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## Predesign educational planning for Ohio school facilities as perceived by district superintendents

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PREDESIGN EDUCATIONAL PLANNING FOR OHIO SCHOOL FACILITIES  
AS PERCEIVED BY DISTRICT SUPERINTENDENTS

DISSERTATION

In Partial Fulfillment of the Requirements for  
the Doctorate of Philosophy in Educational Leadership

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THE UNIVERSITY OF DAYTON

DAYTON, OHIO

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PREDESIGN EDUCATIONAL PLANNING FOR OHIO SCHOOL FACILITIES  
AS PERCEIVED BY DISTRICT SUPERINTENDENTS

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2008

PREDESIGN EDUCATIONAL PLANNING FOR OHIO SCHOOL FACILITIES  
AS PERCEIVED BY DISTRICT SUPERINTENDENTS

By

Todd Allen Rappold, Ph.D.

The University of Dayton, 2008

Theodore J. Kowalski, Ph.D.

The Ohio school construction Rebuilding Program requires district officials to take necessary steps to ensure that facility projects are designed to *Design Manual* guidelines. Normative predesign educational planning is a process that integrates mission, vision, stakeholder expectations, and instructional objectives into performance specifications. Ohio's Rebuilding Program, however, does not require this process.

This study focused on the extent to which normative predesign educational planning was applied in relation to construction projects approved between January 1, 2000, and December 31, 2004. Characteristics of normative planning were derived from a literature review and used to develop a survey sent to superintendents comprising the study population. The two primary objectives were to determine the quantity and quality of predesign educational planning that occurred and to determine

if planning quality was associated with one or more of the following variables: levels of state construction funding, district enrollment, and district taxable wealth.

Findings show that the quantity and quality of predesign educational planning was moderate. The most commonly applied planning activity was involving teachers in predesign educational planning; the least commonly applied planning activity was utilizing an independently hired educational planner. Correlations, applied as descriptive statistics, indicated that associations between planning quality and the three selected variables were small.

Findings raise important questions about school facility planning in a state in which overall construction expenditures and state support for school construction have increased substantially since 1999. Specifically, marginal levels of predesign planning raise concerns about the extent to which new schools are actually being designed to accommodate current and future programming as framed by a district and school visions. Additional research is recommended to determine why specific predesign planning activities are not required and why superintendents opt not to apply these activities to a greater extent.

I dedicate this to the people that cause my life to be full of love, purpose, and meaning. It is to my father Thomas, to my wife Rebecca, and sons Ben and Brett.

## ACKNOWLEDGEMENTS

I express sincere appreciation to the members of my committee who provided encouragement and direction in assisting me with successful completion of this study.

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# CHAPTER 1

## INTRODUCTION

### Overview

Every day, school construction takes place across the state of Ohio. Some projects proceed smoothly, whereas others are stalled by complications. Often, successful predesign educational planning distinguishes school facility projects that are completed on time, under budget, and on target with a district's objectives from those that are not. In addition, new school construction that adheres to principles of predesign educational planning can support educational programs and the learning process (Castaldi, 1994; Earthman, 2000; Perkins, 2001). The extent to which Ohio school district officials engage in predesign educational planning procedures, however, is unknown.

Since 1999, the number of school construction projects in Ohio has been increasing (Lackney, 2001; Ohio School Facilities Commission [OSFC], 2003). From 1999 through 2004, over 325 schools, in 185 districts in Ohio were either constructed or renovated (OSFC, 2004a). All building projects, even the most successful, face some problems. Despite the challenges and thousands of decisions required for the construction of a school facility, school districts have the capacity to successfully complete building programs that finish on time and within budget. The use of predesign educational planning that is validated through research, the literature, and the experiences of practitioners in the field can ensure that the educational facility meets or even exceeds stakeholder expectations (Tanner & Lackney, 2006).

On September 9, 1999, Ohio's governor, Robert Taft, unveiled the Rebuilding Ohio Schools: A 12-Year Commitment Program, a plan for replacing or repairing Ohio's aging school facilities (OSFC, 2003). According to the OSFC statistical data, over \$3.4 billion has been spent on renovation or new construction of Ohio school buildings from 1999 through 2005 (OSFC, 2004a). Through this program, the state of Ohio will provide \$10.2 billion over a 12-year period to construct and renovate schools. This substantial sum does not include the millions of dollars that have been or will be raised locally to pay for school construction.

As a result of the Rebuilding Program, by 2004, the state of Ohio was spending more than \$2 million per day to construct new schools (OSFC, 2004a). The expenditure of such a significant amount of resources and finances resulted in the state establishing parameters to ensure a uniform level of construction. To administer the Rebuilding Program, the Ohio School Facilities Commission publishes the *Ohio School Design Manual* (2004c) to offer guidance and specifications during the design and construction phase of a school built in Ohio. The nearly 2,000 page *Design Manual* detailed specific items and materials that must be included within each school construction project in Ohio that is administered within the Rebuilding Program (Moore, 2001; OSFC, 2004c).

The *Design Manual* details the mandatory guidelines for districts that qualify for state assistance. However, flexibility and individualization are also listed as important features for new school construction (OSFC, 2003): "Of the many benefits the *Design Manual* offers, none is more important than ... flexibility and local choice" (OSFC, 2004c, p. 100). School districts that qualify for state assistance are

required to adhere to prescribed requirements for construction material selections and design specifications. However, there is an absence of similar requirements relating to predesign educational planning. As a result, predesign educational planning for Ohio school construction could vary quantitatively and qualitatively.

Predesign educational planning for school facilities can be complicated and challenging (Perkins, 2001; Tanner & Lackney, 2006). Effective predesign educational planning requires the input of a wide variety of professionals and future occupants to ensure that the school facility will not only address the current educational programs but also be capable of meeting the needs over the life of the building (Tanner & Lackney, 2006). Utilizing recommended predesign educational planning items can address the needs and goals of a large number of varied stakeholders prior to the design and construction phase of a school (Graves, 1993; Perkins, 2001). Predesign educational planning includes the following: utilizing the district's vision in the pre-design educational planning phase (Carey, 2004; Earthman, 2000; Graves, 1993; Henry, 2000; Perkins, 2001; Tanner & Lackney, 2006), integrating instructional objectives into physical spaces (Tanner & Lackney, 2006), consulting with stakeholders (Beaumont, 2003; Doherty & Futral, 2000; Fox, 1999; Graves, 1993), identifying and integrating educational specifications (Castaldi, 1994; Graves, 1993; Kowalski, 2002; Perkins, 2001; Tanner & Lackney, 2006), utilizing an educational planner (Abramson, 2005; Fielding, 1999b; Sausner, 2002), and utilizing long-range academic goals (Carey, 2004; Castaldi, 1994; Graves, 1993; Henry, 2000; Perkins, 2001; Tanner & Lackney, 2006).

The OSFC's current policy of encouraging flexibility and local choice with regard to the utilization of predesign educational planning may be considered advantageous by local school officials. This policy could be viewed as an encouragement to plan and design schools that will be distinctive to each individual district. However, Ohio's absence of predesign educational planning requirements is atypical when compared to other states. For example, Kentucky, Mississippi, and Wyoming are examples of states having policies that require specific predesign educational planning requirements to be included in school projects (Beaumont, 2003; Griffith & Fonda, 2007).

School construction is costly and time-consuming. According to Bittle (1996), "Assuming a life expectancy of sixty to seventy years for a well-constructed facility, the approximately three to four years of planning represents a relatively short but critical phase in its overall life" (p. 17). Therefore, it is imperative for a district to build a new school to the best of its ability the first time.

#### Statement of the Problem

After surveying 10,000 school buildings nationwide in 1995, the U.S. General Accounting Office (GAO) identified Ohio as being among the states having the most school facilities in need of repair (U.S. General Accounting Office, 1995). Furthermore, in 1996, the GAO ranked Ohio in the top 5 among the 50 states in the percentage of schools reporting the need to spend money to repair or upgrade facilities to good overall condition (U.S. General Accounting Office, 1996).

The GAO reports were not the first time the condition of Ohio's schools had been scrutinized. These conditions had been addressed in the 1950s when the state

legislature enacted The Classroom Facilities Act (Augenblick & Silverstein, 2002). However, from 1957 to 1997, the state appropriated only \$508 million for school construction (OSFC, 2004a). As a result of the deplorable school conditions and the Ohio Supreme Court ruling that the school funding program was inequitable (Lier, 2001), the state adopted new policy. The Rebuilding Program initiative became the largest public works project in the history of Ohio (OSFC, 2004a). With the introduction of the Rebuilding Program, there has been a significant increase in school construction projects (Lackney, 2001; OSFC, 2003).

Currently, Ohio districts that qualify for state financial assistance for school construction are required to adhere to specific construction, equipment, and design guidelines contained in the *Design Manual*. Adhering to these specifications, however, does not ensure that the design of a school is based on instructional objectives and intended delivery systems. In fact, there is a lack of specific predesign educational planning requirements in the *Design Manual* for new schools. Therefore, district officials are not required to adhere to predesign educational planning procedures recommended by both the architectural and school administration professions; and, the extent to which they have engaged in such planning is unknown.

Predesign educational planning is intended to ensure that form follows function in school construction projects. The lack of information about the use of this critical process is arguably problematic, given that unprecedented levels of state funds are being used for public school construction. For example, a lack of facility predesign educational planning could result in instructional environments that hinder rather than facilitate the delivery of a broad curriculum and the implementation of

effective instructional strategies. To maximize the effectiveness of state support for school construction, policymakers, scholars, and practitioners need to focus more directly on the extent to which predesign instructional planning is occurring.

#### Purposes of the Study

The overall purposes of this study were (a) to determine the quantity and quality of predesign educational planning that occurred for new Ohio elementary and secondary schools in the calendar years 2000 through 2004 (the first 5 years of the current Rebuilding Program) and (b) to determine if selected factors were associated with the quality of predesign educational planning. More precisely, data were collected and then analyzed to determine the following:

1. the extent to which the predesign educational planning occurred in relation to new elementary and secondary public schools,
2. the extent to which such planning was congruous with the professional knowledge base, and
3. the extent to which the quality of such planning was associated with (a) percentages of state funding provided for the projects; (b) school district enrollment, as determined by district average daily membership (ADM); and (c) district wealth as determined by district assessed valuation per pupil (AVPP).

#### Significance of the Study

In light of the fact that the current state funding policy has increased the quantity of school construction in Ohio, the data, findings, conclusions, and recommendations included in this study provide valuable information to both

educators and policymakers. Specifically, this study provides a resource that can be used to (a) evaluate the effectiveness of existing policy, (b) inform current practices, and (c) improve future policy and practices. Moreover, the research contributes to the existing knowledge base in school administration and serves as a catalyst for additional research.

### Delimitations of the Study

The scope of this study was delimited by the following conditions.

1. The population included only projects that met two criteria: (a) The project occurred in an Ohio public school district, and (b) the superintendent in office prior to predesign was still in office during the 2006-2007 school year. The decision regarding the second criterion was based on the belief that having continuity in the superintendent position was necessary to obtain accurate information about predesign planning for the projects in the study population. Charter schools, though legally classified as public schools, were excluded.
2. Data were reported only for projects in which the predesign phase occurred during calendar years 2000 through 2004.
3. Only new school construction projects were included in this study. Projects that were renovations, additions, or a combination of renovations and additions were excluded.
4. Only projects approved for OSFC financial assistance were included in this study.

5. District enrollment (ADM) and wealth (AVPP) were determined solely by 2004 official data.

### Research Questions

The following research questions guided this study.

1. To what extent did predesign educational facility planning occur in relation to new construction projects that constitute this study's population?
2. To what extent did the planning comply with normative standards found in the professional knowledge base?
3. Does a relationship exist between the quality of predesign educational planning and any of the following variables: (a) percentage of state funding for the projects, (b) district enrollment (ADM), and (c) district wealth (AVPP)?

### Methodology

The study's population consisted of superintendents in districts that had approval for constructing a new school during the 5-year period of 2000 through 2004 and who were still employed as the superintendent in the same district as of March 1, 2007. The 109 superintendents that met the criteria were identified from the OSFC official database (see Appendix A). The population ( $N = 109$ ) was identified using the *Ohio Schools Facilities Commission Annual Report* (see Appendix A). This document identifies schools approved for OSFC funding during the period of calendar years 2000 through 2004. This time period was chosen because it encompassed the initial 5 years of the Rebuilding of Ohio's Schools Program.

Respondents selected for this study were superintendents identified from school districts that constructed public schools during the period of 2000 through 2004 and were still employed by the district as of March 1, 2007. Names and business addresses for these superintendents were obtained from the *Ohio Department of Education 2006 School Directory* (Ohio Department of Education, 2006).

Three other data sources were as follows.

1. the percentage of state funding for every project in the population approved by the OSFC was determined by data reported in the OSFC's *Annual Report 2005*.

2. the 2004 ADMs and AVPPs were obtained from official Ohio Department of Education data for 2004.

3. the quantity and quality of predesign educational planning were determined by the frequency and mean of the survey results supplied by the superintendents.

A cover letter and survey instrument (see Appendix B) were developed for use in this study and then sent via regular mail to the identified superintendents in the population. A survey was developed by the researcher to classify the extent to which predesign educational planning procedures both were utilized and met normative standards included in the professional knowledge base. Superintendents indicated on a scale of 1 to 4 the extent to which each item was utilized during the predesign educational planning phase of the construction project. Data were tabulated and analyzed by the researcher.

The study was a nonexperimental research study using descriptive statistics. Frequencies and percentages were calculated in relation to answering Research Question 1 and means were calculated in relation to answering Research Question 2.

Correlations were calculated in relation to answering Research Question 3 and the results were used to describe the strength of association between the variables.

The survey questions developed included recommended predesign educational planning items cited from practitioners and experts in the field of educational facility planning. Outcomes were reported both in the quantity and quality of predesign educational planning as reported from the survey results. Quality was designated as either compliant or noncompliant in utilizing the recommended items cited from the rubric. Compliance for Research Question 2 was designated from a score of 3.0 or higher from individual surveyed responses. Research Question 3 was designated from a cumulative score from all eight surveyed questions.

To examine Research Question 3, the researcher conducted a Chronbach's alpha test of reliability on the eight predesign educational facility survey items. A Chronbach's alpha tests the internal consistency of a survey and whether items are measuring a unidimensional construct. Alpha coefficients range from 0 to 1, with .7 representing acceptable reliability (according to Devillis, 2003). A composite score was calculated by summing the eight survey items to create an overall predesign educational planning compliance score. If an acceptable Chronbach's alpha score was not calculated from summing the eight individual surveyed responses, the individual quality scores from Research Question 2 would be used to calculate the correlations.

Correlations were applied descriptively among the variables of the percentage of state funding, districts' enrollment, districts' wealth, and the quality of predesign educational planning. A composite score was created by summing the eight survey responses to create an overall predesign educational planning score of quality.

Pearson  $r$  correlations were conducted to assess if relationships existed among the cumulative score of the eight predesign educational facility survey responses, percentage of state funding, district ADM, and AVPP.

### Operational Terms

The following terms are defined to ensure the consistent understanding of terminology in this study.

*Assessed Valuation Per Pupil (AVPP)*: Assessed valuation per pupil is a statistic calculated by dividing a school district's assessed valuation by its official enrollment, typically its average daily membership (Stabile, 2003).

