>
</tr>
<tr>
<td>26. On-site supervision during construction</td>
<td>27</td>
<td>18</td>
</tr>
<tr>
<td>27. Drawing up contracts with the contractor</td>
<td>33</td>
<td>15</td>
</tr>
<tr>
<td>28. Securing specific building materials and color selections desired</td>
<td>45</td>
<td>15</td>
</tr>
</tbody>
</table>
educational aspects which pertain to schools were regarded as an "essential" element of their responsibility by 73 percent of the administrators. Another 67 percent indicated as "essential" their involvement in plans for building renovations and in assessing the community's feeling about the resultant design of a building. The administrators (61 percent) agreed that it was "essential" that they should be involved in specifying the types of rooms needed in a new building program.

The public-school administrators (58 percent) showed as "essential" that they should be involved in organizing community-planning groups, developing educational specifications, and in orientating the staff in the use of a new building. It should also be noted that the respondents from private-schools gave a higher rating to the administrator's involvement in the development of educational specifications than the public-school administrators. However, it should be mentioned here that during the interview the administrators from both systems--private and public--recognized the significant role educational specifications played in planning facilities. The lowest rating of "essential" (15 percent) by this group was given to their involvement in securing specific building materials and color selections desired. It should be noted that a similar percentage (15) of the private- and the public-school administrators felt they should be involved in drawing up contracts with the contractors for a building program.

Table 8 indicated the percentages of the public-school administrator's responses to items on maintaining schools.
### TABLE 8

**SCHOOL MAINTENANCE**  
(Percentages of Public School Administrators)

<table>
<thead>
<tr>
<th>Item</th>
<th>Desirable</th>
<th>Essential</th>
</tr>
</thead>
<tbody>
<tr>
<td>The educational administrator should be involved in:</td>
<td></td>
<td></td>
</tr>
<tr>
<td>1. Financing repair programs</td>
<td>18</td>
<td>73</td>
</tr>
<tr>
<td>2. Plans for energy conservation</td>
<td>33</td>
<td>64</td>
</tr>
<tr>
<td>3. Preparing pay schedule for custodial help</td>
<td>27</td>
<td>58</td>
</tr>
<tr>
<td>4. Continuous improvement and repair programs</td>
<td>39</td>
<td>55</td>
</tr>
<tr>
<td>5. Periodic inspection trips of school building and playground</td>
<td>46</td>
<td>52</td>
</tr>
<tr>
<td>6. Long-range plans for maintenance problems such as footings, chimney repairs, etc.</td>
<td>46</td>
<td>46</td>
</tr>
<tr>
<td>7. Coordinating teachers'/pupils' cooperation with the custodians</td>
<td>39</td>
<td>30</td>
</tr>
<tr>
<td>8. Providing for removal of waste</td>
<td>42</td>
<td>24</td>
</tr>
<tr>
<td>9. Plans for projects such as window washing, room paintings, etc.</td>
<td>36</td>
<td>24</td>
</tr>
<tr>
<td>10. Selecting and hiring a custodian</td>
<td>33</td>
<td>21</td>
</tr>
<tr>
<td>11. Training and indoctrinating custodians</td>
<td>39</td>
<td>18</td>
</tr>
<tr>
<td>12. Coordinating custodian's schedule and its execution</td>
<td>42</td>
<td>15</td>
</tr>
<tr>
<td>13. Providing information about the latest methods and equipment in the field of maintenance</td>
<td>67</td>
<td>12</td>
</tr>
<tr>
<td>14. Planning for day to day repair problems that may arise</td>
<td>52</td>
<td>12</td>
</tr>
</tbody>
</table>

Seventy-three percent of the respondents considered as "essential" their participation in plans for financing repair programs. There was agreement among 64 percent of the administrators who indicated "essential" that they should take part in planning for energy conservation. Fifty-eight percent of the respondents felt it was "essential" that they should take part in preparation of the pay schedule for custodial help. Involvement in improvement and repair programs was seen as "essential" by 55 percent and "desirable"
by 39 percent of the respondents.

It was noted that an equal percentage (46) of the administrators considered their participation in plans for long-range maintenance problems such as footings and chimney repairs as both "essential" and "desirable." While 36 percent supported as "desirable" the administrator's involvement in securing equipment for custodians, only 24 percent felt it was "essential." There were 67 percent of the public-school respondents who agreed that it was "desirable" to be able to provide information about the latest methods and equipment in the field of maintenance, but only 12 percent considered it as "essential." Fifty-two percent of the respondents indicated as "desirable" their involvement in planning for day-to-day repair problems that may arise, while only 12 percent considered it "essential." Table 8 showed that only a third of the items in this section were indicated as "essential" by over 50 percent of the administrators.

**Public and Private Schools Combined**

Table 9 showed the combined percentage of private- and public-school administrators. It indicated their responses to items in the area of conducting school surveys.

The highest "essential" rating of 95 percent was given by the administrators for their involvement in planning educational programs needed by their communities and in conducting school surveys with the school boards. The administrators saw their participation in preparing statements about the school's function in its community as "essential" by 84 percent. The same percentage also supported their involvement in long-range planning of educational facilities.
### TABLE 9

**SCHOOL SURVEY**  
(Percentages of Private-and Public-School Administrators)

<table>
<thead>
<tr>
<th>Item</th>
<th>Desirable</th>
<th>Essential</th>
</tr>
</thead>
<tbody>
<tr>
<td>The educational administrator should be involved in:</td>
<td></td>
<td></td>
</tr>
<tr>
<td>1. Plans for educational program needed by the community</td>
<td>5</td>
<td>95</td>
</tr>
<tr>
<td>2. Planning with the board of education</td>
<td>5</td>
<td>95</td>
</tr>
<tr>
<td>3. Preparation of statements on the school's function to the community</td>
<td>14</td>
<td>84</td>
</tr>
<tr>
<td>4. Long-range planning</td>
<td>14</td>
<td>84</td>
</tr>
<tr>
<td>5. Formulating educational philosophy for the community</td>
<td>27</td>
<td>73</td>
</tr>
<tr>
<td>6. Considering facility needs of different age groups</td>
<td>25</td>
<td>71</td>
</tr>
<tr>
<td>7. Considering acceptable standards of school buildings</td>
<td>27</td>
<td>70</td>
</tr>
<tr>
<td>8. Assessing the financial ability of the community</td>
<td>30</td>
<td>68</td>
</tr>
<tr>
<td>9. Planning with parents, teachers, and pupils</td>
<td>32</td>
<td>64</td>
</tr>
<tr>
<td>10. Application of information about population shifts</td>
<td>32</td>
<td>63</td>
</tr>
<tr>
<td>11. Considering traffic problems in relation to sites</td>
<td>40</td>
<td>52</td>
</tr>
<tr>
<td>12. Ensuring maximum use of school plant</td>
<td>46</td>
<td>51</td>
</tr>
<tr>
<td>13. Determining room requirements for educational program</td>
<td>43</td>
<td>51</td>
</tr>
<tr>
<td>14. Considering sites for new schools, including costs</td>
<td>30</td>
<td>51</td>
</tr>
<tr>
<td>15. Considering maximum distances children should travel</td>
<td>35</td>
<td>49</td>
</tr>
<tr>
<td>16. Presenting a building program to the community</td>
<td>38</td>
<td>48</td>
</tr>
<tr>
<td>17. Continuous revision of school survey</td>
<td>49</td>
<td>46</td>
</tr>
<tr>
<td>18. Considering local transportation problems</td>
<td>44</td>
<td>46</td>
</tr>
<tr>
<td>19. Visiting other schools to review school planning technique</td>
<td>68</td>
<td>22</td>
</tr>
<tr>
<td>20. Plans of how to use survey consultants</td>
<td>56</td>
<td>22</td>
</tr>
</tbody>
</table>
Seventy-three percent of the administrators felt that it was "essential" to be involved in the formulation of an educational philosophy for the community. To be involved in the process of considering facility needs of different age groups of children was seen by 71 percent of the respondents as "essential."

Seventy percent of the respondents showed that it was "essential" that they should consider acceptable standards for school buildings. Sixty-eight percent of the respondents agreed that it was "essential" that they should be involved in assessing the financial ability of the community during school surveys. The administrators (64 percent) indicated "essential" that they should be involved with parents, teachers, and pupils in school surveys. Sixty-three percent of the respondents felt it was "essential" that they should acquire and use information about population shifts. It was noted that while 68 percent of the respondents considered as "desirable" their involvement in visiting other schools to review school-planning techniques, only 22 percent felt it was "essential." It was further noted that 56 percent felt it was "desirable" that they should have information on how to use survey consultants, again, only 22 percent felt it was "essential."