*Assessment consultant*: The assessment consultant is the individual responsible for assessing the condition of school buildings, evaluating the overall building needs of the district, estimating costs, and assisting in developing the master facilities plan (OSFC, 2004c).

*Average Daily Membership (ADM)*: The average daily membership is the total number of students attending a public school district. This is a head count of students, taken during the first full week in October in which every student is counted as one. During this week in October, school districts count their students on a daily basis. At the conclusion of the week, for each student, the number of days present and excused will be divided by 5 days to calculate the average daily membership (Ohio Department of Education, 2004).

*Classroom Facilities Assistance Program (CFAP)*: The classroom facilities assistance program is one of three construction programs included in Ohio's current Rebuilding Program. The classroom facilities assistance program evaluates the needs

of an entire district and then provides the funding for all necessary construction and renovation. It also ranks each district across the state of Ohio based upon the need for improvements and financial rankings (OSFC, 2003).

*Components:* Components are the individual criteria and predetermined expectations included within the rubric.

*Construction Manager (CM):* The Ohio School Facilities Commission defines the construction manager as the liaison for the school district, the Ohio School Facilities Commission, and the construction companies. The construction manager's responsibilities are varied, but his or her most important responsibility is for "scheduling, estimating, and providing overall coordination for projects" (OSFC, 2004c, p. 1020).

*Educational consultant:* The educational consultant is the "planning specialist who identifies educational needs for a school-facility project; usually a professor specializing in school-facility planning" (Kowalski, 2002, p. 265).

*Educational specifications:* Educational specifications are developed and identified by one or more educators within the district and include the goals and culture of the school district (Brubaker, 1998; Perkins, 2001). They are summarized in a "document containing information about the intended uses of a school building (e.g., how instruction will occur, the scope of the curriculum, and so on);" which is "used by architects to design the school; [educational specifications are] also called [an] educational program statement" (Kowalski, 2002, p. 265).

*Elementary school:* An elementary school includes any combination of grades kindergarten through the Grade 8 and offers subjects approved by the state Board of Education (Carey, 2003).

*Expedited Local Partnership Program (ELPP):* The Expedited Local Partnership Program allows school districts to fund a portion of their construction through local monies prior to the time state funding is available through the Classroom Facilities Assistance Program. Once a district qualifies for CFAP, it is reimbursed for a predetermined percentage of funding for construction completed under the ELPP (OSFC, 2005).

*New school construction:* New school construction is the construction of a new school facility, which does not include renovations or additions to an existing school facility.

*Normative planning:* Normative planning is the ideal manner in which planning should function.

*Ohio School Facilities Commission (OSFC):* The OSFC is the state agency created to administer the Rebuilding Ohio's Schools program. In addition, the OSFC oversees the design, construction, and financial assistance of all Ohio school districts participating in the Rebuilding Program (OSFC, 2005).

*Predesign educational planning:* Predesign educational planning is the stage prior to the design phase of construction. Predesign educational planning includes items such as: utilizing the district's vision in the pre-design educational planning phase (Carey, 2004; Earthman, 2000; Graves, 1993; Henry, 2000; Perkins, 2001; Tanner & Lackney, 2006), integrating instructional objectives into physical spaces

(Tanner & Lackney, 2006), consulting with stakeholders (Beaumont, 2003; Doherty & Futral, 2000; Fox, 1999; Graves, 1993), identifying and integrating educational specifications (Castaldi, 1994; Graves, 1993; Kowalski, 2002; Perkins, 2001; Tanner & Lackney, 2006), utilizing an educational planner (Abramson, 2005; Fielding, 1999b; Sausner, 2002), and utilizing long-range academic goals (Carey, 2004; Castaldi, 1994; Graves, 1993; Henry, 2000; Perkins, 2001; Tanner & Lackney, 2006).

*Preplanning:* The Ohio School Facilities Commission defines preplanning as the period in which “the school district establishes partnerships with the community, establishes and refines their educational program, and connects their educational program ... with their shared vision of the facilities” (OSFC, 2004c, p. 1020).

*Public school:* A public school is open to all students. Public schools are supported by taxation and by money raised locally or by the state, either in whole or in part, and regulated by statutory law (Carey, 2003). Although charter schools are also defined as public schools, they were delimited from this study because they do not qualify for a percentage of state assistance under the Rebuilding Program.

*Regional program consultant:* The regional program consultant “coordinates, manages, monitors, and plans the resources and schedule for the facilities assessment, student enrollment study, and master facilities plan for assigned school districts” (OSFC, 2004c, p. 1020).

*Rubric:* A rubric is defined as “a tool for assessing performance according to predetermined expectations and criteria. These specific sets of criteria clearly define a range of acceptable and unacceptable performance” (Taggart, Phifer, Nixon, & Wood, 1998, p. 57).

*School district:* A school district is a term “applied to a legally constituted school entity which is governed by a Board of Education. They may include city, local, exempted village, and joint vocational districts” (OSFC, 2004c, p. 1300).

*Secondary school:* A secondary school contains any combination of Grades 7 through 12 and offers subjects approved by the state board of education that are more advanced than those taught in elementary schools (Carey, 2003).

*State funding of construction:* According to the Ohio School Facilities Commission state funding of construction is the calculation of assessed valuation, enrollment projections, square footage allowances, the scope of work, and budget for each of the district’s classroom facilities (OSFC, 2004c, p. 1020). “Once the master facilities plan is developed a program specific calculation worksheet will be used to determine the state and local share” (OSFC, 2004c, pp. 1020-1021).

### Organization of the Study

Chapter 1 introduces the study, problem statement, significance of the problem, and research questions. Chapter 2 contains a review of the related literature that establishes a framework for the research and a basis for drawing conclusions. Chapter 3 discusses the methodology of the study. Chapter 4 reports the findings in relation to the research questions. Finally, chapter 5 provides a summary of the findings, conclusions, and recommendations.

## CHAPTER 2

### REVIEW OF THE LITERATURE

#### Introduction

A groundbreaking ceremony for a new school signifies the beginning of construction. However, the effectiveness and success of the new facility is generally determined months or even years before the first brick is laid or the first shovel of dirt is moved. The extent of predesign educational planning for a new school, as well as the participation of those involved in these processes, is instrumental to the eventual cost, satisfaction with, and effectiveness of the new building. Therefore, a school district should give careful consideration to its predesign educational planning before constructing a multimillion dollar facility that is intended to last for 50 years (Bittle, 1996; Tanner & Lackney, 2006). In Ohio, the Ohio School Facilities Commission (OSFC) oversees the current Rebuilding Program of school building construction projects (OSFC, 2004a). However, Andrew Benson, president of the New Ohio Institute, a Toledo-based think tank, maintains that if the OSFC guidelines and procedures are not reviewed and monitored, then districts will construct schools that people will not want or will not use properly (Lier, 2001).

Since 1999, Ohio has been experiencing a dramatic increase in the number of new schools being constructed (Lackney, 2001; OSFC, 2003). As a result, the need to plan and design schools has also increased. Surprisingly, little data have been collected regarding how each district in Ohio completes various phases of construction. This study focuses on the extent to which predesign educational

planning was utilized by district officials prior to the construction of schools in Ohio from 2000 through 2004.

Most design professionals consider educational facility planning to be one of the more challenging phases of construction (Perkins, 2001) because the considerations involved in predesign educational planning are varied. Predesign educational planning includes identifying and integrating educational specifications (Castaldi, 1994; Graves, 1993; Kowalski, 2002; Perkins, 2001; Tanner & Lackney, 2006), setting long-range academic goals (Carey, 2004; Castaldi, 1994; Graves, 1993; Henry, 2000; Perkins, 2001; Tanner & Lackney, 2006), consulting with stakeholders (Beaumont, 2003; Doherty & Futral, 2000; Fox, 1999; Graves, 1993), utilizing independently hired consultants (McCune, 1986), and integrating the district's vision (Carey, 2004; Graves, 1993; Henry, 2000; Perkins, 2001; Tanner & Lackney, 2006).

Many school district officials allow the architectural firm to dictate the speed, methods, and choices included within the predesign educational planning phase (Perkins, 2001). However, according to Ehrenkrantz, Eckstut, and Kuhn Architects (2000), there has been a growing disconnect between architects and school clients during the past 30 years, resulting in a situation "where educators no longer trust architects" (p. 1). Furthermore, "One of the things that school boards and architects didn't recognize was that for teachers to work together as a team, they need time to plan together," wrote Ehrenkrantz et al. (2000, p. 1).

One potential obstacle to implementing a thorough predesign educational planning strategy in a school project is the perception that predesign educational planning is a costly, time-consuming process that will not yield a significant

academic improvement for such a large expenditure. "One of the toughest challenges in the beginning was convincing the school board that we should spend more money on planning," but as a result of thoughtful planning, "in the end, the total cost of the facilities that were suggested in the master plan cost 19 percent less" than originally projected, wrote Roger Yohe, Superintendent, Western Placer Unified School District (Bingler, Quinn, & Sullivan, 2003, p. 46).

According to the OSFC, since 1999, over \$3.4 billion has been spent on renovation or new construction of school buildings in Ohio (OSFC, 2003). This substantial sum of money does not include the millions of dollars that have been raised locally for school construction. As the volume of school construction continues to increase, the price to build and renovate also increases. To assist with these costs, the OSFC financially subsidizes districts a predetermined percentage of the cost of new school construction. After a district qualifies for financial assistance, the OSFC imposes a comprehensive set of guidelines. These guidelines, which are established within the *Ohio School Design Manual*, focus on square footage, building materials, and loose equipment. However, the *Design Manual* does not include similar comprehensive requirements with regard to predesign educational planning. This lack of predesign educational planning requirements, according to Jim Smith, Superintendent of the Bethel-Tate School District, is leading to a large number of inadequate, indistinguishable school designs (Ludlow, 2000).

Ohio's shortcomings in requiring specific predesign educational planning of new school construction are in direct contradiction to other states that have similar school construction projects. Several states have implemented specific requirements

for predesign educational planning, such as public hearings, community involvement, and the inclusion of a varied group of stakeholders (Beaumont, 2003; Griffith & Fonda, 2007). However, little research has been conducted in Ohio to identify the predesign educational planning items utilized by district officials prior to the design of a new school. This study reports on the data collected from schools across Ohio in relationship to identified normative predesign educational planning items. Identifying prevalent predesign educational planning components from 2000 through 2004 could make the process of designing a new school building more efficient and successful. It is also beneficial to better understand the various methods currently employed in Ohio (as a result of the OSFC's mission to allow flexibility) in relation to suggested predesign educational planning items in current related literature.

Chapter 2 is organized into the following sections. It begins with a description of Ohio school facilities prior to 1999. Next, a description of school funding in Ohio is explored, as it relates to financing the current Rebuilding Program. Philosophies that form the basis of potential predesign educational planning employed by districts are then described and compared with one another. Predesign educational planning items are then described. Lastly, the eight selected predesign educational planning items used in the study's survey are summarized.

The rationale and purpose of chapter 2 was to investigate and cite recommended predesign educational planning items associated with related literature. As a result, a rubric was developed and used to create a survey to collect data regarding predesign educational planning recommended by related literature and practitioners.

### Conditions of Ohio Schools Prior to 1999

Across the United States there are more than 80,000 public schools in more than 15,000 districts (Perkins, 2001). Ever-changing educational trends and daily usage of these educational facilities require constant attention to the maintenance and repairs of these schools. In 1996, the United States General Accounting Office (GAO) estimated that it would take \$112 billion to return existing schools across the country to a good overall condition (Beaumont, 2003; Perkins, 2001). The National Education Association (NEA) conducted a similar study and determined that the cost was even higher to renovate and repair existing schools and to construct new schools; it reported an estimated cost of \$322 billion for the needed upgrades (Beaumont, 2003). However, even if all of the public schools in Ohio were currently updated to excellent condition, the emerging changes associated with teaching and instruction would still have an effect on the predesign educational planning and design of school facilities.

For nearly 20 years, the average physical condition of school facilities in Ohio has drawn considerable attention. In 1990, an Ohio public school facility survey provided evidence that Ohio's public primary and secondary schools needed an estimated \$10 billion for building repair and construction (Augenblick & Silverstein, 2002; *DeRolph v. State of Ohio*, 2000). Ohio's Legislative Budget Office completed a similar study in 1997 that determined that the need had risen to \$16.5 billion dollars (*DeRolph v. State of Ohio*, 2000).

In addition, a 1996 report by the GAO established that Ohio ranked near the bottom of states with schools in good condition (Beaumont, 2003; *DeRolph v. State of Ohio*, 2000). Furthermore, the GAO ranked Ohio last among all 50 states with regard

to school facilities in adequate condition, and it determined that 95% of the schools in Ohio needed to spend money on facility improvements (*DeRolph v. State of Ohio*, 2000).

This was not the first time the condition of Ohio's schools had been focused upon by educators and legislators. Over 50 years ago, the Ohio state legislature addressed the issue. Approved in 1957, The Classroom Facilities Act was intended to address the growing issue of new school construction and renovation (Augenblick & Silverstein, 2002). However, from 1957 to 1997, Ohio appropriated only \$508 million for school construction (OSFC, 2004a).

Therefore, despite Ohio's attempts to maintain and upgrade school facilities, by 1990, facilities across the state were in need of attention and repair. One example of this growing need to build and renovate was cited by the *Akron Beacon Journal*, which reported that one high school in the Mad-River Green District was infested with a lethal mold (as cited in *DeRolph v. State of Ohio*, 2000). The mold was so serious that the superintendent was forced to keep a bathroom boarded up to prevent students from being exposed. Further examples of the deterioration of Ohio's schools included Randall Fisher testifying in court that 13 schools in the Youngstown City School District lacked the funds for asbestos abatement (*DeRolph v. State of Ohio*, 2000). In addition, William Phillis testified that one school building in the Morgan Local School District that was built before 1900 had sunk nearly 6 in. (*DeRolph v. State of Ohio*, 2000). These examples suggested how many deteriorating schools were located across Ohio and helped encourage new legislation to address facilities' needs in the 1990s.

One might wonder why it is so important to devote so much time and money to predesign educational planning for new schools, especially when most people view school facilities as nothing more than bricks and mortar. According to Jarman, Webb, and Chan (2004), new schools have a positive effect on the entire community “It sends the message to parents and community leaders that the school district cares about the education of the children by creating an attractive environment to support student learning” (p. 37). Once a new school has been constructed or renovated, (according to Jarman et al., 2004) the community becomes even more supportive of the school’s educational programs: “Consequently, the positive effect of constructing an attractive school for educational use cannot be underestimated” (p. 37).

Yet, despite previous attempts to address facility needs, by the mid-1990s, Ohio had fallen behind in school construction and maintenance because of budget constraints. The Ohio Supreme Court justices ruled in the *DeRolph* case that the system of state funding of school districts in Ohio could not be considered adequate if the districts lacked sufficient funds to provide a safe and healthy learning environment (*DeRolph v. State of Ohio*, 2000).

#### Ohio Funding of School Construction

The issue of determining who is responsible for school funding in Ohio and across the United States continues to be highly debated. During the past several years, districts in Ohio have had large numbers of levies and bond issues defeated by voters. As a result of frustration with the current method of school funding and the deplorable conditions of Ohio school facilities, several lawsuits have been filed against the state (Kennedy, 2005).

One of the more publicized cases against the state with regard to school funding is the *DeRolph* case. Beginning in 1998, litigates contended that the current method of funding education in Ohio violated Section 2, Article VI of the Ohio Constitution, which mandates a thorough and efficient system of common schools throughout the state (*DeRolph v. State of Ohio*, 2000).

Currently, public schools in Ohio are funded through three levels of government: revenues received from local, state, and federal assistance. In *DeRolph v. State of Ohio* (2000), the Ohio Supreme Court determined that Ohio contributed 43.8% of public school funding, whereas the local share of funding amounted to 56.2%. As a result, the Ohio Supreme Court ruled that Ohio relied more on local revenue than on state revenue, contrary to the national trend (*DeRolph v. State of Ohio*, 2000).

In a report issued in March 2000 regarding construction expenditures for school facilities, the GAO determined that the national average of expenditure per student from fiscal years 1990 through 1997 was \$473 (*DeRolph v. State of Ohio*, 2000). However, the same study also found that the average expenditure in the state of Ohio during that same time period was only \$274 per student.

In addition to the potential impact of increased funding for the instructional environment, various studies have indicated that new school buildings can have a positive impact on student achievement and behavior (Buckley, Schneider, & Shang, 2004; Schneider, 2002). However, the cost to build can be a financial challenge to a local community. Therefore, it is imperative to garner support for a bond issue from numerous residents and stakeholders. Yet, it is unlikely that every group will get

everything it desires in the new facility. Predesign educational planning focuses on making thoughtful decisions based upon long-range academic goals, the district's vision, and educational specifications.

According to American School and University's 28th annual *Official Education Construction Report* (2002) "an all-time high \$41.5 billion was spent by education institutions on construction in 2001, and over the next three years spending is projected to remain extremely strong" (as cited in Agron, 2002, p. 24). This trend toward increased construction does not appear to be declining: "With enrollments rapidly rising, existing buildings in need of repair and modernization, and new technologies and programs boosting space requirements, spending on construction is not something education institutions 'should' do, but is something they 'must' do" (Agron, 2002, p. 28).

Since 1995, the nation has seen an incremental increase in school construction. Table 1 depicts the cost of school facility construction over a 7-year period.

Table 1

*Cost of School Construction in the United States by Year*

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Year	Cost (in billions)
<hr/>	
1995	\$17.1
1996	\$18.2
1997	\$19.9
1998	\$24.4
1999	\$30.0
2000	\$36.2
2001	\$41.5

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*Note.* From "Bucking the Trend," by J. Agron, 2002, *American School and University*, 74 (9), p. 34.

The *Official Education Construction Report* also detailed how construction money was spent for elementary, middle, and high schools (see Table 2).

Table 2

*Percentages of How Construction Money Is Spent*

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Item	%
<hr/>	
Construction	74.0
Fees/other	9.9
Site development	7.3
Furnishings/equipment	6.6
Site purchase	2.2

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*Note.* From "Bucking the Trend," by J. Agron, 2002, *American School and University*, 74 (9), p. 32.

In Region 5 (which includes Ohio), the report cites the cost of various characteristics included in new schools (see Table 3).

Table 3

*Characteristics of New Schools in Ohio*

Characteristic	Cost
Cost per square feet	\$144
Cost per student	\$17,083
Total cost	\$17,529,000

*Note.* From "Bucking the Trend," by J. Agron, 2002, *American School and University*, 74 (9), p. 36.

The Ohio Supreme Court identified four aspects of the school funding situation that contributed to inequalities in the funding system (*DeRolph v. State of Ohio*, 2000). These four inequalities included foundation funding, the overreliance of Ohio's funding on local property taxes, the requirement that school districts borrow through spending reserves, and the lack of sufficient funding in the budget for construction and maintenance of public school buildings (*DeRolph v. State of Ohio*, 2000).

Ohio attempted to respond to the Ohio Supreme Court findings by creating the Rebuilding Program (Kennedy, 2005). The OSFC was created to oversee the renovation and construction of new public schools in Ohio. Yet, according to William Phillis, leader of the coalition of school districts that argued the *DeRolph* decision, the school facility problem in Ohio will get worse (Ludlow, 2000). Phillis stated that many districts will have to wait 12 years or more before seeing the effects of the latest program on their own districts (Ludlow, 2000).

#### OSFC Background

The mission of the OSFC is to administer funding, management oversight, and technical assistance to Ohio school districts for the construction and renovation of school facilities (Kennedy, 2002; OSFC, 2000). Signed into law on May 5, 1997, Senate Bill 102 established the OSFC (*DeRolph v. State of Ohio*, 2000; Moore, 2001; OSFC, 2000), which oversees three building programs in the state. These three programs are the Classroom Facilities Assistance Program (CFAP), the Expedited Local Partnership Program (ELPP), and the Emergency School Building Repair Program (OSFC, 2004a).

Through the Rebuilding Program, Ohio will provide \$10.2 billion over a 12-year period (OSFC, 2003), which marks a significant increase in state funding for school construction (OSFC, 2004a). The goal of the Rebuilding Program is to renovate or rebuild every one of the state's 3,500 school buildings over a 12-year period beginning in 2000 (OSFC, 2000).

According to the OSFC (2003), Ohio spent only \$350 million on school construction from 1990 to 1998. With the creation of the Rebuilding Program, nearly

\$2 million is being spent daily on new construction and repairs. In addition, since the inception of the building program, over 76 school facility projects have been completed in Ohio (OSFC, 2003).

The OSFC assesses facility needs across the state and approves renovation and construction projects. Every district in the state is ranked annually on the basis of AVPP. School districts ranking in the lowest valuation are given first priority for potential construction funding (Kennedy, 2005).

According to the OSFC, funding for the \$10.2 billion project originates from three sources of revenue: \$5.9 billion (58%) from the state's capital budget, \$2.5 billion (24%) from Ohio's settlement with tobacco companies, and \$1.8 billion (18%) from cash appropriations and interest earnings (Ludlow, 2000). In 2000, lawmakers agreed to devote half of Ohio's share of the national tobacco settlement to school construction (Ludlow, 2000).

According to the October 2004 issue of *Building Blocks*, the OSFC newsletter, as of 2004, over \$3.4 billion had already been spent on school construction across Ohio (as cited by OSFC, 2004b). The number of newly built or renovated school buildings across the state is 253 (OSFC, 2003). The number of districts with full facility projects completed is 75 (OSFC, 2003). Ohio has provided a large percentage of the needed money to fund the program, with local taxpayers contributing 20 cents or less of each construction dollar (Ludlow, 2000).

#### *The Ohio School Design Manual*

The *Ohio School Design Manual* is a comprehensive set of guidelines used in the design and construction of Ohio schools for districts that receive a percentage of

funding toward construction from the OSFC (Moore, 2001; OSFC, 2000). The *Design Manual* was created by the OSFC to offer guidelines and specifications during the design and construction phase of a school built in Ohio under the Rebuilding Program.

The OSFC provides the funding and administrative guidance for an approved funding project (Kennedy, 2002). The OSFC then assumes that a district, with assistance from an architect, will design the school building (Schehl, 2004a). The OSFC expects that the new school facility will adhere to design parameters and approved materials for which it contributes funding. To assist the district and architects, the OSFC created the *Design Manual*, an approximately 2,000-page guide that outlines specific components to be included in all OSFC-funded projects.

Primarily, the *Design Manual* was devised to provide a comprehensive set of guidelines and parameters with regard to building materials and loose equipment (Moore, 2001). However, according to Moore (2001), an initial challenge to the OSFC was overcoming a district's sense of losing control over a project when presented with the *Design Manual*. Randall Fischer, former Executive Director of the OSFC, noted that the OSFC should not be viewed as "dictatorial or controlling" (Moore, 2001, p. 31). In fact, flexibility is the cornerstone of the *Design Manual* as it relates to planning choices (Moore, 2001).

The *Design Manual* was initially developed by DeJong & Associates, Inc.; Planning Advocates, Inc.; and the architectural firm of Fanning/Howey, Inc. (Kennedy, 2002; OSFC, 2000). These consultants analyzed schools across Ohio and in neighboring states to assist in the development of the *Design Manual*. It is updated

and revised annually to reflect the availability of newer, improved materials and equipment (OSFC, 2004a).

One of the many guidelines of the *Design Manual* is the designation of approved square footage per student (OSFC, 2000). The square footage allocations in 2000, according to the 2000 *OSFC Annual Report* are shown in Table 4.

Table 4

*Square Footage Allocations in 2000*

Grade level	Range of square feet per student
Elementary (pre-kindergarten-Grade 5)	115 to 125
Middle school (Grades 6-8)	141 to 151
High school (Grades 9-12)	160 to 180

*Note.* From *Annual Report 2000*, by the Ohio School Facilities Commission, 2000, p. 7.

The *Design Manual* prioritizes instructional spaces over extracurricular areas (OSFC, 2004a). If a district chooses to provide additional space, it has the option of utilizing the Locally Funded Initiative to contribute locally raised funds to create additional space (OSFC, 2004a).

One intention for the *Design Manual* was to foster uniformity in construction and to ensure that schools created using OSFC funds will last 40 years or more (OSFC, 2000). Equality among school districts taking advantage of OSFC funds is possible if each district adheres to the specifications included within the *Design Manual* (OSFC, 1998). Furthermore, according to Kennedy (2002), the use of the *Design Manual* ensures that each district receives an equitable amount of funding through the OSFC program. Another intention for the *Design Manual* was to encourage consistency in each project financed by the OSFC (Kennedy, 2002). For example, the *Design Manual* specifies that each classroom in an elementary building financed by the OSFC must include items such as 900-square-foot classrooms, a filing cabinet, a wastebasket, heating and air conditioning, a tackboard, video port, monitor, voice port, phone, four data ports for student use, and a television (Kennedy, 2002).

However, the standards listed within the *Design Manual* do place limitations on building renovations and new construction (Schehl, 2004a). The OSFC will not fund school facility projects that do not meet the two-thirds rule (Schehl, 2004a). The two-thirds rule requires that the cost of renovations or additions must be two-thirds the cost of replacement of the entire facility. If a district does not qualify under the two-thirds rule, the OSFC will not support the use of funds to construct or renovate the current facility. Another limitation to the use of funds is the 350 rule. The Ohio Revised Code states that construction money from the OSFC cannot be used to build or renovate schools with an enrollment of less than 350 students (Schehl, 2004a).

Critics contend that the *Design Manual* guidelines are too specific to allow for varying school designs by individual districts (Lier, 2001). For example, one

complaint voiced by multiple districts is the *Design Manual*'s failure to approve a separate cafeteria and auditorium (Lier, 2001). Instead, the *Design Manual* allows only for a cafetorium, a combination of a cafeteria and auditorium. Canton Superintendent Fred Blosser stated that his impression of the *Design Manual* was very unfavorable, because he believed that the *Design Manual* was too rigid in specifying construction materials and requirements not supported by members of his district (Lier, 2001). Critics maintain that the OSFC has created a manual that does not take into account the individual school's instructional needs and instead focuses on written rules and the bottom line (Lier, 2001).

OSFC officials disagree with this critical assessment of the *Design Manual*. Although the *Design Manual* specifically lists materials, equipment, and square footage it deems appropriate, one objective was to allow for individualization and flexibility in the design of the schools (OSFC, 2004a). The 2003 *OSFC Annual Report* stated that the guidelines used in the *Design Manual* provide "districts with the flexibility needed to design a building that meets their local educational needs (p. 6)." Rick Savors, OSFC Chief of Communications, stated that the *Design Manual* is flexible enough to accommodate changes for what might be in vogue today in education but not popular tomorrow (Schehl, 2004b). Savors clearly defended the *Design Manual* as accommodating, believing that it encourages and allows for flexibility (Lier, 2001). Savors continued by pointing out that although the OSFC works with districts to address concerns and adjust designs the community always has the freedom to fund anything not included within the *Design Manual* (Lier, 2001).

## Planning Strategies

When officials design a school, they have a myriad of planning strategies from which to choose. Although numerous planning strategies exist, this section will describe two types of planning philosophies that districts could implement into their overall preplanning phase of school design.

One reason it is essential to consider the planning phase of a new school, according to Agron (2004), is because of the current rapid pace at which new schools are being built. Schools are being constructed at such a rapid pace that prototypes are being used repeatedly by architectural firms (Agron, 2004). The cookie cutter designs are being recommended regardless of how staff members are instructing or what the instructional objectives of the district are. Taking time to explore the extent to which predesign educational planning is occurring across Ohio could prove beneficial to assisting with the instructional objectives.

Educators have several types of normative planning strategies from which to choose when applying one to the design of a new school. One possible choice is long-range planning. According to McCune (1986), long-range planning consists of seven items (see Table 5).

Table 5

*Items Included in Long-Range Planning*


---

Assumes a closed system. Short-range plans are developed.

A final blueprint is created through internal analysis.

Planning is conducted by a department or a group of professionals.

Future plans are projected using existing data.

Emphasis is on internal changes, planning methods, and inside-out planning.

Focus is on organizational goals and objectives 5 years from now.

Focus is on detailed and interrelated data sets.

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*Note.* From "Guide to Strategic Planning for Educators," by S. McCune, 1986, p. 35.

School districts that procrastinate or defer beginning the process of planning for construction of a new facility or renovations of an existing school often encounter issues, concerns, and problems not anticipated prior to the design phase. With schools across Ohio ranging in age from 50 to 125 years, many districts do not experience surprises until after construction has begun (Rydeen & Erickson, 2002).

Rydeen and Erickson (2002), both facility planners, recommended that a district spend time prior to construction planning for the long range. These authors maintained that long-range planning can help a district anticipate facility needs, create additional options, and identify stakeholder expectations. Long-range planning for a district's facility needs should occur years before construction takes place. Similar to

the steps suggested by McCune (1986; see Table 5), Rydeen and Erickson believe a district is able to anticipate potential issues that would affect construction through the process of long-range planning. Rydeen and Erickson's recommended steps for districts choosing to create a long-range plan prior to school design are shown in Table 6.

Table 6

*Tips Included in Long-Range Planning*

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Be willing to pay for a comprehensive long-range plan.

Involve representatives from the Board of Education, administration, curriculum, buildings and grounds, teachers, citizens, and students.

Recognize that members may be skeptical to change and planning.

Create a list of goals, yet expect surprises not on your original list.

Evaluate options and make decisions in a timely manner.

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*Note.* From "Looking at the Long Range," by J. E. Rydeen & P. W. Erickson, 2002, *American School and University*, 75 (3), p. 353.

A comparison between Table 5 and Table 6 highlights important similarities and differences between suggested approaches to long-range planning, the concept of change may be difficult to accept. This may be one explanation to account for the lack of predesign educational planning that is done by school districts. District administrators may recognize that changes discussed in this phase could be viewed

negatively so instead choose to defer this portion and proceed directly to the stage where an architect designs the school.

Another similarity is the concept of focusing on goals during the long-range planning process. Taking advantage of a long-range planning process requires a school district to propose and set goals. This goal-setting portion of the process can be instrumental in making critical decisions about needed portions of a new facility during the planning process. According to Perkins (2001), identifying the goals and objectives of a new school prior to the design is the step most often ignored. Yet, if a district participated in long-range planning, it could have the benefit of identifying these goals years before the facility design is even initiated.

Equally important as setting goals and accepting the possibility of change during the long-range planning process is determining who will be a part of the planning process. A difference between the strategies detailed in Tables 5 and 6 centers around the participants recommended by both planning experts. Whereas Rydeen and Erickson (2002) recommended involving a wide range of participants McCune (1986) recommended that participants include only professionals and experts in the field of architecture, school facilities, or the district. McCune made this recommendation with three benefits in mind: saving time, utilizing expertise in a specific area, and encouraging participants who have a vested interest.