Table 10 shows 84 percent of the administrators rated as "essential" their participation in answering questions and criticisms from the public about a building program needed. They indicated as "essential" (79 percent) that they should be involved in forecasting pupil enrollments when planning a new building or a major renovation. Again 79 percent of the respondents considered it as
TABLE 10
NEW BUILDINGS AND MAJOR RENOVATION
(Percentages of Private-and Public-
School Administrators)

<table>
<thead>
<tr>
<th>Item</th>
<th>Desirable</th>
<th>Essential</th>
</tr>
</thead>
<tbody>
<tr>
<td>The educational administrator should be involved in:</td>
<td></td>
<td></td>
</tr>
<tr>
<td>1. Answering questions and criticisms from the public</td>
<td>13</td>
<td>84</td>
</tr>
<tr>
<td>2. Forecasting pupil enrollment</td>
<td>19</td>
<td>79</td>
</tr>
<tr>
<td>3. Informing the school board on architectural aspects which pertain to schools</td>
<td>18</td>
<td>79</td>
</tr>
<tr>
<td>4. Presenting, with the school board, building campaign to the community</td>
<td>18</td>
<td>79</td>
</tr>
<tr>
<td>5. Planning for flexibility in the use of school plant</td>
<td>19</td>
<td>76</td>
</tr>
<tr>
<td>6. Plans for building renovations</td>
<td>24</td>
<td>73</td>
</tr>
<tr>
<td>7. Specifying the types of rooms needed</td>
<td>24</td>
<td>71</td>
</tr>
<tr>
<td>8. Orientating the staff in the use of a new building</td>
<td>21</td>
<td>71</td>
</tr>
<tr>
<td>9. Applying information about the taxing capacity of the community</td>
<td>24</td>
<td>67</td>
</tr>
<tr>
<td>10. Regular reports on the progress of a building program to the school board and community</td>
<td>29</td>
<td>65</td>
</tr>
<tr>
<td>11. Seeking legal advice for a building program</td>
<td>19</td>
<td>64</td>
</tr>
<tr>
<td>12. Developing educational specifications</td>
<td>27</td>
<td>64</td>
</tr>
<tr>
<td>13. Informing the architect on educational aspects</td>
<td>24</td>
<td>64</td>
</tr>
<tr>
<td>14. Considering facts about building codes, school laws, governmental permits, etc.</td>
<td>29</td>
<td>62</td>
</tr>
<tr>
<td>15. Financial plan for servicing building program</td>
<td>25</td>
<td>62</td>
</tr>
<tr>
<td>16. Recommending room sizes within state guidelines</td>
<td>29</td>
<td>62</td>
</tr>
<tr>
<td>17. Considering safety factors such as exits</td>
<td>30</td>
<td>60</td>
</tr>
<tr>
<td>18. Selecting educational consultant, when needed</td>
<td>35</td>
<td>59</td>
</tr>
<tr>
<td>19. Assessing the community's feeling about the resultant design of a building</td>
<td>40</td>
<td>59</td>
</tr>
<tr>
<td>20. Specifying building equipment and furnishings</td>
<td>38</td>
<td>56</td>
</tr>
<tr>
<td>21. Hiring an architect</td>
<td>19</td>
<td>54</td>
</tr>
<tr>
<td>22. Getting approval of governmental agencies on various stages of the contract</td>
<td>32</td>
<td>51</td>
</tr>
<tr>
<td>23. Organizing community planning groups</td>
<td>43</td>
<td>46</td>
</tr>
<tr>
<td>24. Securing specific building materials and color selections desired</td>
<td>49</td>
<td>27</td>
</tr>
<tr>
<td>25. Drawing up the architect's contracts</td>
<td>35</td>
<td>22</td>
</tr>
<tr>
<td>26. On-site supervision during construction</td>
<td>33</td>
<td>19</td>
</tr>
<tr>
<td>27. Advertising and securing of bids</td>
<td>35</td>
<td>16</td>
</tr>
<tr>
<td>28. Drawing up the contractor's contracts</td>
<td>38</td>
<td>10</td>
</tr>
</tbody>
</table>
"essential" that they should inform the school board on architectural matters which pertained to schools and also be involved in presenting a building campaign to the community. There was agreement from 76 percent of the administrators that it was "essential" that they should plan for flexibility in the use of the school plant. Involvement in plans for building renovations was considered as "essential" by 73 percent of the respondents.

The data showed that 71 percent of the administrators agreed it was "essential" that they should be involved in specifying the types of rooms needed in a new building and that they should participate in orienting the staff on how to use the building. There were 67 percent of the administrators who felt that their involvement in acquiring and applying information about the taxing capacity of the community was "essential." Making regular oral or written reports on the progress of a building program to the school board and community was considered as "essential" by 65 percent of the respondents.

Sixty-four percent of the administrators felt that it was "essential" they should be involved in such activities as seeking legal advice for a building program, developing educational specifications, and informing the architect on educational matters which pertain to schools. Sixty-two percent felt it was "essential" that they should be knowledgeable about facts concerning building codes, school laws, government permits, etc.: about financial plans for servicing a building program; and about recommending room sizes within the state guidelines. Sixty percent of the respondents felt that it was "essential" they should be involved when consideration was given to
safety factors such as exits, corridor width, etc. Two items were regarded as "essential" by 59 percent of the administrators. These were taking part in selecting an educational consultant and in assessing the community's feeling about the resultant design of a building. While 49 percent of the respondents felt it was "desirable" that they should be involved in securing specific building materials and color selections desired, only 27 percent felt it was "essential." It was noted that the lowest "essential" rating (10 percent) was given by the administrators on their involvement in drawing up contracts with the contractor.

Table 11 indicated that in maintaining schools 66 percent of the respondents considered as "essential" their involvement in periodic inspection trips of school buildings and playgrounds, while 57 percent of the respondents felt it was "essential" to participate in plans for energy conservation--41 percent felt that it was "desirable." Forty-one and 56 percent of the administrators indicated as "desirable" and "essential," respectively, that they should be involved in improvement and repair programs. Activities such as training and indoctrinating custodians, coordinating the custodian's schedule and its execution, and planning for day-to-day repair problems that may arise were seen as "desirable" by 40 percent and "essential" by 30 percent of the administrators. While 59 percent considered that it was "desirable" that they should provide information about the latest methods and equipment in the field of maintenance, only 13 percent felt that it was "essential." In general, it was observed that the administrators felt they should not spend too much time in the
TABLE 11

SCHOOL MAINTENANCE
(Percentages for Private- and Public-School Administrators)

<table>
<thead>
<tr>
<th>Item</th>
<th>Desirable</th>
<th>Essential</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Periodic inspection trips of school building and playground</td>
<td>35</td>
<td>66</td>
</tr>
<tr>
<td>2. Plans for energy conservation</td>
<td>41</td>
<td>57</td>
</tr>
<tr>
<td>3. Continuous improvement and repair programs</td>
<td>41</td>
<td>56</td>
</tr>
<tr>
<td>4. Financing repair programs</td>
<td>27</td>
<td>52</td>
</tr>
<tr>
<td>5. Coordinating teachers'/pupils' cooperation with custodians</td>
<td>29</td>
<td>52</td>
</tr>
<tr>
<td>6. Long-range plans for maintenance problems such as footings, chimney repairs, etc.</td>
<td>43</td>
<td>48</td>
</tr>
<tr>
<td>7. Preparing pay schedule for custodial help</td>
<td>38</td>
<td>46</td>
</tr>
<tr>
<td>8. Selecting and hiring a custodian</td>
<td>37</td>
<td>35</td>
</tr>
<tr>
<td>9. Planning for projects such as window washing, room painting, etc.</td>
<td>40</td>
<td>30</td>
</tr>
<tr>
<td>10. Training and indoctrinating custodians</td>
<td>43</td>
<td>30</td>
</tr>
<tr>
<td>11. Coordinating the custodian's schedule and its execution</td>
<td>43</td>
<td>30</td>
</tr>
<tr>
<td>12. Plans for day to day repair problems that may arise</td>
<td>46</td>
<td>30</td>
</tr>
<tr>
<td>13. Securing equipment for custodian's needs</td>
<td>43</td>
<td>29</td>
</tr>
<tr>
<td>14. Providing for removal of waste</td>
<td>48</td>
<td>21</td>
</tr>
<tr>
<td>15. Providing information about the latest methods and equipment in the field of maintenance</td>
<td>59</td>
<td>13</td>
</tr>
</tbody>
</table>

The educational administrator should be involved in:

Table 12 presented the rating of items as "essential" by sixty-three administrators from both private- and public-school systems. The table indicated only those items judged as "essential" by at least 60 percent of all the respondents (for more details see appendix B). It was considered that these items were judged by the respondents as being a part of the administrator's responsibility.
TABLE 12
PERCENTAGES FOR "ESSENTIAL" RATINGS GIVEN

<table>
<thead>
<tr>
<th>Item</th>
<th>Private</th>
<th>Public</th>
</tr>
</thead>
<tbody>
<tr>
<td>The educational administrator should be involved in:</td>
<td></td>
<td></td>
</tr>
<tr>
<td>1. Plans for educational program needed by the community</td>
<td>97</td>
<td>94</td>
</tr>
<tr>
<td>2. School survey with the school board</td>
<td>97</td>
<td>94</td>
</tr>
<tr>
<td>3. Informing the school board on architectural matters pertaining to</td>
<td>63</td>
<td>94</td>
</tr>
<tr>
<td>schools</td>
<td></td>
<td></td>
</tr>
<tr>
<td>4. Answering questions and criticisms from the public</td>
<td>80</td>
<td>88</td>
</tr>
<tr>
<td>5. Presenting, with the school board, building campaign to the</td>
<td>83</td>
<td>85</td>
</tr>
<tr>
<td>community</td>
<td></td>
<td></td>
</tr>
<tr>
<td>6. Preparing a statement of the school's function to the community</td>
<td>83</td>
<td>85</td>
</tr>
<tr>
<td>7. Long-range planning</td>
<td>83</td>
<td>85</td>
</tr>
<tr>
<td>8. Applying information about financial ability of the community</td>
<td>50</td>
<td>85</td>
</tr>
<tr>
<td>9. Considering the taxing capacity of the community</td>
<td>50</td>
<td>82</td>
</tr>
<tr>
<td>10. Financial plan for servicing building program</td>
<td>40</td>
<td>82</td>
</tr>
<tr>
<td>11. Plans for flexibility in the use of school plant</td>
<td>73</td>
<td>79</td>
</tr>
<tr>
<td>12. Regular reports on the progress of a building program to the</td>
<td>50</td>
<td>79</td>
</tr>
<tr>
<td>school board and community</td>
<td></td>
<td></td>
</tr>
<tr>
<td>13. Seeking legal advice for a building program</td>
<td>47</td>
<td>79</td>
</tr>
<tr>
<td>14. Applying for information on population shifts</td>
<td>40</td>
<td>79</td>
</tr>
<tr>
<td>15. Forecasting pupil enrollment</td>
<td>87</td>
<td>73</td>
</tr>
<tr>
<td>16. Considering facility needs of different age groups</td>
<td>70</td>
<td>73</td>
</tr>
<tr>
<td>17. Formulation of a community's educational philosophy</td>
<td>60</td>
<td>73</td>
</tr>
<tr>
<td>18. Informing the architect on educational aspects</td>
<td>53</td>
<td>73</td>
</tr>
<tr>
<td>19. Plans for building renovations</td>
<td>80</td>
<td>67</td>
</tr>
<tr>
<td>20. Plans for acceptable standards of school buildings</td>
<td>73</td>
<td>67</td>
</tr>
<tr>
<td>21. School survey with parents, teachers, and pupils</td>
<td>63</td>
<td>64</td>
</tr>
<tr>
<td>22. Specifying the types of rooms needed</td>
<td>83</td>
<td>61</td>
</tr>
<tr>
<td>23. Developing educational specifications for new buildings</td>
<td>70</td>
<td>58</td>
</tr>
<tr>
<td>24. Orientating the staff in the use of the new building</td>
<td>87</td>
<td>58</td>
</tr>
<tr>
<td>25. Periodic inspection of school and playground</td>
<td>77</td>
<td>52</td>
</tr>
<tr>
<td>26. Considering safety factors such as exits</td>
<td>70</td>
<td>52</td>
</tr>
<tr>
<td>27. Considering facts about the building codes, school laws,</td>
<td>80</td>
<td>46</td>
</tr>
<tr>
<td>governmental permits, etc.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>28. Recommending room sizes within state guidelines</td>
<td>83</td>
<td>43</td>
</tr>
</tbody>
</table>
This table has presented in a convenient form for comparison the rating given by private- and public-school administrators separately. The highest ratings, 97 percent and 94 percent, by private- and public-school respondents, respectively, were given to the items in which they should be involved such as planning for educational programs needed by their communities and working with school boards during school surveys. While 63 percent of private-school administrators agreed that it was a part of their responsibility to inform the school board on architectural matters which pertain to schools, 94 percent of the public-school administrators supported the same item. The administrators from the private schools (80 percent) and public schools (88 percent) agreed that they should participate in answering questions and criticisms which may be raised by the public about the building program.

The administrators, 83 percent from private schools and 85 percent from public schools, considered that they should work together with the school board in presenting a building campaign to the community. Eighty-three percent of the private-school administrators and 85 percent of public-school administrators felt that they should be involved in the preparation of a statement of the school’s function in the community. Long-range planning of educational facilities was considered by 83 percent of the private-school administrators and 85 percent of the public-school administrators as a part of their responsibility. While 85 percent of the public-school administrators agreed that they should be able to use the information about the financial ability of their community, 50 percent from the
private schools supported the same item.

The consideration of the administrators about the taxing capacity of the community was supported by 50 percent of the private-school administrators and 82 percent from the public-school administrators. It was noted that the private-school administrators did not support as did the public-school administrators their effort to assess the taxing capacity of the community and also applying information about financial ability of their community when new buildings were being planned.

Seventy-nine percent of public-school administrators saw that it was part of their responsibility to seek legal advice for a building program and also to use information on population shifts when planning educational facilities, whereas only 40 percent of the private-school administrators supported the same item. Forecasting pupil enrollment was regarded by the administrators as part of their responsibility (87 percent from private schools and 73 percent from public schools, respectively). The administrators, 70 percent from private schools and 73 percent from public schools, agreed that they should be involved when considering facility needs of different age groups of children. There was agreement among 60 percent private-school and 73 percent public-school administrators that they should participate in the formulation of the educational philosophy of their communities. It was observed from the data that 53 percent from private-school administrators and 73 percent from the public-school administrators supported the fact that they should inform the architect on educational aspects which pertain to schools.
For the public schools, 80 percent of the respondents agreed that they should be involved in planning building renovations in contrast to 67 percent of private-school respondents. The administrators, 73 percent and 67 percent from the private and the public schools, respectively, supported their participation in planning acceptable standards of school buildings as "essential." The data showed a close agreement between the administrators, private schools (63 percent) and public schools (64 percent), that they should be involved with parents, teachers, and students in a school survey. The administrator's involvement in specifying the types of rooms needed was considered "essential" by 83 percent from private schools and 61 percent from public schools. Surprisingly, however, only 70 percent and 58 percent from private- and public-school administrators, respectively, agreed that they should be involved in developing educational specifications for new buildings. Making periodic inspection trips of school buildings and playgrounds was seen by 77 percent of the private-school administrators and 52 percent of the public-school administrators as a part of their responsibility. Involvement in planning for safety factors such as exits for a new building was supported by 70 percent of the private-school and 52 percent of the public-school administrators. While 46 percent of the respondents from public schools supported their participation in considering facts about building codes, school laws, and government permits, 80 percent from the private schools supported the same concern. It was felt by 83 percent of the public-school administrators and 43 percent of the private-school
that recommending room sizes for a new building within state guidelines was a part of their responsibility.

In general the data showed that the administrators supported the items they considered to be essential elements of their responsibility by 60 percent. This was further supported by the comments of the administrators during the interview period.

Table 13 indicated that the private-school administrators' years of experience ranged as follows: 47 percent had 5 years or less; 23 percent between 6-10 years; 13 percent between 11-15 years; 10 percent between 16-20 years; and 6 percent had 20 or more years. It was observed from the data that from private-school systems, there were more administrators with 5 or less years of experience than in any other category. The least number of administrators was in the category of 20 or more years of experience.

The years of experience for public-school administrators ranged as follows: 3 percent had 5 years or less; 18 percent between 6-10 years; 24 percent between 11-15 years; 12 percent between 16-20 years; and 42 percent had 20 or more years.

In the public schools there were more administrators in the category of 20 or more years of experience than in any other. The least number of administrators was in the category of 5 or less years of experience. It was generally observed from this table that public-school administrators served longer periods in their jobs than did the private-school administrators.

Table 14 indicated that in the category of 5 or less years of experience, the course of Elementary-School Curriculum Planning
## TABLE 13

**ADMINISTRATORS' YEARS OF EXPERIENCE**

<table>
<thead>
<tr>
<th>Years of Experience Category</th>
<th>Percentage of Administrators</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Private School</td>
</tr>
<tr>
<td>5 or less</td>
<td>47</td>
</tr>
<tr>
<td>6-10</td>
<td>23</td>
</tr>
<tr>
<td>11-15</td>
<td>13</td>
</tr>
<tr>
<td>16-20</td>
<td>10</td>
</tr>
<tr>
<td>20 or more</td>
<td>6</td>
</tr>
</tbody>
</table>

## TABLE 14

**COURSES TAKEN BY ADMINISTRATORS PERCENTAGEWISE**
*(Five or Less Years of Experience)*

<table>
<thead>
<tr>
<th>Course</th>
<th>Private School</th>
<th>Public School</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Elementary-School Curriculum Planning</td>
<td>50</td>
<td>100</td>
</tr>
<tr>
<td>2. Audiovisual Aids</td>
<td>43</td>
<td>100</td>
</tr>
<tr>
<td>3. Internal Administration</td>
<td>36</td>
<td>100</td>
</tr>
<tr>
<td>4. School Law</td>
<td>36</td>
<td>100</td>
</tr>
<tr>
<td>5. Public Relations</td>
<td>36</td>
<td>0</td>
</tr>
<tr>
<td>6. School Survey</td>
<td>29</td>
<td>0</td>
</tr>
<tr>
<td>7. School Finance</td>
<td>27</td>
<td>0</td>
</tr>
<tr>
<td>8. School Building Planning</td>
<td>21</td>
<td>0</td>
</tr>
<tr>
<td>9. High-School Curriculum Planning</td>
<td>14</td>
<td>0</td>
</tr>
</tbody>
</table>
had been taken by more administrators from both private and public schools than any other course. Audiovisual Aids followed with 43 percent for private schools and 100 percent for public schools, respectively. The table showed that fewer administrators had taken High-School Curriculum for both private and public schools.