Another planning model suggested by McCune (1986) that could be applied to the design of schools is strategic planning. The items of strategic planning, as given by McCune, are shown in Table 7.

Table 7

*Strategic Planning Items*


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Assumes an open system. The organization must constantly change as the needs of the organization change.

Focuses on the process of planning, which includes building a vision, the external environment, organizational capacity, and staff and community education.

Planning completed by a small group of planners with widespread involvement of stakeholders.

Uses current and projected trends to make decisions.

Emphasizes changes outside the organization.

Focuses on what decision is appropriate today, based upon an understanding of the situation 5 years from now.

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*Note.* From "Guide to Strategic Planning for Educators," by S. McCune, 1986, p. 36.

A comparison between long-range and strategic planning strategies makes several observations possible. First, each strategy views the school organization as either an open or a closed system. A closed-system approach views the organization as isolated from the surrounding environment. Long-range planning views the organization in this manner. Conversely, strategic planning views the organization as an open system. Participants included in strategic planning come from both inside and outside of the organization. An open-system approach recognizes the important

relationship between the school and its surrounding environment and includes experts and stakeholders from both within and outside the school system.

Second, each strategy encourages a varying number of participants to be included in the planning phase. Long-range planning includes departments and groups from within the school system. Strategic planning instead encourages a greater number of stakeholders that are directed by a small group of planners.

### Predesign Educational Planning

In 1998, a group of architects, planners, school board members, teachers, and representatives from various federal agencies met to discuss and consider best practices for predesigning effective schools for optimal learning (Fox, 1999). Later that year, these discussions were presented in draft form at a national symposium in Washington, DC. According to this group, the three recommended themes for predesigning learning environments are that (a) learning is a lifelong process, (b) design is always evolving, and (c) resources are limited (Fox, 1999; Lackney, 2001).

In addition, several suggestions were offered to district officials engaging in predesign educational planning. These suggestions included (a) enhancing teaching and learning to accommodate the needs of learners, (b) making effective use of all resources, and (c) involving a wide variety of stakeholders in the predesign educational planning process (Fox, 1999).

Several themes and suggestions recommended from this symposium relate directly to this study. First, predesign educational planning can enhance teaching, learning, and accommodate the needs of learners (Tanner & Lackney, 2006). Second, the limited resources available to school districts for building construction might be

more effectively spent if the stakeholders agree upon identified, long-term instructional goals and educational specifications of importance during the pre-design educational planning phase. In addition, as the group proposed, a new school should integrate the objectives of the stakeholders. These themes are all related to the predesign educational planning recommended.

This study defines predesign educational planning as including the following: utilizing the district's vision (Carey, 2004; Earthman, 2000; Graves, 1993; Henry, 2000; Perkins, 2001; Tanner & Lackney, 2006), identifying and integrating educational specifications (Castaldi, 1994; Graves, 1993; Kowalski, 2002; Perkins, 2001; Tanner & Lackney, 2006), utilizing long-range academic goals (Carey, 2004; Castaldi, 1994; Graves, 1993; Henry, 2000; Perkins, 2001; Tanner & Lackney, 2006), consulting with stakeholders (Beaumont, 2003; Doherty & Futral, 2000; Fox, 1999; Graves, 1993), utilizing independently hired consultants (McCune, 1986), and integrating instructional objectives into physical spaces (Tanner & Lackney, 2006). These items are discussed below.

One of the key initial steps in predesign planning is identifying the district's vision and then formulating and implementing a vision statement into the predesign educational planning phase. A vision statement describes what the district and stakeholders would like to work toward and how the new school can contribute toward this vision (Earthman, 2000). A vision statement utilized in this phase of planning is a statement of what all stakeholders would like to see in the district in the future (Earthman, 2000). In addition, the district's vision forms the foundation for the remaining steps in the predesign educational planning phase (Tanner & Lackney,

2006). Therefore, many practitioners suggest that the formation of the district's vision statement should precede the completion of the other predesign educational planning components (Perkins, 2001; Stevenson, 2007; Tanner & Lackney, 2006).

Involving a wide variety of stakeholders on the predesign educational planning team from the outset of the project increases communication and addresses concerns regarding needs and eventual costs (Doherty & Futral, 2000; Fox, 1999; Graves, 1993). Including varied members in the planning process can accommodate the needs of both the community members and the school (Henry, 2000). The team's planning should be a highly participatory process (Abramson, 2005; Gaylaird, 1989; Lackney, 2001). Not only should a wide range of stakeholders be invited to the planning meetings but a process should be in place to encourage a great deal of participation and input from each of the members (Beaumont, 2003; Doherty & Futral, 2000; Fox, 1999; Graves, 1993).

School districts are all too often interested in only the present or the immediate future (Abramson, 2006; Castaldi, 1994), but it is important for a district to identify its educational needs 5-10 years in advance (Abramson, 2006; Castaldi, 1994). For decades, educational leaders have examined the components of a successful educational program yet have given little attention to the effect of the condition of the physical facility on the long-range goals of the academic program (Sanoff, 2000). It would be beneficial during the predesign educational planning process for districts to consider potential academic change in the future and its effect on its long-range academic goals (Castaldi, 1994; Perkins, 2001; Tanner & Lackney, 2006). Any facility project should be planned within the framework of long-range

academic goals (Castaldi, 1994; Earthman, 2000; Graves, 1993; Perkins, 2001; Tanner & Lackney, 2006).

In conjunction with utilizing goals and objectives and integrating long-range goals, a district needs to formulate the “educational specifications” within the predesign educational planning phase (Perkins, 2001, p. 73). Educational specifications were defined by Kowalski as “the document containing information about the intended uses of a school building (e.g., how instruction will occur, the scope of the curriculum, and so on);” which is “used by architects to design the school; [educational specifications are] also called [an] educational program statement” (2002, p. 265). The educational specifications are developed and identified by one or more educators within the district and include the goals and culture of the school district (Brubaker, 1998; Perkins, 2001). The effectiveness of identifying the educational specifications increases if a larger group of participants assists with the identification (Graves, 1993). These data will include items such as the type of space most requested by educators within the district, the educational delivery system most often used, functional requirements for loose equipment, and other services needed (Perkins, 2001; Tanner & Lackney, 2006). The challenge to the planning team, architect, and educational planner is to take these educational specifications and integrate them into the eventual design of the new school (Castaldi, 1994; Graves, 1993; Kowalski, 2002; Perkins, 2001; Tanner & Lackney, 2006).

When the planning process is initiated, numerous decisions must be made by the planning team. Members of the planning team can quickly be swayed and overwhelmed by decisions regarding items such as location, cost, time, needs, and

desires for the new school. An individual who not only is trained to facilitate meetings with diverse members of the team but also has a knowledge base of architecture and understands items needed by educators would be important in this process (Bingler et al., 2003; Fielding, 1999b). An educational facility planner can possess all of these skills and keep the group focused on the long-term objectives of the district and educational mission of the school during the planning phase (Abramson, 2005; Bingler et al., 2003; Fielding, 1999b; Sausner, 2002). The eventual design that meets the educational mission of the district is the overriding objective of educational facility planners (Sausner, 2002). Signs of poor planning, according to Carey (2004), are shown in Table 8.

Table 8

*Signs of Poor Planning*

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The Board of Education does not require comprehensive five-year plans for programs, demographics, and facilities.

No organized planning team of specialists takes part in the planning of the school.

The superintendent is in a rush to get a building program going, saying that the needs are obvious.

No independent planner is involved in the planning process. Instead, the architect recommends components to be included in the design.

The first concern about the [school] project is not the planning process, but how much money is available.

The district uses the same architects or educational planners over and over. There is no formal selection process in place.

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*Note.* From “Stretching Construction Dollars: How to Avoid Poor Planning and Make the Most of Your District’s Building Budget,” by K. Carey, 2004, *American School Board Journal*, 191 (10), p. 28.

Additionally, Perkins (2001) identified common problems in school design and planning (see Table 9)

Table 9

*Common Problems in School Planning*

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Failure to plan

Unclear and/or unrealistic goals

Inadequate client leadership

Selecting the wrong professional team for the wrong reasons

Cost determines the planning process

Ineffective management

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*Note.* From “Building Type Basics for Elementary and Secondary Schools,” by B. Perkins, 2001, p. 87.

In comparing Carey’s (2004) signs of poor planning with Perkins’s (2001) similar items, a few commonalities emerge. First, both authors identified the need to have specific goals during the planning process. Second, both considered the facilitator or leader of the planning process to be crucial to the success of the process. Third, both saw the selection of the facilitator as key. Fourth, both authors expressed concerns over the eventual costs having an effect on the planning process.

Ohio allows individual districts the flexibility to determine the extent of predesign educational planning it utilizes. This lack of required preplanning is not unlike that of other states across the United States. The National Trust for Historic Preservation has taken an active interest in public school construction and renovation, and, as a result, has collected information regarding each state's building requirements across the country. According to its 2003 report titled "State Policies for School Construction and Renovation" 27 states provided financial assistance to public school districts for construction programs. However, providing financial support for construction does not necessarily coincide with strict predesign educational planning requirements. For example, the National Trust for Historic Preservation (2003) reported that 24 states possess no specific planning requirements by district officials to complete prior to the construction of a new school. The 26 states that do include specific predesign planning requirements cite the following as prerequisites: forming a planning team, utilizing community members, and identifying educational specifications (National Trust for Historic Preservation, 2003). Yet, only 12 of the states in the report require community participation on the planning teams. Henry Sanoff, author of *Community Participation Methods in Design and Planning* (2000), concurred that states do not always require predesign educational planning. In fact, Sanoff reported that only Minnesota and Washington have such predesign educational planning requirements for state projects.

Whereas the previous portion of this chapter was devoted to identifying signs of poor predesign educational planning, the following sections describe

recommendations of predesign educational planning offered by practitioners and experts in the field of preplanning.

#### District's Mission and Vision

The first recommended step in the predesign process is identifying a district's mission and vision. An effectively designed educational facility should originate from the identified mission of the school district (Castaldi, 1994; Earthman, 2000; Graves, 1993; Stevenson, 2007; Tanner & Lackney, 2006). Educational planners note that district officials often do not understand the difference between a mission and a vision statement. The district's mission statement is a concise statement of beliefs that represent school and community values (Tanner & Lackney, 2006). However, above all, it is the vision that must include a direction for learning and teaching (Brubaker, 1998; Tanner & Lackney, 2006). Furthermore, the vision indicates the basic purpose of the school system regarding physical facilities (Tanner & Lackney, 2006). According to Brubaker (1998), "The true power comes when the design concept is married both visually and functionally to the educational vision" (p. 157). A lack of this connection may represent a "black hole" in the design of the new facility (Tanner & Lackney, 2006, p. 48).

It is imperative that a concise mission statement includes effective teaching principles and learning principles at the outset of the predesign educational planning phase (Castaldi, 1994; Perkins, 2001). These fundamental principles of learning should be included in the mission and integrated into the predesign educational planning recommendations (Castaldi, 1994; Stevenson, 2007).

In addition, the district's mission forms the foundation for the remaining steps in the predesign educational planning phase (Tanner & Lackney, 2006). Therefore, many practitioners have suggested that the formation of the district's mission statement should precede the completion of the other predesign educational planning items (Perkins, 2001; Tanner & Lackney, 2006). Perkins (2001) identified the district's mission as the first integral, initial step in predesign educational planning. Yet, many districts ignore this predesign educational component, and others fail to apply realism to their mission creation, which results in unrealistic or unnecessary requests (Perkins, 2001).

Graves (1993) believed the mission should be completed in conjunction with the identification of educational specifications. Graves recommended that the mission statement should include the district's philosophy of education as it relates to the teaching and learning process. Developing the district's mission statement assists the stakeholders in identifying and supporting the eventual educational specifications and design that will facilitate the proposed teaching and curriculum (Tanner & Lackney, 2006). In addition, the mission statement assists the stakeholders in describing why physical learning environments in the school district exist (Tanner & Lackney, 2006).

Earthman (2000) maintained that a purpose or mission statement may be viewed as the same thing in most districts, although he noted that the term *mission statement* seems to be in favor with educators today (p. 31). However, Earthman clarified that, in essence, a mission statement cites the legal requirements of the organization of the school system. Conversely, Earthman encouraged school officials to focus instead on a vision statement during the predesign educational planning

phase. The vision statement, as defined by Earthman is a summation of what everyone in the school organization would like to see happen in the future. The “development and articulation of a clear vision” are critical to the success of supporting students’ educational needs in a new facility (Brubaker, 1998, p. 157).

In some instances, facilitating the mission and vision statement of a district may reduce or even eliminate the need to construct a new school facility (Perkins, 2001; Stevenson, 2007). Considering and updating the district’s mission statement might encourage other solutions, such as scheduling changes and service consolidation, to achieve the district’s mission. School construction should be driven by a combination of the district’s mission, curriculum, teaching needs, and learning needs, and not the other way around (Perkins, 2001, p. 87). As a result, districts that evaluate their needs and vision may determine that construction is not necessary.

Although numerous states across the country offer financial assistance toward school construction projects, each either requires different preplanning to be completed by district officials or has an absence of any required predesign educational planning. For example, none of the following states require district officials to identify their mission or vision in their construction guidelines: Alabama, California, Georgia, Minnesota, North Carolina, and South Carolina (Alabama Department of Education, 2007; California Department of Education, 1986; Georgia Department of Education, 2003; Minnesota Department of Education, 2003; North Carolina Department of Education, 2003; South Carolina Department of Education, 2007). Whereas other states, such as Missouri, not only do not provide state funding

they also do not require any degree of predesign educational planning requirements (Missouri Department of Education, 2006).

However, New Mexico is one of the few states that does require district officials to identify a long-range vision (New Mexico Public School Capital Outlay Council, 2007). New Mexico requires all school districts to have a current 5-year facilities master plan as a prerequisite for eligibility to receive state assistance. As part of the 5-year plan, districts identify a vision and develop a “road map” for long-term facility management (New Mexico Public School Capital Outlay Council, 2007, p. 8). In addition, the long-range vision provides a common perception of what facilities are needed to meet districts’ educational goals (New Mexico Public School Capital Outlay Council, 2007).

#### Identifying Goals and Objectives

Before beginning the process of designing a new school, officials should follow a number of steps to gather needed information (Carey, 2004; Henry, 2000). According to Henry (2000), these steps include evaluating the current facilities, identifying the goals and objectives, and providing options. Carey (2004) wrote that predesign educational planning matters because a school district has two choices with regard to the planning process. The first option is to make quick decisions to ensure the school project is completed rapidly and hope that the decisions work out over time. The second option is to plan for the long-range through the district’s identified goals and objectives. Many districts view the process of identifying goals and objectives as making a laundry list of items they desire in the new school facilities (Carey, 2004). These items would then be ranked by importance, without regard to

the district's instructional delivery or long-range academic goals. Instead, it is imperative to the success of the eventual design that the first step is to identify the goals and objectives of the construction project by first reviewing the data of the school district (Carey, 2004).

According to Carey (2004), the needed data include programs, demographics, and current facilities. This triangle of key items should not be altered, and any significant focus on one of these three areas over another will affect the eventual planning design (Carey, 2004). Likewise, additional experts and practitioners identify the following steps that should be utilized in the initial predesign planning stage as (a) beginning with current data and future projections, (b) identifying objectives, (c) developing and proposing solutions, and (d) establishing priorities (Carey, 2004; Henry, 2000; Perkins, 2001).