Table 15 showed percentages of the educational courses taken by administrators with six to ten years of experience. Internal Administration was taken by the largest number of administrators for both private and public schools. There were 71 percent from private schools and 100 percent from public schools who had taken this course. It was noted from this table that no administrator from private schools and only 33 percent from public schools had taken School Building Planning. The courses such as Public Relations and Elementary-School Curriculum Planning were taken by 71 percent of private-school administrators. High-School Curriculum Planning and Public Relations were taken by 83 percent of public-school administrators. It was noted from this table that School Survey was taken by only 1 percent and 33 percent of private- and public-school administrators, respectively.

Table 16 listed the educational courses taken by administrators who have had eleven to fifteen years of experience. As shown in this table, Internal Administration was taken by more administrators, 75 percent from private schools, and 100 percent from public schools, respectively, than any other course. Seventy-five percent of private-school administrators had taken Audiovisual Aids, whereas only 25 percent of the public-school administrators had
TABLE 15
PERCENTAGE OF ADMINISTRATORS WHO HAVE TAKEN EDUCATIONAL COURSES (6-10 Years of Experience)

<table>
<thead>
<tr>
<th>Course</th>
<th>Private School</th>
<th>Public School</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Internal Administration</td>
<td>71</td>
<td>100</td>
</tr>
<tr>
<td>2. School Law</td>
<td>29</td>
<td>100</td>
</tr>
<tr>
<td>3. Elementary-School Curriculum Planning</td>
<td>71</td>
<td>100</td>
</tr>
<tr>
<td>4. High-School Curriculum Planning</td>
<td>71</td>
<td>83</td>
</tr>
<tr>
<td>5. Public Relations</td>
<td>71</td>
<td>83</td>
</tr>
<tr>
<td>6. School Finance</td>
<td>43</td>
<td>67</td>
</tr>
<tr>
<td>7. Audiovisual Aids</td>
<td>57</td>
<td>67</td>
</tr>
<tr>
<td>8. School Building Planning</td>
<td>0</td>
<td>33</td>
</tr>
<tr>
<td>9. School Survey</td>
<td>1</td>
<td>33</td>
</tr>
</tbody>
</table>

TABLE 16
PERCENTAGE OF ADMINISTRATORS WHO HAVE TAKEN EDUCATIONAL COURSES (11-15 Years of Experience)

<table>
<thead>
<tr>
<th>Course</th>
<th>Private School</th>
<th>Public School</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Internal Administration</td>
<td>75</td>
<td>100</td>
</tr>
<tr>
<td>2. Public Relations</td>
<td>50</td>
<td>100</td>
</tr>
<tr>
<td>3. School Finance</td>
<td>50</td>
<td>88</td>
</tr>
<tr>
<td>4. High-School Curriculum Planning</td>
<td>50</td>
<td>88</td>
</tr>
<tr>
<td>5. Elementary-School Curriculum Planning</td>
<td>50</td>
<td>87</td>
</tr>
<tr>
<td>6. School Law</td>
<td>50</td>
<td>75</td>
</tr>
<tr>
<td>7. School Survey</td>
<td>25</td>
<td>63</td>
</tr>
<tr>
<td>8. School Building Planning</td>
<td>25</td>
<td>50</td>
</tr>
<tr>
<td>9. Audiovisual Aids</td>
<td>75</td>
<td>25</td>
</tr>
</tbody>
</table>
taken the course. One hundred percent of public-school administrators also had taken Public Relations. It was noted that fewer administrators, 25 percent from private schools and 50 percent from public schools, respectively, had taken School Building Planning. In general, it was observed that in this category a greater number of administrators of the public school had taken educational courses related to planning educational facilities than the private-school administrators.

Courses taken by the percentage of administrators in the sixteen-to-twenty-years-of-experience category are shown in table 17. It was noted that in this category all administrators from both private and public schools had taken Elementary-School Curriculum Planning. High School Curriculum Planning was another course which had been taken by all the administrators. For the public schools, 100 percent of the administrators had taken School Finance, School Survey, and Internal Administration. It was observed that while no private-school administrator in this category had taken School Building Planning, 75 percent of public-school administrators had taken the course. Generally, it was noted in this category that 75 percent or more of public-school administrators had taken each of the courses listed.

Table 18 presented percentagewise the educational courses taken by administrators in the category of 21 or more years of experience. It indicated that Internal Administration was taken by more administrators from private (100 percent) and public (93 percent) schools than any other course. The administrators from private
### TABLE 17
PERCENTAGE OF ADMINISTRATORS WHO HAVE TAKEN EDUCATIONAL COURSES (16-20 Years of Experience)

<table>
<thead>
<tr>
<th>Course</th>
<th>Private School</th>
<th>Public School</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Elementary-School Curriculum Planning</td>
<td>100</td>
<td>100</td>
</tr>
<tr>
<td>2. High-School Curriculum Planning</td>
<td>100</td>
<td>100</td>
</tr>
<tr>
<td>3. School Survey</td>
<td>67</td>
<td>100</td>
</tr>
<tr>
<td>4. Internal Administration</td>
<td>67</td>
<td>100</td>
</tr>
<tr>
<td>5. School Finance</td>
<td>67</td>
<td>100</td>
</tr>
<tr>
<td>6. Audiovisual Aids</td>
<td>67</td>
<td>75</td>
</tr>
<tr>
<td>7. Public Relations</td>
<td>67</td>
<td>75</td>
</tr>
<tr>
<td>8. School Law</td>
<td>33</td>
<td>75</td>
</tr>
<tr>
<td>9. School Building Planning</td>
<td>0</td>
<td>75</td>
</tr>
</tbody>
</table>

### TABLE 18
PERCENTAGE OF ADMINISTRATORS WHO HAVE TAKEN EDUCATIONAL COURSES (21 or More Years of Experience)

<table>
<thead>
<tr>
<th>Course</th>
<th>Private School</th>
<th>Public School</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Internal Administration</td>
<td>100</td>
<td>93</td>
</tr>
<tr>
<td>2. School Finance</td>
<td>50</td>
<td>93</td>
</tr>
<tr>
<td>3. High-School Curriculum Planning</td>
<td>0</td>
<td>93</td>
</tr>
<tr>
<td>4. Public Relations</td>
<td>0</td>
<td>93</td>
</tr>
<tr>
<td>5. School Building Planning</td>
<td>0</td>
<td>86</td>
</tr>
<tr>
<td>6. School Law</td>
<td>50</td>
<td>86</td>
</tr>
<tr>
<td>7. Elementary-School Curriculum Planning</td>
<td>100</td>
<td>86</td>
</tr>
<tr>
<td>8. Audiovisual Aids</td>
<td>50</td>
<td>64</td>
</tr>
<tr>
<td>9. School Survey</td>
<td>0</td>
<td>57</td>
</tr>
</tbody>
</table>
schools in this category had not taken High-School Curriculum Planning, Public Relations, School Building Planning, and School Survey. For public schools more than 50 percent of the administrators had taken each of the courses. Elementary-School Curriculum Planning was taken by 100 and 87 percent of private- and public-school administrators, respectively.

Table 19 summarizes percentagewise the courses taken by administrators. It indicated that Internal Administration was taken by 94 percent and 57 percent of public- and private-school administrators, respectively. Of the administrators, 67 percent from the private schools and 88 percent from public schools had taken Elementary-School Curriculum Planning. This course was taken by more administrators than any other. It was observed from this table that School Building Planning was taken by the fewest of all administrators combined. In general, each course was taken by more public-school administrators than those from the private schools.

Summary

The purpose of this chapter was to present and analyze the data gathered from sixty-three respondents in private and public schools relative to the administrator's responsibility for planning educational facilities. There were thirty private- and thirty-three public-school administrators involved.

The percentage rating of the items and courses taken were tabulated according to the school systems--private and public. The percentage ratings of the items indicated agreement between private- and public-school administrators on essential elements of their
TABLE 19
SUMMARY OF COURSES TAKEN BY ADMINISTRATORS
PERCENTAGEWISE

<table>
<thead>
<tr>
<th>Course</th>
<th>Private School</th>
<th>Public School</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Internal Administration</td>
<td>57</td>
<td>94</td>
</tr>
<tr>
<td>2. Elementary Curriculum Planning</td>
<td>67</td>
<td>88</td>
</tr>
<tr>
<td>3. High School Curriculum Planning</td>
<td>33</td>
<td>85</td>
</tr>
<tr>
<td>4. Public Relations</td>
<td>47</td>
<td>85</td>
</tr>
<tr>
<td>5. School Law</td>
<td>37</td>
<td>85</td>
</tr>
<tr>
<td>6. School Finance</td>
<td>40</td>
<td>82</td>
</tr>
<tr>
<td>7. School Building Planning</td>
<td>13</td>
<td>61</td>
</tr>
<tr>
<td>8. School Survey</td>
<td>27</td>
<td>58</td>
</tr>
<tr>
<td>9. Audiovisual Aids</td>
<td>50</td>
<td>57</td>
</tr>
</tbody>
</table>

responsibility. It was noted, however, that in the area of maintaining school facilities, the administrators felt that their involvement was least needed. It was further noted generally that more public-school administrators had more years of experience in administration and had taken more courses related to facility planning than private-school administrators.