The first step in an effective planning process is to identify goals and objectives beginning with a comprehensive base of data (Carey, 2004; Tanner & Lackney, 2006). A master plan based upon district data will assist stakeholders in making more informed decisions regarding priorities in the proposed project (Abramson, 2005). Data that would be critical to the initial planning process include information regarding current facilities, student demographics, and district enrollment figures (Tanner & Lackney, 2006). Although this initial process recommends teamwork, people associated with the project are likely to hoard important data (Carey, 2004). Failing to share information helps to ensure that personal agenda items are more likely to be included in the eventual design.

The collection and dissemination of data will help to ensure that eventual objectives developed during the planning phase will have been data driven, and not reflections of personal wishes and requests (Graves, 1993). Evaluating the current facilities, the site, and the suitability of where a new building might best be located should all be included in the evaluation stage (Henry, 2000). Methods to evaluate the current facilities could include utilizing the School Construction Operation and Program Evaluation (SCOPE) system to identify objectives and items of concern in the current facilities. According to Henry (2000) this system encourages planners to identify and rank 100-150 items throughout the facilities and campus. Establishing the objectives of the project during the initial planning process allows the group to identify gaps between where the project's development is and where the group wants it to be (Carey, 2004). However, unlike Ohio, which lacks specific predesign educational planning requirements, other states have enacted specific predesign educational planning procedures including identifying goals and objectives (Griffith & Fonda, 2007).

The Alaska State Department of Education (2005) includes specific requirements for all new public elementary and secondary schools. For example, Alaska requires the district's chief school administrator to identify the goals for any new school for which state aid is sought (Alaska Department of Education, 2005). These identified goals are expected to be aligned with the eventual design of the facility. Additionally, Alaska requires district officials to identify the school's educational philosophy, the educational specifications, the curriculum that will be used, and the educational spaces needed prior to receiving state aid or formulating the

eventual design of the new school (Alaska Department of Education, 2005, p. 3).

Likewise, the California Department of Education (1986) requires district officials to identify the building's educational goals. The state of Georgia requires district officials to begin identifying curricular goals 5 years prior to construction (Georgia Department of Education, 2003). These goals are to be aligned with the trend indicators including population and curricular offerings. However, other states such as Alabama, Minnesota, and South Carolina do not require district officials to identify the district's instructional objectives in this phase of school construction (Alabama Department of Education, 2007; Minnesota Department of Education, 2003; South Carolina Department of Education, 2007).

Prior to designing the new school, many planners will recommend that the school district formulate three to five plans that are each assigned a total cost (Henry, 2000). This can be achieved by initially involving the architect, superintendent, administrators, and staff in developing a series of design objectives that is aligned with the district's objectives. These principles could evolve from what is currently successful and what needs improvement in the current school facility (Lackney, 2001; Stevenson, 2007).

Likewise, the U.S. Department of Education endorses six principles that are recommended in predesign educational planning for school construction (Lackney, 2001). According to the U.S. Department of Education, a key component in the predesign planning phase should be identifying goals and objectives for the new facility (Lackney, 2001). Adhering to this principle would involve allowing for what is not yet known, planning for flexible design and adaptable systems, planning for

rapid expansion of technology, and evaluating the plan by all stakeholders (Lackney, 2001).

However, according to Osborn (2004), the conflicting goals of gathering information and still moving the process along can be a frustrating and time-consuming stage of this portion of preplanning. It is recommended that the predesign planning committee follow these guidelines when identifying goals and objectives:

1. The committee should initiate a survey to assess the current condition of schools within the district (Carey, 2004; Osborn, 2004). Starting the planning phase with a complete survey of all current facilities and the desires of all the stakeholders will help the planning group to identify goals and objectives at the outset of the process (Carey, 2004).
2. Following the collection of data and the identification of objectives, the district should begin the process of prioritizing (Perkins, 2001). Priorities might include objectives such as reducing class size, accommodating a broader curriculum, offering special programs, technology, special education, preschool, and after-school activities, just to name a few.
3. The planning team should review and understand what will be needed in the new school in relation to possible increases or decreases in enrollment (Osborn, 2004; Stevenson, 2007).
4. The planning team should develop alternative solutions to achieve the objectives (Carey, 2004; Stevenson, 2007). Participants within the planning phase of the project who insist there is only one solution may have a personal

agenda and might be hoping to benefit from a current proposed solution (Carey, 2004).

### Long-Range Academic Goals

School districts all too often are interested only in the present or the immediate future (Castaldi, 1994). For decades, educational leaders have examined the components of a successful educational program yet have given little attention to the effect of the physical facility on the long-range goals of the academic program (Sanoff, 2000, p. 106). However, it is imperative for a district to identify its educational needs 5-10 years in advance (Abramson, 2006; Castaldi, 2004). Schools constitute one of the building types, which when completed have a direct impact on the quality of the functions they accommodate: teaching and learning (Perkins, 2001, p. 1). Therefore, it would be beneficial during the predesign educational planning process for districts to consider potential academic changes in the future and their effect on the long-range academic goals (Castaldi, 2004; Graves, 1993; Perkins, 2001; Stevenson, 2007; Tanner & Lackney, 2006). Any facility project should be planned within the framework of long-range academic goals (Castaldi, 2004; Earthman, 2000; Graves, 1993; Perkins, 2001; Tanner & Lackney, 2006).

The reasons for identifying and developing long-range academic goals are numerous. Identifying long-range academic goals allows for the application of the scientific method of inquiry to educational problems (Castaldi, 1994) and enables boards of education to plan on the basis of facts (Castaldi, 1994; Graves, 1993). Identifying long-range academic goals may also reveal inequalities of educational opportunities within the district (Castaldi, 1994).

Identifying and analyzing current academic data and educational practices encourages purpose and goals to be clearly specified. To achieve this, one can compare existing practices and achievement with what are considered acceptable and desirable nationally (Castaldi, 1994). Additionally, long-range academic goals are developed to address identified educational problems (Castaldi, 1994; Graves, 1993; Stevenson, 2007; Tanner & Lackney, 2006).

Identifying long-range academic goals on the basis of facts and logic reduces the possibility of emotional forces dictating the eventual design (Castaldi, 1994). Focusing on long-range academic goals instead of creating a wish list encourages data-driven decision making. Additionally, formulating long-range academic goals assists a board of education in making design decisions on the basis of a logical long-range plan for the district (Castaldi, 1994; Tanner & Lackney, 2006).

Principles of effective long-range academic goals address changing approaches in education, technology, instruction, and other factors that will determine future needs and uses of the new school facility (Perkins, 2001; Stevenson, 2007). These academic goals reflect what the school system should work toward and how it will commit its financial resources toward the new facility (Earthman, 2000).

Long-range academic goals provide items to be included within the pre-design phase. In addition, these goals assist in creating functional facilities in which teachers can utilize modern teaching methods and students can effectively learn (Earthman, 2000). However, the extent to which academic goals are linked to the design of the physical environment has received little attention (Sanoff, 2000). Current learning styles and teaching methods suggest the need for a new form of learning environment

(Sanoff, 2000, p. 106). Obtaining and maintaining educational quality requires changes in the facility planning process (Sanoff, 2000). Planning participants identify the academic outcomes and learning activities that are supported by each identified academic goal (Castaldi, 1994; Sanoff, 2000, p. 108).

States across the country vary in the emphasis and requirements of district officials to include long-range academic goals in their predesign educational planning phase. Alaska recognizes the value in identifying long-range academic goals; it requires the identification of such goals to be aligned with the design of the facility (Alaska Department of Education, 2005). However, the department warns district officials to separate “educational faddism from sound educational practice” (Alaska Department of Education, 2005, p. 16).

New Mexico requires district officials to identify goals that describe the future state of the district’s educational programs (New Mexico Public School Capital Outlay Council, 2007). New Mexico’s facilities master plan requires district officials to address the following with regard to long-range goals: where the district is currently with regard to academics, where the district wants to be, and the plan to achieve the goals. New Mexico’s Public School Capital Outlay Council then requires districts to develop a strategy to prioritize capital projects in relation to these goals. As part of a required 5-year plan, New Mexico districts identify a vision and develop a “road map” (New Mexico Public School Capital Outlay Council, 2007, p. 8) for long-term facility construction.

Other states, such as Virginia, do not offer planning or construction guidelines (Virginia Department of Education, 2007). These states allow individual districts to

determine the extent to which predesign educational planning is utilized prior to construction. South Carolina allows school districts autonomy in regard to the predesign educational planning utilized prior to school construction (South Carolina Department of Education, 2007). Therefore, South Carolina does not require long-range academic goals to be identified prior to the design phase. Conversely, North Carolina requires local boards of education to develop long-range facility plans; however, its long-range plans focus primarily on enrollment and grade configurations and do not identify academic goals (North Carolina Department of Education, 2003).

#### Educational Specifications

In conjunction with utilizing the objectives and integrating long-range goals, a district needs to formulate the “educational specifications” during the pre-design educational planning phase (Perkins, 2001, p. 73). The educational specifications are developed and identified by one or more educators within the district and include the goals and culture of the school district (Brubaker, 1998; Perkins, 2001). The effectiveness of identifying the educational specifications increases if a larger group of participants assists with the identification (Graves, 1993). These data include the type of space most requested by educators within the district, the educational delivery system most often used, detailed functional requirements of loose equipment, defined use of each space, and other services needed (Perkins, 2001; Tanner & Lackney, 2006). The challenge to the planning team, architect, and educational planner is to integrate these educational specifications into the design of the new school.

In the past, educators would prepare the educational specifications for the school project (Perkins, 2001). However, the complexity of the average school

construction project and the increasing demands on educators have resulted in an increase in the number of participants who identify educational specifications (Jilk & Copa, 1997). Recent school construction projects have utilized a larger number of participants and officials needed to participate in this predesign educational planning phase (Graves, 1993; Jilk & Copa, 1997; Perkins, 2001). In addition, as schools have accepted an increasing number of responsibilities, the need for more careful preparation of educational specifications has become even more essential (Graves, 1993; Jilk & Copa, 1997).

Identifying the educational specifications of the district is probably the most important issue that must be completed prior to the design phase of a new school (Perkins, 2001). Understanding “how the physical facility relates to and can support the learning process” (Perkins, 2001, p. 1) has a direct impact on the educational process.

According to Tanner and Lackney (2006), educational specifications include a detailed description of the specific characteristics of the school’s learning environment. The educational specifications include the mission (Graves, 1993; Stevenson, 2007; Tanner & Lackney, 2006), the philosophy of education as it relates to teaching and learning (Graves, 1993; Tanner & Lackney, 2006), and the educational goals of each program area (Tanner & Lackney, 2006).

District officials, in conjunction with the planning team, assist the architect in designing the school to include the educational specifications in the building’s design and to thereby achieve the intended educational outcomes. According to Graves (1993), the content of the educational specifications address the following: (a) the

reason a new school is being constructed, (b) who the clients are, (c) what subjects will be taught; and (d) the instructional delivery of the teachers.

According to Graves (1993), the first question that must be addressed in the predesign phase is why a building project is being recommended. Is the building being constructed to replace an outmoded facility? Is there a need for specialized areas of the building? Will the new facility be expected to address a change in the educational philosophy of the district? Or, is a new school being sought to address a combination of all three (Graves, 1993)? The identification of educational specifications will assist in addressing the answers to these questions.

The process of identifying the school's educational specifications also needs to include focusing on the teachers who will be using the new facility (Graves, 1993). Anticipatory planning can address not only who is using the facility now but also who may be using it in the future (Graves, 1993). Additionally, there may be special student age-group relationships to consider when predesigning the building (Graves, 1993).

In addition, identifying the school's educational specifications will focus on the subjects that will be taught in the new facility (Graves, 1993). Required courses, electives, enrichment, and special education courses must be included in identifying educational specifications (Graves, 1993).

Identifying the school's educational specifications will focus on the instructional delivery method that will be utilized most frequently in the new facility (Graves, 1993; Jilk & Copa, 1997). District officials will identify whether the design will focus on a traditional classroom setting (Graves, 1993).

Unfortunately, many school districts ignore identifying the educational specifications of their district (Perkins, 2001). However, failing to utilize this component of predesign educational planning can create unrealistic or unsubstantiated expectations that can “haunt” an entire school building project (Perkins, 2001, p. 87).

Alaska requires educational specifications to be completed prior to school construction (Alaska Department of Education, 2005). Additionally, Alaska clearly identifies what should be included within the educational specifications. Alaska requires district officials in conjunction with educators and community representatives to formulate these specifications. Well prepared educational specifications are “an integral part of the creation of a building that enhances the learning environment, accommodates learning activities, and provides pleasant surroundings for occupants (Alaska Department of Education, 2005, p. 1). Georgia also requires educational specifications to be prepared by district officials prior to receiving state outlay funds (Georgia Department of Education, 2003). However, other states such as Missouri, North Carolina , South Carolina, and Virginia do not list educational specifications as a requirement prior to construction of schools (Missouri Department of Education, 2006; North Carolina Department of Education, 2003; South Carolina Department of Education, 2007; Virginia Department of Education, 2007).

#### The Predesign Educational Planning Team

Although the prospect of a new school is met with excitement, many school construction projects are often viewed as a dreadful undertaking by district officials.

This is often caused by the disappointed and angry stakeholders who feel that their needs and requests were not taken into account during the design of the new school. Fortunately, these situations can be remedied by including a diverse inclusion of numerous stakeholders within the predesign educational planning process. According to Gaylaid (1989), participatory predesign planning teams that include a diverse membership are becoming the rule rather than the exception.

Involving the entire community from the outset of the predesign educational planning phase will increase communication and address concerns regarding issues and eventual costs. Including community members in the planning process can also accommodate the needs of both the community members and the school (Henry, 2000). In addition, involving the community in gathering information and inviting its input can unite everyone during the predesign educational planning phase. According to a survey of participants from Warren Local Schools in Vincent, Ohio, 93% affirmed that the process united the community (Henry, 2000).

Offering community members the opportunity to attend public meetings and distributing information in the media will help to ensure that all the interested members of the district will be knowledgeable regarding the predesign educational planning process and the steps associated with the eventual design. Frequent and thorough communication with the entire community during the predesign educational planning phase will help to address misinformation regarding the planning and design process. Many school projects use webpages to further inform district constituents of the progress of the predesign educational planning phase.

Recognizing the integral role of the predesign educational planning team in the eventual outcome of a new school, many states have now focused attention on this requirement (Griffith & Fonda, 2007). Several states across the country have initiated the process of requiring specific stakeholders to be included within the design and planning of school construction projects (Beaumont, 2003; Griffith & Fonda, 2007). In several of these states, ensuring that the composition of the planning team is diverse and its responsibilities are clearly detailed is just one of the items required to successfully complete the planning phase of the project. For example, in the state of Kentucky, school construction projects require broad community involvement in the school facility planning as well as public forums and hearings (Beaumont, 2003). Other states that require collaborative planning teams include Maine, Rhode Island, and New Jersey. The state of New Jersey mandates that a school district constructing a new facility file its school construction plan and list its planning team participants prior to designing the school (Beaumont, 2003). “Even though inclusive, well-coordinated, and long-range planning for school facilities can help save money and ensure high-quality, well maintained schools, such planning is often undervalued, poorly supported, or both” (Beaumont, 2003, p. 9).