The information gathered provided a basis for identifying essential elements of the administrator's responsibility for facility planning as presented in chapter V.
CHAPTER V

ESSENTIAL ELEMENTS OF THE RESPONSIBILITY OF THE EDUCATIONAL ADMINISTRATOR IN PLANNING FACILITIES

The purpose of chapter V is to present the essential elements identified in this study. The identification of the elements was based on:

1. Concepts gathered from literature, regarding responsibility of the educational administrator in planning educational facilities.

2. Data gathered by a survey of the responsibility of the educational administrators in southwestern Michigan.

In addition, the views expressed by the administrators during interviews were also considered in identifying the essential elements.

Identified Essential Elements

From the literature review in chapter II, the elements of the administrator's responsibility for planning educational facilities were presented. The essential elements were also identified from the data gathered and analyzed in chapter IV. In addition to the literature review and the analyzed data, the views expressed by administrators during interviews were considered in identifying the essential elements.

The elements were presented in the order in which the educational administrator often executes them during his or her responsibility
for planning facilities. In order to follow the sequence, responsibility in conducting school surveys was viewed first, followed by planning new buildings and major renovations, and finally maintaining schools.

**General School Survey**

The general school survey should precede the development of an ultimate plan of the educational facilities for a school system. In conducting school surveys, the educational administrator is the key person. He or she initiates the study and recommends to the board the need for the study. The elements of the educational administrator's responsibility in a school survey are identified as follows:

1. The educational administrator should determine educational needs and desires of the community for the present and the future. He or she should crystallize into material form plans for educational facilities that will meet those needs.

2. The educational administrator should appoint, with the assistance of his or her educational advisors, members of a survey team. The team may be composed of teachers, parents, students, board members, architect, city planners, curriculum specialists, and so on. The size of team membership may depend on the size of the school system and the nature of the survey to be conducted. The administrator should try to include those members who would contribute to the educational needs for which the survey is conducted. The educational administrator should recommend the inclusion of a survey consultant for a survey team, should that become necessary. He or she should lead in identifying and understanding the responsibility and authority of all
participants. He or she should be involved with the team members, coordinating their various activities and seeing that proper steps are taken so that adequate time is provided for each activity.

3. The educational administrator should define the function of the school to the community. He or she should inform the community about educational programs and the results accomplished. The awareness of the community about the school's function enables its people to support the development of educational facilities.

4. The educational administrator should be involved in and lead out in the development of an educational philosophy for the entire community. He or she should lead in discussions about this philosophy with staff, the board of education, and the interested public. He or she should also help the community to understand this philosophy and to use it to develop common elements of agreement as to the purposes of education, the role of the school, and the system of values ascribed to the school community life. The administrator should see that the philosophy is expressed in writing so that it may be the basis for developing educational specifications and planning educational facilities. The administrator should try to review the educational philosophy periodically in order to harmonize it with the changing needs of the community.

5. The educational administrator should be acquainted with the financial ability of his or her school district community with regards to the development of educational facilities. The administrator should be involved in determining financial resources available to the school system. He or she should be able to strengthen current resources for
the school system and to direct the school board's attention to new resources which could be utilized.

6. The educational administrator should be involved in determining the optimum use of the present school plant. He or she should develop a building utilization measurement to substantiate the education facility needs expressed by the employees of the school system. The administrator should be able to apply philosophy, theory, and practical knowledge in order to determine the extent to which present facilities are used. The administrator's presentation of facility's utilization to the board of education and the community should be based on his or her professional experience and judgment.

7. The educational administrator should be acquainted with information concerning school population characteristics and trends. The administrator should gather information on the population from official local and state planning agencies, real estate enterprises, local business organizations, and from his or her own school records. He or she should try to obtain analyzed local situations so that a school survey team might utilize the information during the study. The administrator should, however, investigate other local sources such as the telephone company and an institution of higher learning which also may be involved in the analysis of population characteristics and trends. The administrator should use professional judgment as to which available informational courses are relevant to help determine the educational and facility needs of the school system.

8. The educational administrator should, with care and consideration from all directions, arrange for his or her staff, board
members, and lay citizens to visit other school districts for the purpose of improving educational facilities of their own school district.

9. The educational administrator should present the findings of the survey team to the board of education. With these findings he or she should make recommendations regarding the present condition of educational facilities in the school system and should forecast, to the best of his or her ability, what the future needs will be in time for adequate planning to take place. The administrator should ensure that the reports adopted by the board be developed into long-range plans.

10. The educational administrator should continually review school surveys and keep abreast with changing needs of his or her community.

New Building and Major Renovation

The planning process of either a new building or major renovation is complicated. Each stage in the planning process requires the attention of the person who knows all the educational interests at stake. The educational administrator by his or her professional qualification, position of leadership, and contacts in the community is fitted to be the key person in the entire planning process. The essential elements of his or her responsibility are:

1. The educational administrator should agree with the staff and the board of education that the need exists for a new building in the school system. The long-range plan for developing educational facilities in the system should form the basis for identifying the need. The administrator should unite with the board in presenting the building
campaign to the community. The scope of the campaign should include educational philosophy, role of the school in the community, educational programs, results accomplished, and any other area considered necessary by the administrator and the board.

2. The educational administrator should organize a planning team for a new building program. The team should consist of members with various interests and skills needed for planning the building desired. Each member should recognize his or her responsibility to the educational administrator for the portion of the task assigned. The administrator should support the team by arranging for meeting places, conditions of work, time schedules, financial support, and any other support deemed necessary by the administrator. He or she should establish clear and complete procedures in which the work of all persons concerned will be coordinated and definite results will be secured at stated times and reported in prescribed ways. In this way he or she will be spared the need to constantly supervise but will remain fully informed whenever major decisions are to be made. The team should operate in an advisory capacity only, leaving to the educational administrator the final decisions on administrative questions. Matters involving policies that must be decided by the board should always go to the board from the educational administrator with his or her recommendations, not directly from any other person.

3. The educational administrator should prepare a financial statement and present it to the board of education. He or she should estimate the total cost of the new building, including furnishings and equipment. He or she should estimate the amount of funds needed for
the purchase of the site, for drainage, grading, and landscaping, for walks, drives, and other developments. The administrator should state the expected resources, showing funds the school already has and the amount that the board would need to provide in some way. He or she should project, to the best of his or her knowledge, the cost of operating and maintaining the new facility.

4. The educational administrator should be involved in forecasting pupil enrollment. He or she should be able to obtain information from school records, local and state planning agencies, local business or university population projections, and any others that may be convenient for the use of the school district.

5. The educational administrator should be involved in the selection of the school site and its development, utilizing consultants where necessary. The administrator should consider the site cost through the long-range plans for facilities in the school system. He or she should recognize the future needs and recommend the purchase of a site in advance of immediate needs to avoid costs which might rise due to inflation and population explosion.

6. The educational administrator in an advisory capacity should assist the board of education in the selection of the architect. The administrator should assist the board in deciding on the method of choosing and formulating definite specifications for architectural services. At the time the architect is selected, it should be understood that he or she should act as part of the planning team headed by the educational administrator, not as an independent functionary responsible only to the board of education.
7. The educational administrator should have an active leadership in the development of educational specifications. The administrator should organize the planning team into various committees based on the members' skills and interest in the area to which each committee will be assigned. He or she should facilitate and coordinate the work of all committees. Since the specifications become the communication between the school family and the architect, the administrator should receive the reports from all committees. He or she should ensure that the reports are written into narrative form expressing the desired educational program for a proposed facility. The administrator should present the material to the board of education for its approval. He or she then should present the compiled and edited document to the architect.

8. The educational administrator should seek legal advice for a building program. The building program will involve various individuals who will furnish materials or services requiring contracts which should be understood by all concerned. The administrator should, therefore, advise the board of education to have all agreements drawn up in writing by an attorney.

9. The educational administrator should review the architectural plans with the architect. The educational administrator should grant the architect time for the designing of the new facility. The administrator with his or her educational advisors and the architect should analyze the final drawings and specifications before presenting them to the board of education. If it should be revealed that the architect is unfamiliar with current trends in regard to learning spaces, the
The educational administrator should explain additional concepts other than those outlined in the educational specifications and ensure that they are reflected in the architectural design produced.

10. The educational administrator should inform the school board about architectural aspects of the new building under consideration.

11. The educational administrator should be involved in the following: planning for flexibility in the use of the new building; specifying the types of rooms needed; planning the room sizes, within state guidelines; considering facts about building codes, school laws, and government permits; and considering safety factors such as exits, corridor width, etc., in planning a new building.

12. The educational administrator should ensure that there is an agreement with the board of education on proceedings in the planning process for the new building. He or she should monitor the progress of the building program, should inform the board of education and the community about the program's progress, and should be able to answer questions and criticisms about the building program.

13. The educational administrator should be involved in the acceptance and opening of the new structure. He or she should make plans for the orientation of staff, pupils, and community in the use of the new building.

14. The educational administrator should make plans for renovating schools buildings. He or she should organize the planning team and should arrange studies to assess the needs for any renovations in the school system.

15. The educational administrator should be involved in the
selection and ordering of furniture and equipment for the new structure. He should work with the staff and the architect to decide on the type of furniture and equipment desired. He or she should arrange for staff members to visit other schools with similar furniture and equipment ordered for their own new facility so as to be acquainted with how they are displayed and installed.

School Maintenance

The educational administrator has the ultimate responsibility for maintaining school facilities. The essential elements of his or her responsibility are:

1. The administrator should recommend to the board of education an allocation of funds for the maintenance needs of the school system.

2. The administrator and his or her staff should develop criteria for the hiring of maintenance personnel.

3. The educational administrator should encourage cooperation between teachers, students, and custodians.

4. The educational administrator should encourage the custodial personnel in the development of a work schedule.

5. The educational administrator should make periodic inspection trips of the school building and the playground.

6. The educational administrator should appoint an energy conservation committee. He or she should ensure that plans for energy conservation are included in any new construction program. The administrator should promote energy conservation involving students and staff.
Summary

Chapter V presented the essential elements of the administrator's responsibility for planning educational facilities. The bases for their identification were:

1. The literature reviewed
2. The data collected and analyzed
CHAPTER VI

SUMMARY, CONCLUSIONS, AND RECOMMENDATIONS

Summary

The purpose of this study was to determine the responsibility of the educational administrator for planning educational facilities. In order to provide the basis for identifying the essential elements, literature and research were reviewed to ascertain what has been written to date on the administrator's responsibility for planning facilities, and data were gathered and analyzed on how sixty-three administrators from private and public schools viewed their responsibility for planning educational facilities.

It was revealed from the literature review that the educational administrator is the key person in all steps in the planning process of educational facilities. There was agreement from the literature that the planning of educational facilities needs competent leadership from a person who is acquainted with the school community and who, by position and profession, is qualified to discharge this responsibility. Further, there was considerable agreement that the planning process of educational facilities involves various individuals and groups whose efforts should be coordinated, and that the coordination of an enterprise that engages such a diversity of people with various talents needs leadership from a person who is in a position of authority to create and support friendly and equitable adjustments, rational understanding, and impartial
adjudication if the school system is to obtain quality buildings. The literature revealed that the educational administrator has a key responsibility to perform, though that responsibility has not been clearly defined. The concepts gained from the review of literature made it possible to identify the essential elements of the administrator's responsibility for facility planning.

An analysis of data gathered from sixty-three educational administrators from private and public schools in southwestern Michigan, in addition to experiences gained during the interviews with these administrators regarding their responsibility for planning facilities, provided information which made it possible to identify the essential elements. The essential elements have been extrapolated from section A of table 20 (Appendix B). Those elements not extrapolated from table 20 come from related literature summarized on pages 70-74. Both sources are integrated below.

General School Survey

1. The educational administrator should determine educational needs and desires of the community for the present and the future.

2. The administrator should appoint, with the assistance of his or her educational advisors, members of the survey team.

3. The educational administrator should define the function of the school to the community.

4. The educational administrator should be involved in and lead the discussion of the educational philosophy with the staff, the board of education, and the interested public.

5. The educational administrator should be acquainted with the financial ability of his or her school district community.

6. The educational administrator should be involved in
determining the optimum use of the present school plant.

7. The educational administrator should consider arranging visits for his or her staff, board members, and lay citizens to other schools to review facility-planning techniques.

8. The educational administrator should be acquainted with information concerning population shifts.

9. The educational administrator should present, with his or her recommendations, the findings of the survey team to the board of education.

10. The educational administrator should continually review school surveys and keep abreast with changing needs of his or her community.

New Buildings and Major Renovations

1. The educational administrator should agree with the staff and the board that needs exist for a new building.

2. The educational administrator should organize a planning team for a new building.

3. The educational administrator should prepare and present to the board of education a financial statement for servicing and constructing the new building based upon the taxing capacity of the community.

4. The educational administrator should be involved in forecasting pupil enrollment.

5. The educational administrator should be involved in the selection of the school site.

6. The educational administrator should have an active leadership in the development of educational specifications for a new facility.
7. The educational administrator should, in an advisory capacity, assist the board of education in the selection of the architect.

8. The educational administrator should seek legal advice during the building program.

9. The educational administrator should review the architectural plans with the architect.

10. The educational administrator should inform the school board about architectural aspects of the new building program under consideration.

11. The educational administrator should be involved in planning for flexibility in the proposed building program.

12. The educational administrator should be involved in considering facility needs of different age groups.

13. The educational administrator should be involved in specifying the types of rooms needed in a new building.

14. The educational administrator should be involved in plans for acceptable standards of school buildings.

15. The educational administrator should be involved in recommending room sizes within state guidelines.

16. The educational administrator should be involved in considering facts about building codes, school laws, government permits, etc.

17. The educational administrator should be involved in considering safety factors such as exits, corridor width, etc.

18. The educational administrator should be involved in giving regular reports on the progress of a building program and answering
questions and criticisms from the school board and the community.

19. The educational administrator should be involved in the selection and ordering of furniture and equipment for the new structure.

20. The educational administrator should be involved in the acceptance and the opening of a new structure.

21. The educational administrator should be involved in plans for renovating old school buildings.

School Maintenance

1. The educational administrator should recommend to the board of education an allocation of funds for the maintenance needs of the school system.

2. The educational administrator should, with his or her staff, develop criteria for the hiring of maintenance personnel.

3. The educational administrator should encourage cooperation between teachers, students, and custodians.

4. The educational administrator should assist the custodial personnel in the development of a work schedule.

5. The educational administrator should make periodic inspection trips of the school building and the playground.

6. The educational administrator should be involved in plans for energy conservation.

Conclusions

From the literature surveyed, the information gathered and analyzed, and the experiences gained during this study, the major conclusions are that:
1. The planning of educational facilities requires cooperative efforts from various people including administrators, teachers, board members, students, and parents and should not be expected of the architect alone.

2. The planning of educational facilities is a complicated process and educational administrators in preparation for their responsibility should include a course in educational facilities planning.

3. Most of the private-school administrators had not taken courses related to planning educational facilities, and this was noted as a weakness.

4. The private- and public-school administrators have similar concerns for educational facility planning although the scope of the responsibility of superintendents for facility planning in large school systems is more complex than that of a small school principal.

5. The clarification of the educational administrator's responsibility possesses a potential for improving the process of planning educational facilities and for eliminating the confusion which often arises concerning the responsibility.

6. The stages and characteristics of the historical development of educational facilities by administrators in southwestern Michigan were found to be quite similar to that of Massachusetts.

**Recommendations**

1. Whereas it has been found from the literature reviewed (Campbell, 1973; Thrasher, 1973) and whereas 64 percent of the educational administrators surveyed support that teachers, students, parents, architects, and those concerned with education should be involved in planning educational facilities, it is recommended that the community's
contribution should be sought as much as possible during the planning process.

2. Whereas it was found from this study that only 13 percent of the private-school administrators had taken a School Planning course and only 27 percent had taken a School Survey course, it is recommended that private-school administrators should include such as graduate courses in planning educational facilities during their training and should thereafter attend seminars on facility planning in order to keep abreast with recent changes in the field.

3. In order to make the position of the school administrators all-inclusive, it is recommended that a summary of his or her responsibility in facility planning should be included in the development of the job description.

4. It is recommended that educational administrators should be concerned with educational facility maintenance design during the planning process.

5. Whereas it was found that the educational administrators surveyed had no written guide as to their responsibility for facility planning, it is recommended that educational administrators should consider as a guide the identified essential elements in this study during their involvement in facility planning.

6. Whereas it has been discovered through this research that the historical development of private-school administrators' role for educational facility planning is non-existent in southwestern Michigan, it is recommended that further study should be conducted in this area.

7. It is recommended that this study should be replicated in other
states in the United States to ascertain how other educational administrators view their responsibility for planning educational facilities. Delineation should be made between respondents with actual experience in school construction projects and those lacking such experience.

8. The educational administrators did not feel that they needed to be involved in maintaining educational facilities; however, literature revealed that their concern about maintenance is needed just as much as in other areas in the planning of educational facilities. A maintenance program should not be left either to the control of board members or totally in the hands of some hired groups, as was found in a number of private schools.
APPENDIX A

Educational Administrator Interview Guide

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Section A--Descriptive

1. Length of experience in administration _______ Years

For each of the courses listed below in questions 2-10 place a mark (X) to indicate a Yes or a No response.

Courses you have taken:

2. School Finance 1 Yes; 2 No
3. School Building Planning 1 Yes; 2 No
4. School Survey 1 Yes; 2 No
5. Internal Administration 1 Yes; 2 No
6. High School Curriculum Planning 1 Yes; 2 No
7. Audio-visual Aids 1 Yes; 2 No
8. School Law 1 Yes; 2 No
9. Public Relation 1 Yes; 2 No
10. Elementary School Curriculum Planning 1 Yes; 2 No

Sections B to D ask you to express your belief regarding the importance of the following acts to be appropriate for the educational administrator in facility planning. School survey is used to mean a careful appraisal of the needs and the resources of the community.

For each item in these three sections, respond with numeral:

1. If you feel that the item is unimportant, that is, it has nothing to do with the responsibility of the administrator.
2. If you feel that the item is desirable, that is, it is helpful but little time should be spent on it.
3. If you feel that the item is essential to the administrator's responsibility in facility planning.
4. If you are undecided.