Likewise, Alaska requires a school district to form a planning team to include a cross section of students, teachers, administrators, parents, and community members prior to receiving state financial aid (Alaska Department of Education, 2005). Alaska recommends a minimum of 12 members, although the number may vary within each community.

Georgia requires every school system in the state to have a local facilities planning team and suggests that the team include administrators, finance officials, curriculum, and educators (Georgia Department of Education, 2003). It is interesting to note that the plan must not only be approved by the Georgia Department of Education but also be validated by a team of educators from outside the local school system (Georgia Department of Education, 2003).

However, several states, such as California, include only a list of suggested members of the planning team (California Department of Education, 1986). Specific participants in California are not required for districts to receive state assistance. Yet, the state does list suggested membership of planning teams to include representatives from the board of education, community members, teachers, principals, and classified personnel (California Department of Education, 1986, p. 1). Minnesota and South Carolina also recommend a diverse team of stakeholders but do not have specific requirements (Minnesota Department of Education, 2003; South Carolina Department of Education, 2007).

None of the states planning guidelines that were reviewed, including those of California and Georgia, list students in their suggested list of planning team members (California Department of Education, 1986; Georgia Department of Education, 2003). Other states, such as North Carolina and Virginia, do not require or suggest specific members of the planning team (North Carolina Department of Education, 2003; Virginia Department of Education, 2007).

An additional benefit of including varied stakeholders, according to Frank Ruffini, is that community engagement by a local school district can be an important

component to the school's design plans and ability to pass bond levies (as cited in Schehl, 2004b, p. 1). Ruffini further noted that receiving public input, holding meetings, distributing literature regarding the plans, and two-way communication are all important elements that should be included within the design team's activities (as cited in Schehl, 2004b).

As stated earlier, the U.S. Department of Education endorses six principles that are recommended to be followed when planning school construction. One of these principles is the involvement of all stakeholders in the planning process (Lackney, 2001). The U.S. Department of Education lists stakeholders as educators, parents, students, and community members. Maximizing faculty input within the planning team about their desired educational program is also recommended (Gaylaird, 1989; Myers, 1993). In addition, the principles recommend that the group consists of varying age and cultures and that it include both genders (Lackney, 2001).

However, having an inclusive planning team does not necessarily guarantee that everyone will actively participate. The team's planning should be a highly participatory process (Gaylaird, 1989; Lackney, 2001). Not only should a wide range of stakeholders be invited to the planning meetings but a process should be in place to encourage a great deal of participation and input from each of the members.

It is important that the planning team consists of numerous individuals with varying backgrounds to contribute informed and diverse suggestions to the project. Financial constraints may play a role in the actual number of professionals included on the team. However, it is recommended that the predesign educational planning team consist of up to 10 or more groups of individuals representing the following

professions (Perkins, 2001): (a) architects, (b) educational planners, (c) equipment specialists, (d) interior designers, (e) civil engineers, (f) mechanical engineers, (g) acoustical engineers, (h) electrical engineers, (i) plumbing and fire protection engineers, (j) construction managers, (k) lighting designers, and (l) landscape architects.

Engaging a larger number of varied stakeholders in the predesign educational planning phase could assist school officials in identifying areas of need and in addressing educational objectives and specifications in the new school. Doherty and Futral (2000) argued that stakeholder participation in determining facility needs is the least expensive part of the building process and yet often is not given the time and attention necessary to be done properly. Similarly, according to Lackney (2003), “from the very beginning of the planning process one main objective should be to obtain multiple perspectives while exploring all potential problems and opportunities” (p. 2).

According to DeJong and Staskiewicz (2001), there are many approaches to selecting the planning team that need to be considered. DeJong and Staskiewicz listed five steps that should be followed when involved in the planning process, and two of these five steps focus on the team’s overall inclusiveness. One of the two steps identified by DeJong and Staskiewicz is “community dialogue” (p. 22). Multiple dialogue sessions are held to identify priorities across the district. Participants are not chosen by district officials; instead, they are selected by the community leaders to increase the inclusiveness in the process. According to DeJong and Staskiewicz, these dialogues might include a wide range of participants from staff, parents, students,

government officials, community members with children, and community members without children. In addition, by including this wide range of participants in the predesign educational planning phase, fresh ideas and a greater sense of ownership in the eventual design can be fostered (Smith, 2003).

The architect is the individual who is charged with assisting in the planning process and transforming the vision and objectives into reality (Osborn, 2004). Typically, school officials view the architect as the individual who is hired only to generate the drawings and blueprints for the new school (Brennan, 2004). However, including the architect in the initial planning phase, prior to formulating the blueprints and planning the new school, is an important step in ensuring that all the stakeholders are pleased with the final design.

An architect can assist the district and the design team by providing valuable information prior to the planning phase, including considerations such as functional requirements, operability standards, life cycles of loose equipment, and other project requirements (Brennan, 2004; Perkins, 2001). An architect can further assist the design team by providing experience from previous projects to offer balanced options during planning sessions that include varying proposals by stakeholders. Although stakeholders may request various features to be included within the new school during the planning phase, an architect can provide the structural, mechanical, and electrical background to help the group decide whether their requests are feasible (Brennan, 2004).

Throughout the planning phase, the architect should be expected to share expertise with regard to local building codes and government requirements and

should also have a thorough knowledge of the *Design Manual* (Osborn, 2004).

Failing to comply with regulations and laws such as these could delay the project.

Steps can be followed to ensure that the architect selected for a district meets all of the stakeholders' needs during the predesign educational planning phase. The first includes asking the prospective architects specific questions during the interview process regarding their background and experience in the predesign educational planning phase. According to Young (2004), questions and answers regarding predesign educational planning should involve succinct answers to questions and provide evidence that the architect has experienced the predesign educational planning phase of a school project. Young cautioned districts to be wary of architects that respond in an interview that they have never experienced a negative or difficult situation with regard to predesign educational planning. Delays, polarized stakeholders, and personal agendas are all typical situations encountered during a planning phase (Young, 2004). Architects should be encouraged and required to answer these types of problem-solving questions prior to being selected for a school project.

After an architect has been selected, it is crucial that district officials clearly define the roles, expectations, and responsibilities of the architect at the outset of the planning phase (Brennan, 2004). Often, school officials complain that the architect wants to design a work of art, whereas district administrators want a building that is functional (Brennan, 2004). This conflict can be avoided if district officials clearly define the roles and expectations of the architect early in the predesign process.

There are numerous benefits to inclusive team planning. The first benefit is that a “wider perspective can avert many roadblocks to implementation later in the process” according to Lackney (2003, p. 2). In addition, Lackney (2003) noted that inclusive planning can have the positive effect of “authentic participation,” building greater community support and giving the community a larger degree of ownership in the finished product (p. 2).

Although district officials may attempt to implement an inclusive planning process, many still succumb to common errors. According to Doherty and Futral (2000), common pitfalls might include rushing the process without allowing time for each step, failing to consult with all the users, and writing an incomplete program statement (p. 42). School planning is challenging and typically involves many representatives (Perkins, 2001). Even small school projects can take 2-3 years to complete, and larger projects take more than 5 years. A dynamic planning phase that identifies the priorities of the district and stakeholders in addition to planning for future developments in education ensures a successful school project (Perkins, 2001; Smith, 2003; Stevenson, 2007).

#### Educational Planner

Often, the physical components of a new school, including items such as loose equipment and furniture, are the most requested items by stakeholders of a new school. Regardless of the planning team participants' background in school construction, many have experience with specific items of equipment. These same participants mistakenly believe that the inclusion of items such as new computers or desks can be a benefit to the educational program. Likewise, construction employees

who have experience in building other types of facilities mistakenly believe that the construction of a school is no different than any other building type. However, research has indicated that physical items do not automatically translate into an improved learning environment. In addition, a background in general construction or specific equipment does not automatically translate into a successful school design. It is imperative that the design of the new school coincides with the educational vision and educational objectives of a district to ensure that form will follow function. Therefore, many experts in the field of school construction recommend the utilization of an educational facility planner (Abramson, 2005; Doherty & Futral, 2000; Fielding, 1999b; Kowalski, 1983; Sausner, 2002).

When the planning process is initiated, numerous decisions must be made by the planning team. Members of the planning team can be easily swayed and overwhelmed by decisions regarding items such as location, cost, time, needs, and desires for the new school. An individual who not only is trained to facilitate meetings with diverse members of the team but also has a knowledge base of architecture and understands needed items by educators would be vital in this process. An educational facility planner should possess all of these skills and keep the group focused on the long-term academic objectives of the district and educational vision of the school during the planning phase. The eventual facility design meeting the educational vision of the district should be the overriding objective of the educational facility planner (Sausner, 2002).

According to Tom Kube, every school construction project needs an architect, but not every architect is necessarily an educational facility planner (as cited in

Fielding, 1999a). Many school construction experts recommend the use of an educational facility planner who (a) is familiar with planning strategies, (b) is competent in managing all of the stakeholders that would be included in the design, (c) has a large knowledge base of specific educational topics and strategies, and (d) can assist in ensuring that the new facility could support these new trends (Fielding, 1999a). Therefore, the hiring of an educational planner is recommended by practitioners and experts in the field of predesign educational planning. The educational planner would focus attention on the educational programs, district's vision, and long-range academic goals of the district. The educational program of the school should drive the design of the building (Sausner, 2002).

The use of an educational planner gives the district an individual who is capable of sharing various items utilized in other districts with which local administrators may not be as familiar. An effective planner has the ability to promote acceptance of new ideas and assist members of the planning committee to be more accepting of change. Furthermore, an educational facility planner can save the district both time and money by ensuring that the new facility meets the educational needs and trends of the specific district. Because each district is unique, each building design should also address its distinctive needs. A school district that designs a new facility without taking into consideration the needs of the staff and curriculum could potentially require additional personnel and facility costs in the future (Fielding, 1999b). An educational facility planner can assist the stakeholders in ensuring that the new school does not make those costly mistakes.

According to Doherty and Futral (2000), “The planner is a catalyst to help administrators understand alternative approaches to solving their facility problems” (p. 41). The characteristics that an educational planner should possess, according to Binger et al. (2003, p. 46), are shown in Table 10:

Table 10

*Characteristics of an Educational Facility Planner*

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Strong background in facility planning

Solid working knowledge of current educational research and best practices

Effective communication skills as a listener, speaker, and writer

Experience and skill in facilitating large meetings

Ability to build consensus

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*Note.* From “Schools as Centers of Community: A Citizens Guide for Planning and Design,” by S. Binger, L. Quinn, & K. Sullivan, 2003, p. 46.

Unlike an architect or a construction manager, an educational planner possesses the expertise to assist district officials in weighing construction options with regard to the potential costs and educational consequences (Abramson, 2005). Whereas the construction manager and architect would have the background to assist in these decisions with regard to cost and/or structural significance, the educational planner assists with the effects these choices have on instruction and delivery (Kowalski, 1983). Architects have a vested interest in the appearance of the new

school, whereas an educational planner should be more interested in how the various items assist teachers and students (Abramson, 2005).

Although experts and practitioners recommend the utilization of an educational planner, states across the country vary in the degree each makes this a requirement in exchange for state aid. For example, Alaska encourages school districts to employ an educational planner (Alaska Department of Education, 2005). However, the state also recognizes that budget constraints may limit certain districts from being able to afford such an outside professional. Minnesota and South Carolina also encourage district officials to employ an educational planner but do not require the employment for final approval (Minnesota Department of Education, 2003; South Carolina Department of Education, 2007). Several states, such as Alabama, California, Georgia, North Carolina, and Virginia do not mention educational planners in their facilities guidelines (Alabama Department of Education, 2007; California Department of Education, 1986; Georgia Department of Education, 2003; North Carolina Department of Education, 2003; Virginia Department of Education, 2007). Missouri requires district officials to hire a registered architect but does not suggest the employment of an educational planner in its guidelines (Missouri Department of Education, 2006).

#### Length of Time for Predesign Educational Planning

One of the concerns districts have about extensive predesign educational planning is the prospect of including a large number of diverse stakeholders with differing opinions, because it could consume a long period of time in relation to the overall design process (Mason & French, 2004). The time spent on predesign

educational planning can be viewed as unnecessary and costly to district officials and stakeholders. Bingler et al. (2003) claimed that "It may take a year of thoughtful, concentrated work to build the community consensus necessary for a quality planning process" (p. 46).

The optimal amount of time spent on school predesign educational planning can be a delicate balancing act; if a group does not spend enough time on it rash decisions can be costly to the district. Likewise, if a district spends too much time during the predesign educational planning phase, burnout can occur, resulting in a loss of continuity in decision making (Perkins, 2001). To prevent the predesign educational planning phase from becoming a never-ending process, experts and practitioners have offered recommendations with regard to the amount of time devoted to the planning process.

Momentum and continuity are important components to maintain during the predesign educational planning phase. Even the most effectively planned school projects can last from 4-5 years (Perkins, 2001), so it is imperative that the time spent on the predesign educational planning phase proceeds in an orderly manner, with regular meetings scheduled throughout the process. Maintaining momentum encourages participants to continue to stay active in the process. Meetings that are poorly scheduled tend to increase the amount of time involved in the process and discourage stakeholders from continuing to participate. Once the predesign educational planning process begins, a calendar of meetings should be clearly scheduled and agreed upon by the planning team participants (Perkins, 2001).

Creating a calendar allows all members of the team to examine the scheduled deadlines and appreciate the exact amount of time involved.

Projects that allow the predesign educational planning phase to proceed slowly and longer than needed incur countless problems, including expenses and participant burnout. According to Perkins (2001), schools that allow the predesign educational planning phase to last longer than the recommended 4-5 years of the project will incur costs that could double or triple the original estimates. The longer the process is allowed to take, the less likely it becomes that planning team participants will offer a fresh perspective (Perkins, 2001).

According to educational facilitators Mason and French (2004), the way to ensure that the length of predesign educational planning time maintains an optimal level of intensity and input is to initiate a “charette” (p. 157). The term *charette* describes an intense, short-term predesign planning activity designed to gather input from a diverse group of stakeholders in a short period of time (Mason & French, 2004). Mason and French recommended a time period of 2-3 days of intense planning to accomplish the charette phase. Facilitating such a short period of planning allows for immediate input from planning participants. In a more traditional predesign educational planning situation the time span would include multiple meetings over a period of months or years. Unfortunately, the longer this phase lasts, the more likely it becomes that the participants will lose the group dynamic, as individuals miss meetings. Also, the longer this process lasts, individuals that are absent lack the instant feedback of having all the stakeholders together at the same time.

Districts might shy away from inclusive predesign educational planning for fear of the prolonged period of time it involves and the potential for disagreement among the participants. However, Lackney (2003) wrote, “participation may diffuse politically motivated issues and lay the groundwork for constructive dialogue between normally divisive groups in the community” (p. 2).

### Cost of Predesign Educational Planning

Because a school district does not possess unlimited resources, the budget generally dictates the extent of predesign educational planning that is allotted for a school construction project (Brennan, 2004). An entire community-based predesign educational planning program can cost between \$12,000 and \$16,000 (Henry, 2000).

Yet, careful predesign educational planning can actually save a district money. For example, the costs associated with change orders can add hundreds of thousands of dollars to the eventual cost of a school project. However, change orders can be decreased through careful predesign educational planning and the work of the design team and architect (Brennan, 2004). This is evident when contractors submit change orders as a result of certain building designs not meeting code requirements.

Financially, the cost of poor predesign educational planning can be enormous.

Ineffective predesign educational planning can translate into a district getting only pennies of benefit from every dollar spent on eventual construction (Carey, 2004). If the predesign educational planning is thorough, thoughtful, and careful, the occurrence of these types of costly changes can be decreased or eliminated (Brennan, 2004). Effective predesign educational planning can stretch the budget further.

Another obstacle to predesign educational planning is the amount of money many might view as a requirement for well thought-out planning. "When citizens want hard data and measurable results, the whole notion of planning might well be seen as an expendable frill," wrote Bingle et al. (2003, p. 45). These authors also observed that "a community-based planning process might be viewed as a luxury the district can ill afford" (p. 45).

### Summary of Predesign Educational Planning

The Rebuilding Ohio Schools: A 12-Year Commitment program has spent over \$3.4 billion on school construction across the state of Ohio (OSFC, 2003). As stated earlier, although the OSFC has strict guidelines with regard to construction materials, no such guidelines exist with regard to the predesign educational planning phase prior to the design. Because financial constraints are requiring more and more districts to search for the most cost-effective ways to conduct business, now is an opportune time to examine the predesign educational planning utilized by Ohio district officials that are coordinating the construction of new facilities.

Citizens of Ohio should be asking several questions when a local school district begins the process of designing a new school that is either fully or partially funded by the local community. First, how is the district's vision being incorporated into the design of the new facility? In addition to the district's vision, how are the long-term academic goals and instructional objectives being utilized?

Second, who is in charge of facilitating or leading the planning of the design within the district? Having an independent planner working with the planning group ensures that the district receives an objective unbiased opinion of the goals and

objectives of the project. Using the architect as the sole facilitator of this process could pose a conflict of interest (Carey, 2004). The facilitator should have no financial interest in the outcome of the eventual goals and objectives (Carey, 2004).

Educational planners have the potential to resolve countless dilemmas because not only do they possess the technical expertise to facilitate large groups, but they also have knowledge of planning and construction. In addition, because they are hired by the board of education, they often have a greater understanding of the desired outcomes of the planning phase.

Further research regarding predesign educational planning could be conducted to determine which of these elicit the most satisfaction from the greatest number of stakeholders in a given district. However, the purpose of this study is determining the extent of predesign educational planning utilized across the state within the identified population.

## CHAPTER 3

### METHODOLOGY

The purpose of this chapter is to provide a description of methodology. Content includes descriptions of the following: research design, population, respondents, variables, data collection, instrument validity and reliability, and statistical data analysis.

#### Population and Respondents

The study's population consisted of superintendents in districts that had constructed a new school during the 5-year period of 2000 through 2004 (see Appendix A) and who were still employed as the superintendent in the same district as of March 1, 2007. The time period of 2000 through 2004 was chosen because it encompasses the initial 5 years of the Rebuilding Program, which increased the number of Ohio school construction projects. Surveys were mailed to these 109 superintendents. Their names and business addresses were obtained from the *Ohio Department of Education 2006 School Directory* (Ohio Department of Education, 2006). Each respondent was guaranteed confidentiality, and none of the respondents surveyed was identified by name in the dataset or in the dissertation findings.

#### Variables

The criterion variable was the quality of predesign educational planning utilized prior to the design and construction of the new school facility during the time period studied. Outcomes were reported in the quality of predesign educational planning as determined from survey responses. The survey questions were based on the following predesign educational planning items: identifying and integrating

educational specifications (Castaldi, 1994; Graves, 1993; Kowalski, 2002; Perkins, 2001; Tanner & Lackney, 2006), setting long-range academic goals (Carey, 2004; Castaldi, 1994; Graves, 1993; Henry, 2000; Perkins, 2001; Tanner & Lackney, 2006), consulting with stakeholders (Beaumont, 2003; Doherty & Futral, 2000; Fox, 1999; Graves, 1993), utilizing independently hired consultants (McCune, 1986), and integrating the district's vision (Carey, 2004; Graves, 1993; Henry, 2000; Perkins, 2001; Tanner & Lackney, 2006).

The first predictor variable was the percentage of construction funding received from the OSFC (see Appendix A). The OSFC ranks each district annually on the basis of AVPP and then assigns a percentage of state financial assistance for school construction. If a district served by a superintendent in the study population did not qualify for state financial assistance during the time period studied, its officials instead participated in the Expedited Local Partnership Program (ELPP). An ELPP requires school districts to entirely fund construction of a portion of their district's master project through local monies prior to the time state funding is available through the Classroom Facilities Assistance Program (CFAP). If a district subsequently qualifies for CFAP, it is reimbursed a predetermined percentage of funding for construction completed under the ELPP (OSFC, 2005). ELPP districts listed in Appendix A did not receive a percentage of funding from the OFSC during this study's time period. Therefore, ELPP districts in Appendix A received 0% from the state of Ohio during the time period included in this study. The percentage of state funding for each district project was obtained from the *2005 Ohio School Facilities Annual Report*.

The second predictor variable was district enrollment in 2004 based on official ADM data (see Appendix A). Enrollment figures were obtained from the *2004 Ohio Department of Education's ADM Report* (Ohio Department of Education, 2004a). A district's ADM was determined by the following steps. A headcount of students was taken the first full week in October, and every student was counted as 1. During this week, school districts counted their students on a daily basis. At the conclusion of the week the number of days present and excused for each student was divided by 5 days to calculate the ADM (Ohio Department of Education, 2004a).

The final predictor variable was the districts' taxable wealth (see Appendix A). These figures were obtained from the *2004 Ohio Department of Education's Assessed Valuation per Pupil Report* (Ohio Department of Education, 2004b). The AVPP is the assessed value of all the property within a school district that is taxed for school purposes divided by the number of pupils enrolled (ADM) in the district (Stabile, 2003). According to Stabile (2003), the AVPP is the best measure of wealth available to support a school district.

After reviewing the data sources for the selected variables, the researcher determined that they varied only slightly over the 5-year period examined in this study. Therefore, only 2004 data were used to address the research questions posed in this study.

### Instrumentation

McMillan and Schumacher (2001) asserted that there are two primary reasons for using surveys to collect data: versatility and efficiency (p. 303). Administering a survey was an efficient way to collect data in a study of this size with members of the

study population spread across Ohio. Surveys are also efficient because “data on many variables can be gathered without substantial increases in time or cost” (McMillan & Schumacher, 2001, p. 303).

The instrument used included eight questions (see Appendix B) developed by the researcher based on a review of the literature on predesign educational planning. The survey increased the efficiency of collecting the same data from respondents across different districts. Respondents were asked to rate the extent to which specific predesign educational planning components were utilized during each of the districts’ school construction projects. The extent of predesign educational planning was rated on a scale of 1 to 4 with a score of 1 indicating *not at all*, 2 indicating *to a small extent*, 3 indicating *to a moderate extent*, and 4 indicating *to a large extent*.

In the summer of 2006, a panel of experts (see Appendix C) reviewed each item in the survey. In addition, survey items were cross referenced with citation(s) from related literature listing recommendations for effective predesign educational planning. On the basis of the responses and feedback from the panel, the researcher identified 13 survey questions as ambiguous or redundant and eliminated them. Based on the feedback from the panel, questions were modified as deemed necessary.

Using the revised survey, the researcher conducted a pilot administration of Kentucky superintendents who had recently managed the construction of new schools. The pilot survey was useful in determining the reliability of the survey results. For example, on the basis of the feedback from the pilot group, the researcher altered the definition of the Ohio study population to include only superintendents in office at the time of predesign planning and remaining in office at the time that data

for the study were collected. This decision was based on the belief that having continuity in the superintendent position was necessary to obtain accurate information about predesign planning.

Using literature related to predesign educational planning, the researcher developed a rubric containing recommended items for normative school predesign educational planning. Table 11 lists the suggested predesign educational planning items and the corresponding survey question(s).

Table 11

*Suggested Predesign Educational Planning Items and the Corresponding Survey Question(s)*

Suggested predesign educational planning items	Survey question(s)
Utilizing the district's vision in predesign educational planning (Carey, 2004; Earthman, 2000; Graves, 1993; Henry, 2000; Perkins, 2001; Tanner & Lackney, 2006)	1
Integrating instructional objectives into physical spaces (Tanner & Lackney, 2006)	2
Consulting with stakeholders in the predesign educational planning phase (Beaumont, 2003; Doherty & Futral, 2000; Fox, 1999; Graves, 1993)	3, 4, 5
Forming a planning team during predesign planning (Carey, 2004; Henry, 2000; Osborn, 2004; Perkins, 2001)	3, 4, 5
Ensuring that educational specifications were prepared prior to the design phase (Castaldi, 1994; Graves, 1993; Kowalski, 2002; Perkins, 2001; Tanner & Lackney, 2006)	6
Utilizing an educational planner (Abramson, 2005; Fielding, 1999b; Sausner, 2002)	7
Utilizing the district's long-range academic goals in planning (Carey, 2004; Castaldi, 1994; Graves, 1993; Henry, 2000; Perkins, 2001; Tanner & Lackney, 2006 )	8

## Data Collection

A cover letter (see Appendix D) and a survey were mailed to the study's population consisting of superintendents in districts that had constructed a new school during the 5-year period of 2000 through 2004 (see Appendix A) and who were still employed as the superintendent in the same district as of March 1, 2007.

Superintendents were assured confidentiality and were told that the only identifying information was a code that allowed the researcher to determine if the survey had been completed and returned.

Respondents were requested to return the survey within 2 weeks after having received it using the self-addressed stamped envelopes provided by the researcher. A follow-up survey to non-responding district superintendents was sent on the 3rd week after the initial mailing based upon the code on the survey.

#### Institutional Review Board (IRB)

The proposed study was submitted to the University of Dayton Committee for the Protection of Human Subjects (also referred to as the IRB) for approval. The IRB reviews research projects that involve human subjects to ensure that two broad standards are upheld: (a) that subjects are not placed at undue risk and (b) that they give uncoerced, informed consent to their participation. Protecting those that were surveyed was of paramount importance to the researcher. Participants were assured that confidentiality would be followed as the surveyed responses were gathered. Completing the survey did not require participants to reveal their names, but surveys were coded to identify the districts that responded and to measure the nonresponse rate. Each of the participants was offered the opportunity to view the completed research findings at the conclusion of the study.

Respondents were not coerced into participating. Closely related to the notion of voluntary participation was informed consent. That is, the respondents were fully informed about the procedures before consenting to participate. The cover letter described the rights and risks associated with completing the survey.

### Data Analysis

After surveys were returned, data were entered into Version 12.0 of the SPSS software. Descriptive statistics were calculated for demographic data (percentage of state funding, district size, and district wealth). They included means (the average score), standard deviations (measure of dispersion) for the continuous (interval/ratio) variables (district size and district wealth), frequencies (number of districts in a particular category), and percentages.

Data were collected regarding the extent to which predesign educational planning was utilized by district officials in relation to new schools constructed in Ohio from the beginning of calendar year 2000 through the end of the calendar year 2004. The quantity and quality of predesign educational planning used by district officials were determined by responses provided to relevant survey questions.

Outcomes for Research Question 1, the extent to which local school officials engaged in predesign educational planning, were determined using descriptive statistics. Data were reported in frequency and percentages. Outcomes for Research Question 1 were reported in the quantity of predesign educational planning as reported from the survey results. Quantity was calculated on the basis of percentage and frequency with which each of the surveyed items was utilized by district officials.

Outcomes for Research Question 2 were reported in the quality of predesign educational planning as reported from the survey results. Means were calculated to answer Research Question 2, focusing on the quality of predesign educational planning. Quality was calculated from the survey's range of scores, from 1-4, as reported by the respondents. The extent of predesign educational planning was rated

on a scale of 1 to 4 with a score of 1 indicating *not at all*, 2 indicating *to a small extent*, 3 indicating *to a moderate extent*, and 4 indicating *to a large extent*. Quality was defined by a score of 3.0 or higher. Because all eight surveyed items were cited in related literature by practitioners and experts, quality was defined as a score of 3.0 or higher from the surveyed responses. A survey score of 3.0 or higher indicated that a respondent used the surveyed item *to a moderate extent* or higher in predesign educational planning. The researcher calculated means for the eight predesign educational facility planning survey items. Means were then calculated to assess the number and proportion of respondents that fall above and below 3.0.

Data were obtained from superintendents via a mail survey containing eight questions about the quantity and quality of predesign educational planning activities that had occurred. Internal consistency of that scale was assessed with a Cronbach's alpha coefficient, resulting in a value of .74. According to Devillis (2003), a coefficient of .70 is considered minimally acceptable and, therefore, the coefficient for the survey items is at the low end of the acceptable level. Pearson correlations were calculated to examine the possible relationships between the quality of predesign planning and the other three variables (percentage of state funding for the projects, district enrollment, and district wealth).

Outcomes for Research Question 3 were reported by the possible associations between the quality of predesign educational planning and each of the three variables. Quality of predesign educational planning for Research Question 3 was determined by a cumulative score for answers to all eight survey questions. Pearson correlations were then calculated to determine possible associations between quality and the three

variables. The correlations were used descriptively and the extent of association was determined by applying a rubric developed by Cohen and Cohen (1983, p. 161). According to this rubric, small associations were correlations from (+ or -) .01 to .29, moderate associations were correlations from (+ or -) .30 to .49, and large associations were correlations between (+ or -) .50 and higher. Resulting data are reported using tables and descriptions in chapter 4.

## CHAPTER 4

### RESULTS

This chapter presents findings of the data collected with the predesign educational planning survey (see Appendix B). The overall purposes of this study were (a) to determine the quantity and quality of predesign educational planning that occurred for new Ohio elementary and secondary schools in the calendar years 2000 through 2004 (the first 5 years of the current Rebuilding Program) and (b) to determine if selected factors were associated with the quality of predesign educational planning.

#### *Response Rate*

One hundred and nine surveys were mailed to superintendents, who were identified from the *Ohio Department of Education 2006 School Directory* (Ohio Department of Education, 2006). Three weeks later, a second mailing was sent to each person who had not responded. Of the 109 surveys mailed, 101 (93%) were completed and returned, either as a result of the first mailing (76) or the second mailing (25). One hundred and one completed surveys were returned. None of the surveys was returned without being completed.

#### *Findings*

The study's population consisted of superintendents in districts that constructed a new school during the 5-year period of 2000 through 2004 and who were still employed as the superintendent in the same district as of March 1, 2007. There were 109 superintendents that met these criteria. Data were obtained from superintendents via a mail survey containing eight questions about the quantity and

quality of predesign educational planning activities that had occurred (see Appendix B).

*District enrollment.* For districts' enrollment (2004 ADM), the minimum number of students was 382, and the maximum number of students was 62,521 ( $M = 3,651.18$ ,  $SD = 7,861.14$ ). This compares with an average ADM for all 613 Ohio districts of 2,803. Thus, the districts included in this study had an average enrollment slightly above the state average for all Ohio districts.

*District wealth.* For district wealth (2004 AVPP), the minimum was \$26,522, and the maximum was \$220,593 ( $M = 91,825.50$ ,  $SD = 29,989.09$ ). This compares with the state average AVPP (613 districts) of \$121,803. Thus, the districts included in this study had an average wealth level below the state average for all Ohio districts.

*Study's population.* One hundred and one superintendents participated in the study. Frequencies and percentages of the year of OSFC approval for superintendents in the study population are presented in Table 12. The largest proportion of superintendents within the study (25.7%) received OSFC approval in year 2003.

Table 12

*Year of OSFC Approval in Study's Population*

Year	Frequency	%
2000	17	16.8
2001	20	19.8
2002	23	22.8
2003	26	25.7
2004	15	14.9
Total	101	100.0

Note.  $N = 101$ .

*Percentage of state funding.* For percentage of state funding, the minimum percentage was 0.0%, and the maximum percentage was 100% ( $n = 101$ ;  $M = .36$ ,  $SD = .39$ ). Of the 49 districts that received a percentage of state funding, the minimum percentage was 21.0%, and the maximum percentage of funding was 100% ( $M = .75$ ,  $SD = .14$ ). District funding was divided into three groups: districts receiving 0%, districts receiving between 1% and 69%, and districts receiving 70% and above. Fifty-two (51.5%) participants were in a district receiving 0%, 11 (10.9%) participants were in a district receiving between 1% and 69%, and 38 (37.6%) participants were in a district receiving 70% and above. The largest percentages of participants were in a district receiving 0% state share.

*State support of participating respondents.* The OSFC ranks each district annually on the basis of the AVPP and then assigns a percentage of financial assistance that the state of Ohio awards to a school district school construction. If a school district does not qualify initially for state support, its officials may choose to pass a local bond issue in the hope that the state will reimburse the district a predetermined percentage of funding in the future. Districts listed below as “None” under the heading of State Support did not receive a percentage of funding from the OFSC during this study’s time period. Data concerning state support for the eligible respondents and for superintendents providing responses for this study are shown in Table 13.

Table 13

*Number of Respondents Receiving State Support*

	Eligible respondents (N = 109)		Participating respondents (n = 101)	
	Respondents	%	Respondents	%
State support				
None	58	53	52	51
Some	51	47	49	49

*Research Question 1.* Research Question 1 asked “To what extent did predesign educational facility planning occur in relation to new construction projects that constitute this study’s population?” The researcher determined potential

outcomes for Research Question 1, using descriptive statistics. Data were reported in frequency and percentages. Outcomes for Research Question 1 were reported in the quantity of predesign educational planning as reported from the survey results.

Quantity was calculated on the basis of percentage and frequency that each of the surveyed items was utilized by district officials. Frequencies and percentages for participants' responses to Predesign Educational Planning Survey Questions 1 - 8 are presented in Table 14.

Table 14

*Frequencies and Percentages for Survey Questions 1–8*

Survey question	Not at all		Small extent		Moderate extent		Large extent	
	<i>n</i>	%	<i>n</i>	%	<i>n</i>	%	<i>n</i>	%
1	0	0.0	10	9.2	34	31.2	57	52.3
2	0	0.0	7	6.9	40	39.6	54	53.5
3	0	0.0	11	10.9	30	29.7	60	59.4
4	0	0.0	36	35.6	43	42.6	22	21.8
5	17	16.8	57	56.4	17	16.8	10	9.9
6	2	2.0	19	18.8	35	34.7	45	44.6
7	73	72.3	8	7.9	12	11.9	8	7.9
8	5	5.0	14	13.9	51	50.5	31	30.7

*Research Question 2.* Research Question 2 asked “To what extent did the planning comply with normative standards found in the professional knowledge base?”

The researcher calculated potential outcomes for Research Question 2, using descriptive statistics. Each of the selected survey questions was cited as a recommended normative predesign educational facility planning item. Quality was designated from the range of scores, from 1 to 4, as reported by the superintendents. As a result of surveyed items being cited in related literature by practitioners and experts, the researcher defined normative predesign educational planning as a score of 3.0 or higher from the surveyed items. A survey score of 3.0 or higher would mean that a respondent used the surveyed item, as recommended by both experts and practitioners in the field of facility planning, *to a moderate extent* or higher in the predesign educational planning phase.

Means and standard deviations for Predesign Educational Planning Survey Questions 1 - 8 are presented in Table 15. Five of the eight questions met the cutoff point of 3.0 (Questions 1, 2, 3, 6, and 8). Overall, on Survey Question 1—"To what extent was defined educational vision of the district considered in the predesign educational planning phase of the school?"—participants endorsed the item between a *moderate* and *large extent* ( $M = 3.46$ ,  $SD = .67$ ). Overall, on Survey Question 2—"To what extent were instructional objectives integrated into physical spaces in the predesign educational planning phase?"—participants endorsed the item between a *moderate* and *large extent* ( $M = 3.46$ ,  $SD = .62$ ). Overall, on Survey Question 3—"To what extent were teachers involved in predesign educational planning?"—participants endorsed the item between a *moderate* and *large extent* ( $M = 3.48$ ,  $SD = .69$ ). Overall, on Survey Question 4—"To what extent were representatives of the community involved in predesign educational planning?"—participants endorsed the item to a

*moderate extent*, but did not meet the cutoff point ( $M = 2.86$ ,  $SD = .75$ ). Overall, on Survey Question 5—"To what extent were students involved in predesign educational planning?"—participants endorsed the item to a *small extent* and thus did not meet the cutoff point of 3.0 ( $M = 2.20$ ,  $SD = .84$ ). Overall, on Survey Question 6—"To what extent were educational specifications prepared prior to the design?"—participants endorsed the item to a *moderate extent* ( $M = 3.22$ ,  $SD = .82$ ). Overall, on Survey Question 7—"To what extent was an educational planner, hired independently of the architectural firm, involved in the predesign educational planning?"—participants endorsed the item either *not at all* or to a *small extent*, and thus did not make the cutoff score of 3.0 ( $M = 1.55$ ,  $SD = .98$ ). On Survey Question 8—"To what extent was predesign educational planning linked to the district's long-range academic goals?"—participants endorsed the item to a *moderate extent* ( $M = 3.07$ ,  $SD = .80$ ).

Table 15

*Means and Standard Deviations for Predesign Educational Survey Questions 1–8*

Survey question	<i>M</i>	<i>SD</i>
1 To what extent was defined educational vision of the district considered in the predesign educational planning phase of the school?	3.46	0.67
2 To what extent were instructional objectives integrated into physical spaces in the predesign educational planning phase?	3.46	0.62
3 To what extent were teachers involved in pre-design educational planning?	3.48	0.69
4 To what extent were representatives of the community involved in predesign educational planning?	2.86	0.75
5 To what extent were students involved in predesign educational planning?	2.20	0.84
6 To what extent were educational specifications prepared prior to the design?	3.22	0.82
7 To what extent was an educational planner, hired independently of the architectural firm, involved in the predesign educational planning?	1.55	0.98
8 To what extent was predesign educational planning linked to the district's long-range academic goals?	3.07	0.80

*Note.* Quality was defined as a mean score of 3.0 or higher from the range of survey scores, 1 to 4, as reported by superintendents. A survey score of 3.0 or higher indicated that a superintendent utilized the surveyed item between a *moderate* to a *large extent* in the predesign educational planning phase. Five survey questions above resulted in a mean score of 3.0 or higher.

*Research Question 3.* Research Question 3 asked “Does a relationship exist between the quality of predesign educational planning and any of the following variables: (a) percentage of state funding for the projects, (b) district enrollment (ADM), and (c) district wealth (AVPP)?” To examine this, the researcher calculated Pearson correlations among the predictor variables of the percentage of state funding, districts’ enrollment, district wealth, and the criterion variable of quality of predesign educational planning items. Internal consistency of that scale was assessed with Cronbach’s alpha coefficient, resulting in a value of .74. According to Devillis (2003), a coefficient of .70 is considered minimally acceptable, and therefore, the coefficient for the survey items is at the low end of the acceptable level.

The following rubric, developed by Cohen and Cohen (1983, p. 161) was used to determine the extent of association: Small associations were correlations from (+ or -) .01 to .29, moderate associations were correlations from (+ or -) .30 to .49, and large associations were correlations between (+ or -) .50 and higher.

Correlations were calculated to examine possible associations between the quality of predesign planning and three variables, producing the following results: (a) for percentage of state funding,  $r = .07$ ; for district size (ADM),  $r = .09$ ; and for district wealth (AVPP),  $r = -.118$ . Applying the rubric developed by Cohen and Cohen (1983), all three of the variables produced results which would be reported within the small association’s category.

Although the Cronbach’s alpha coefficient, .74, was within the acceptable level according to Devillis (2003) the researcher also calculated the Pearson correlations for each of the individual survey questions to determine if those

associations differed from the previous correlations of all eight items being calculated cumulatively. The correlation for each of the individual survey questions did not differ from the previous correlations and would be reported within the small association's category. More precisely, none of the eight characteristics was found to have had more than a small association (positive or negative) with percentage of state funding, district enrollment, or district wealth. The individual survey correlations are included Appendix E.

### *Summary*

One hundred and one superintendents completed surveys detailing the extent to which predesign educational planning was utilized within the population and time period studied. All eight items included in the survey are recommendations from experts and practitioners in predesign educational planning. Results appear to indicate that several of the recommended predesign educational planning items included within the survey were used only to a *small extent* or used *not at all*. Additionally, the results of the collected data show a small association between the quality of predesign educational planning and the selected variables. Instead, both the quantity and quality of predesign educational planning utilized by district officials during the time period selected varied across the state. Chapter 5 provides a summary of the findings, conclusions, and recommendations for further study.

## CHAPTER 5

### SUMMARY, CONCLUSIONS, AND RECOMMENDATIONS

This chapter includes a summary of research findings. These outcomes include demographic data and data that were used to answer the research questions. In addition, it contains both conclusions based on the findings and recommendations for additional research.

#### *Summary of Findings*

The overall purpose of this study was to determine the extent to which predesign educational planning occurred in relation to construction of new elementary and secondary public schools in Ohio from 2000 through 2004. Respondents selected for this study were superintendents identified from school districts that constructed public schools during the period of 2000 through 2004 and who were still employed by the district as of March 1, 2007. A survey designed for the study was used to collect data regarding predesign educational planning from the superintendents.

One hundred and one of the 109 respondents in the defined study population completed and returned surveys. The respondents were almost equally divided between those who had received a percentage of state financial support for school building construction (49) and those who had not (52). The mean average daily membership (ADM) for these districts was 3,651 ( $\sigma = 7,861$ ). The maximum ADM among these districts was 62,521. The mean ADM for all 613 Ohio districts was 2,803; therefore, the mean ADM for districts employing superintendents in the study population was above average for the state. The mean 2004 assessed valuation per pupil (AVPP) for the districts employing the superintendents in the study population

was \$91,825 ( $\sigma = \$29,989$ ). The minimum AVPP for a district included in the study was \$26,522. This compares to the state average AVPP (613 districts) of \$121,803. Thus, the average AVPP for districts employing superintendents in the study population was below the state mean. Findings for the specific research questions are reported separately.

*Extent of predesign educational planning.* The first research question formulated for this study pertained to the quantity of predesign educational planning that occurred prior to the design phase of the new school buildings. This question was answered by calculating a mean for the collective responses obtained for the eight survey questions (actual results are reported in Table 15 in chapter 4). The possible range for the collective mean was 1 (*not at all*) to 4 (*large extent*). The aggregate mean for the eight survey responses was 2.91 ( $\sigma = 0.46$ ), indicating the extent to which planning occurred was moderate.

*Extent to which planning complied with normative standards.* The second research question was formulated to examine the quality of predesign educational planning. Each of the eight survey questions pertained to a planning characteristic recommended in professional literature on predesign educational planning. An acceptable level of utilization was defined as a response mean of 3.0 or higher, and the mean responses for the eight survey questions are shown in Table 15 in chapter 4. Five of these characteristics met the criterion for acceptable compliance. They were (a) consideration of a defined educational vision, (b) the integration of educational objectives, (c) teacher involvement in planning, (d) the development of educational specifications, and (e) the integration of long-range goals. The remaining three

characteristics did not meet this criterion. They were (a) community member involvement in planning, (b) student involvement in planning, and (c) retaining an educational planning consultant.

*Relationship between quality of predesign educational planning and percentage of state funding for construction.* The third research question pertained to a potential relationship between the quality of predesign educational planning and three district variables: percentage of state funding for constructing a new school in the timeframe studied, district size (ADM), and district wealth (AVPP). This research question was addressed by examining correlations as a descriptive statistic as specified by Cohen and Cohen (1983). The overall correlation for the eight planning characteristics and the percentage of state funding for construction was  $r = .07$ . According to the rubric developed by Cohen and Cohen, this relationship is small.

*Relationship between quality of predesign educational planning and district enrollment (ADM).* The overall correlation for the eight planning characteristics and the district size (ADM) was  $r = .09$ . According to the rubric developed by Cohen and Cohen (1983), this relationship is small.

*Relationship between quality of predesign educational planning and district wealth (AVPP).* The overall correlation for the eight planning characteristics and the district wealth (AVPP) was  $r = -.118$ . According to the rubric developed by Cohen and Cohen (1983), this relationship is small.

### *Conclusions*

Though school construction in Ohio must comply with the *Design Manual*, this document neither requires nor recommends specific predesign educational

planning functions. Other states, (e.g., Alaska, New Mexico) however, require one or more planning activities. Alaska requires school officials to develop long-range academic goals, educational specifications, and instructional objectives for any project receiving state funding (Alaska Department of Education, 2005), and New Mexico requires district officials to present a long-range vision as a prerequisite for receiving state assistance (New Mexico Public School Capital Outlay Council, 2007). Experts writing on school facility planning (Castaldi, 1994; Graves, 1993; Kowalski, 2002; Perkins, 2001; Tanner & Lackney, 2006), uniformly identify educational planning as one of the most critical aspects of facility design. The fact that Ohio policy does not require school officials to engage in these activities probably explains why the quantity and quality of planning examined in this study varied considerably, even among districts receiving state fiscal support for construction.

The massive increase in state funding for school construction in Ohio after 2000 appears to have helped some districts substantially; at the same time, however, approximately half of the new schools constructed in the first 5 years of the Ohio Rebuilding Program received no state support (at least not prior to completing construction). Of those receiving support, the level of state aid was quite high. This outcome suggests that state aid has not been distributed evenly across projects, but districts receiving support have been helped substantially.

Little difference in the utilization of predesign planning was found to exist between projects receiving and not receiving state aid—a finding that does not support the contention that state aid, especially at larger percentages of state funding, increases state control and diminishes predesign planning at the district level. In the

case of Ohio, the failure to find that state support made a difference in the quantity or quality of predesign planning may be explained by three conditions.

1. Ohio, through its facilities commission, has historically exercised control and provided assistance even when school construction was funded entirely or mostly from local property tax revenues. Such centralized control enhances uniformity across school districts in a given state (Kowalski, 2002). District officials have adhered to state recommendations and requirements with regard to construction materials and design features. District officials abide by Ohio's requirements, even when the state does not require pre-design planning, recognizing the requirements included in the *Design Manual* are linked to potential financial assistance.
2. By not requiring predesign planning, the state encourages flexibility and local choice by school board members and superintendents to determine the quantity and quality of predesign planning. Because cost is often a political as well as economic factor, many local officials may not be inclined to follow normative standards that increase planning costs (e.g., retaining an independent educational planner).  
  
Additionally, predesign planning potentially increases time and resources that could affect the completion of the school.
3. Uniformity also is encouraged by required compliance with the *Design Manual*. This document may prompt school officials to believe that their decisions about school design are limited, a state of mind that

leads them to be highly dependent on direction from their architect and state officials. As a result, architects may have presented school officials with similar school designs that are not necessarily based upon thoughtful predesign planning. In large measure, it appears that flexibility