Section B--School Survey

Key: 1 = Unimportant; 2 = Desirable; 3 = Essential; 4 = Undecided

The educational administrator should be involved in:
1. _____ Planning for educational program needed by the community.
2. _____ Preparation of statements on the school's function to the Community
3. _____ Long-range planning
4. _____ Formulating educational philosophy for the community
5. _____ School survey with parents, teachers, and pupils
6. _____ Ensuring maximum use of the existing school plant
7. _____ Considering acceptable standards of school buildings
8. _____ Visiting other schools to review school planning techniques
9. _____ Presenting a building program to the community
10. _____ Continuous revision of school survey
11. _____ Application of information about population shifts
12. _____ Assessing the financial ability of the community
13. _____ Determining room requirements for educational program
14. _____ School survey with the board of education
15. _____ Considering facility needs of different age groups
16. _____ Considering sites for new schools, including costs
17. _____ Considering traffic problems in relation to sites
18. _____ Considering maximum distances children should travel
19. _____ Considering local transportation problems
20. _____ Plans of how to use survey consultants

Section C—New Building and Major Renovation

Key: 1 = Unimportant; 2 = Desirable; 3 = Essential; 4 = Undecided

The educational administrator should be involved in:

1. _____ Seeking legal advice during a building program
2. _____ Hiring of the architect
3. _____ Selecting educational consultant, when needed
4. _____ Organizing community planning groups
5. _____ Forecasting pupil enrollment
6. _____ Applying information about the taxing capacity of the community
7. _____ Developing educational specifications for new building
8. _____ Specifying the types of room needed.
9. ____ Drawing up the architect's contracts
10. ____ Drawing up the contractor's contracts
11. ____ Informing the school board on architectural aspects pertaining to schools
12. ____ Informing the architect about educational aspects pertaining to schools
13. ____ Considering facts about building codes, school laws, governmental permits, etc.
14. ____ Obtaining approval of governmental agencies on various stages of the contract
15. ____ Advertising and securing of bids for a building program
16. ____ Presenting the building campaign, with the school board, to the community
17. ____ Answering questions and criticisms from the public concerning the building program
18. ____ On-site supervision during construction
19. ____ Regular oral or written reports on the progress of a building program to the school board and the community
20. ____ Financial plans for servicing the building program
21. ____ Securing specific building materials and color selections desired
22. ____ Specifying building equipment and furnishings
23. ____ Recommending room sizes, within the guidelines of state regulations
24. ____ Considering safety factors such as exits, stair rails, corridor width, etc.
25. ____ Planning for flexibility in the use of school plant
26. ____ Assessing the community's feeling about the resultant design
27. ____ Orientating the staff in the use of the new building
28. ____ Plans for building renovations

Section D--School Maintenance

Key: 1 = Unimportant; 2 = Desirable; 3 = Essential; 4 = Undecided

In maintenance, the practising educational administrator should be involved in:

1. ____ Continuous improvement and repair programs
2. ____ Financing repair programs
3. ____ Providing for removal of waste
4. ___ Planning for projects such as window washing, room painting, etc.
5. ___ Periodic inspection trips of the building and the playground
6. ___ Selecting and hiring a custodian
7. ___ Training and indoctrinating the custodians
8. ___ Securing equipment for custodian's needs
9. ___ Coordinating teachers/pupils' cooperation with the custodians
10. ___ Coordinating the custodian's schedule and its execution
11. ___ Preparing an adequate pay schedule for custodial help
12. ___ Providing information about the latest methods and equipment in the field of maintenance
13. ___ Plans for energy conservation
14. ___ Plans for day-to-day repair problems that may arise
15. ___ Long-range plans for maintenance problems such as footing, chimney repair, etc.
APPENDIX B

Items Ranked by Importance
TABLE 20

ITEMS RANKED BY IMPORTANCE
(Percentages of "Essential" Ratings by Administrators)

<table>
<thead>
<tr>
<th>Rank</th>
<th>Item</th>
<th>Combined</th>
<th>Pri-</th>
<th>Pub-</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>bined*</td>
<td>vate*</td>
<td>lic*</td>
</tr>
</tbody>
</table>

SECTION A
(Combined responses of 60% or above)

The educational administrator should be involved in:

General School Survey

1. Plans for educational needs and desires of the community for the present and the future 95 97 94
2. School survey with the school board 95 97 94
3. School survey with parents, teachers, and pupils 64 63 64
4. Defining the function of the school to the community 84 83 85
5. Formulation of a community's educational philosophy 67 60 73
6. Applying information about financial ability of the community 68 50 85
7. Applying information on population shifts 60 40 79
8. Presenting the results of a school survey and ensuring that the results are developed into long-range plans 84 83 85

New Building and Major Renovation

1. Presenting, with the school board, building campaign to the community 84 83 85
2. Preparing and presenting to the school board a financial statement for servicing the new building 62 40 82
3. Considering the taxing capacity of the school community 67 50 82
4. Forecasting pupil enrollment 79 87 73
5. Developing educational specifications for a new facility 64 70 58
6. Seeking legal advice during a building program 64 47 79
7. Reviewing architectural plans with the architect 64 53 73
8. Informing the school board on architectural matters pertaining to schools 79 63 94

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Table 20 Continued

<table>
<thead>
<tr>
<th>Rank</th>
<th>Item</th>
<th>Combined</th>
<th>Private*</th>
<th>Public*</th>
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<tr>
<td>9.</td>
<td>Plans for flexibility in the proposed building program</td>
<td>76</td>
<td>73</td>
<td>79</td>
</tr>
<tr>
<td>10.</td>
<td>Considering facility needs of different age groups</td>
<td>71</td>
<td>70</td>
<td>73</td>
</tr>
<tr>
<td>11.</td>
<td>Specifying types of rooms needed</td>
<td>71</td>
<td>83</td>
<td>61</td>
</tr>
<tr>
<td>12.</td>
<td>Plans for acceptable standards of school buildings</td>
<td>70</td>
<td>73</td>
<td>67</td>
</tr>
<tr>
<td>13.</td>
<td>Recommending room sizes within state guidelines</td>
<td>62</td>
<td>83</td>
<td>43</td>
</tr>
<tr>
<td>14.</td>
<td>Considering facts about building codes, school laws, governmental permits, etc.</td>
<td>62</td>
<td>83</td>
<td>43</td>
</tr>
<tr>
<td>15.</td>
<td>Considering safety factors such as exits</td>
<td>60</td>
<td>70</td>
<td>52</td>
</tr>
<tr>
<td>16.</td>
<td>Regular reports on the progress of a building program to the school board and community</td>
<td>65</td>
<td>50</td>
<td>79</td>
</tr>
<tr>
<td>17.</td>
<td>Answering questions and criticisms from the public</td>
<td>84</td>
<td>80</td>
<td>88</td>
</tr>
<tr>
<td>18.</td>
<td>Orientating the staff in the use of the new building</td>
<td>71</td>
<td>87</td>
<td>58</td>
</tr>
<tr>
<td>19.</td>
<td>Plans for building renovations</td>
<td>73</td>
<td>80</td>
<td>67</td>
</tr>
</tbody>
</table>

School Maintenance

1. Periodic inspection of school building and playground | 66 | 77 | 52 |

SECTION B

(Combined responses of 40% to 59%)

1. Hiring the architect | 54 | 20 | 85 |
2. Selecting educational consultants when needed | 59 | 43 | 73 |
3. Financing repair programs | 52 | 30 | 73 |
4. Considering sites for new schools, including costs | 50 | 30 | 70 |
5. Assessing the community's feeling about the resultant design | 59 | 50 | 67 |
6. Presenting a building program to the community | 48 | 27 | 67 |
7. Plans for energy conservation | 57 | 50 | 64 |
8. Plans for maximum use of school plant | 51 | 37 | 64 |
9. Organizing community planning groups | 46 | 33 | 58 |
10. Obtaining approval of governmental agencies for various stages of the contract | 51 | 43 | 58 |
11. Preparing adequate pay schedule for custodial help | 46 | 33 | 58 |
Table 20 Continued

<table>
<thead>
<tr>
<th>Rank</th>
<th>Item</th>
<th>Com-</th>
<th>Pri-</th>
<th>Pub-</th>
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<tr>
<td>12.</td>
<td>Considering maximum distances children should travel</td>
<td>49</td>
<td>40</td>
<td>58</td>
</tr>
<tr>
<td>13.</td>
<td>Continuous improvement and repair programs</td>
<td>56</td>
<td>57</td>
<td>55</td>
</tr>
<tr>
<td>14.</td>
<td>Considering traffic problems in relation to sites</td>
<td>52</td>
<td>53</td>
<td>52</td>
</tr>
<tr>
<td>15.</td>
<td>Continuous revision of school survey</td>
<td>46</td>
<td>53</td>
<td>52</td>
</tr>
<tr>
<td>16.</td>
<td>Long-range maintenance problems such as footings</td>
<td>48</td>
<td>50</td>
<td>46</td>
</tr>
<tr>
<td>17.</td>
<td>Specifying building equipment and furnishings</td>
<td>46</td>
<td>50</td>
<td>42</td>
</tr>
<tr>
<td>18.</td>
<td>Considering transportation problems</td>
<td>46</td>
<td>50</td>
<td>42</td>
</tr>
<tr>
<td>19.</td>
<td>Determining room requirements for educational program</td>
<td>51</td>
<td>63</td>
<td>39</td>
</tr>
<tr>
<td>20.</td>
<td>Coordinating teachers'/pupils' cooperation with the custodians</td>
<td>52</td>
<td>77</td>
<td>30</td>
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SECTION C
(Combined Responses of 39% or below)

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<th>Rank</th>
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<th>Com-</th>
<th>Pri-</th>
<th>Pub-</th>
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<tbody>
<tr>
<td>1.</td>
<td>Planning for projects such as window washing, room painting, etc.</td>
<td>30</td>
<td>37</td>
<td>24</td>
</tr>
<tr>
<td>2.</td>
<td>Securing equipment for custodian's needs</td>
<td>29</td>
<td>33</td>
<td>24</td>
</tr>
<tr>
<td>3.</td>
<td>Plans on how to use survey consultants</td>
<td>22</td>
<td>20</td>
<td>24</td>
</tr>
<tr>
<td>4.</td>
<td>Drawing up the architect's contracts</td>
<td>22</td>
<td>20</td>
<td>24</td>
</tr>
<tr>
<td>5.</td>
<td>Providing for removal of waste</td>
<td>21</td>
<td>17</td>
<td>24</td>
</tr>
<tr>
<td>6.</td>
<td>Visiting other schools to review school planning techniques</td>
<td>22</td>
<td>20</td>
<td>24</td>
</tr>
<tr>
<td>7.</td>
<td>Selecting and hiring a custodian</td>
<td>36</td>
<td>50</td>
<td>21</td>
</tr>
<tr>
<td>8.</td>
<td>Advertising and securing of bids for a building program</td>
<td>16</td>
<td>10</td>
<td>21</td>
</tr>
<tr>
<td>9.</td>
<td>Training and indoctrinating the custodians</td>
<td>31</td>
<td>43</td>
<td>18</td>
</tr>
<tr>
<td>10.</td>
<td>On-site supervision during construction</td>
<td>19</td>
<td>20</td>
<td>18</td>
</tr>
<tr>
<td>11.</td>
<td>Coordinating the custodian's schedule and its execution</td>
<td>31</td>
<td>47</td>
<td>15</td>
</tr>
<tr>
<td>12.</td>
<td>Securing specific building materials and color selections desired</td>
<td>28</td>
<td>40</td>
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<tr>
<td>13.</td>
<td>Drawing up the contractor's contracts</td>
<td>9</td>
<td>3</td>
<td>15</td>
</tr>
<tr>
<td>14.</td>
<td>Plans for day-to-day repair problems that may arise</td>
<td>31</td>
<td>50</td>
<td>12</td>
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<tr>
<td>15.</td>
<td>Providing information about the latest methods and equipment in the field of maintenance</td>
<td>13</td>
<td>13</td>
<td>12</td>
</tr>
</tbody>
</table>

*Percentages of private- and public-school administrators in section A of this table are the same as in table 12.
APPENDIX C

The List of Private-School Administrators Visited
Private-School Educational Administrators

Anderson, Bruce .................................................. E. B. Garret S.D.A., Benton Harbor
Asire, Harold E. .................................................. Emmanuc Baptist, Niles
Brohn, David .......................................................... St. Paul's Lutheran, South Haven
Cassano, Edmond .................................................. Eau Claire S.D.A., Eau Claire
Clough, Wayne .................................................. Goble S.D.A. Junior Academy, Gobles
Cahill, Maureen .................................................. St. Mary's School, Niles
Collyard, Larry S. .................................................. St. Paul's Lutheran, Sodus
Cooper, Gilbert B. .................................................. Calvin Center S.D.A., Cassapolis
Dahnke, Walter .................................................. Faith Baptist, Mattawan
Detwiler, John W. .................................................. Heritage Christian Academy, New Buffalo
Edenfield, Harry .................................................. Immanuel Lutheran, Bridgman
Herbel, Ray .......................................................... Niles S.D.A., Niles
Haferman, James .................................................. Grace Lutheran, Eau Claire
Johnston, Robert G. .................................................. Michigan Lutheran High, St. Joseph
Koch, Timothy .................................................. Faith Lutheran, Coloma
Luerman, Joan .................................................. St. Mary of the Lake, New Buffalo
Mayfield, Brian K. .................................................. Grace Christian, Watervliet
Nolte, Kenneth R. .................................................. Grace Lutheran, St. Joseph
Orrison, Richard T. .................................................. Andrews University School, Berrien Springs
Potratz, Philip .................................................. St. Mathews Lutheran, Coloma
Poppe, Richard A. .................................................. Trinity Lutheran, St. Joseph
Reisenbichler, Melvin .................................................. Trinity Lutheran, Sawyer
Rayan, Patrick H. .................................................. Lake Michigan Catholic, St. Joseph
Rose, Roy H. .................................................. Trinity Lutheran, Bangor
Siepmann, M. R. .................................................. Berrien Springs S.D.A. Church School, Berrien Springs
Schmidt, Ronald .................................................. St. Paul's Lutheran, Stevensville
Tobe, Donald E. .................................................. St. Joseph Catholic, Watervliet
Vidmar, Michael J. .................................................. St. Basil, South Haven
Winter, Ernest A. .................................................. Christ Lutheran, Stevensville
Wagtowicz, Thomas P. .................................................. Glenwood Union S.D.A., Dowagiac
APPENDIX D

The List of Public-School Administrators Visited
<table>
<thead>
<tr>
<th>Name</th>
<th>Location</th>
</tr>
</thead>
<tbody>
<tr>
<td>Bandlow, Ray</td>
<td>Lawton</td>
</tr>
<tr>
<td>Barrett, William</td>
<td>Coloma</td>
</tr>
<tr>
<td>Clark, Wayne</td>
<td>Edwardsburg</td>
</tr>
<tr>
<td>Dragoo, Donald E.</td>
<td>Bloomingdale</td>
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<tr>
<td>Dunn, Gilbert</td>
<td>Cassopolis</td>
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<tr>
<td>Fairman, William</td>
<td>Niles</td>
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<tr>
<td>Gaarde, Harold</td>
<td>South Haven</td>
</tr>
<tr>
<td>Gravitt, Samuel A.</td>
<td>Watervliet</td>
</tr>
<tr>
<td>Hansen, Robert L.</td>
<td>Paw Paw</td>
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<tr>
<td>Hawkins, Alfred</td>
<td>Covert</td>
</tr>
<tr>
<td>Hawkins, James</td>
<td>Benton Harbor</td>
</tr>
<tr>
<td>Haynes, Marla</td>
<td>Riverside</td>
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<tr>
<td>Hellenga, Wayne</td>
<td>Decatur</td>
</tr>
<tr>
<td>Hogan, Earl</td>
<td>Buchanan</td>
</tr>
<tr>
<td>Holtgren, Mike</td>
<td>Brandywine</td>
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<tr>
<td>Horie, William J.</td>
<td>Eau Claire</td>
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<tr>
<td>Johnson, Richard L.</td>
<td>New Buffalo</td>
</tr>
<tr>
<td>Lamb, Thomas S.</td>
<td>Marcellus</td>
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<tr>
<td>Lechner, David B.</td>
<td>Bridgman</td>
</tr>
<tr>
<td>Leversee, Guy A.</td>
<td>Gobles</td>
</tr>
<tr>
<td>Pobuda, Robert E.</td>
<td>Hartford</td>
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<tr>
<td>Pope, George</td>
<td>River School</td>
</tr>
<tr>
<td>Porrell, David J.</td>
<td>Galien</td>
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<tr>
<td>Shaw, Ernest J.</td>
<td>Van Buren Intermediate</td>
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<tr>
<td>Schmidt, Fred J.</td>
<td>Lakeshore</td>
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<tr>
<td>Schuster, Jon N.</td>
<td>Berrien Springs</td>
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<tr>
<td>Sreboth, Raymond M.</td>
<td>Berrien County Intermediate</td>
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<tr>
<td>Stacey, Lionel J.</td>
<td>Dowagiac</td>
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<tr>
<td>Stap, Fred A.</td>
<td>Bangor</td>
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<tr>
<td>Stoll, Richard</td>
<td>Lawrence</td>
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<tr>
<td>Towe, Arthur</td>
<td>Lewis Cass Intermediate</td>
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<tr>
<td>Weeldreyer, James</td>
<td>Mattawan</td>
</tr>
<tr>
<td>Williams, Charles</td>
<td>River Valley</td>
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</table>
BIBLIOGRAPHY


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Smith, James H. *Legal Limitations on Bonds and Taxation for Public School Buildings.*


VITA

Name: Gado Appollo Ongwela

Date and Place of Birth: April 16, 1946; Homa Bay, Kenya, East Africa

Collegiate Institutions and Diplomas:

Spicer Memorial College, India; Bachelor of Arts, 1971.

Positions Held:

1966 Teacher, Osodo Primary School, South Nyanza, Kenya.
1979-1980 Graduate Assistant and Director of International Book Exchange, Andrews University, Michigan, U.S.A.

Professional Membership:

American Mathematical Association.

Honors: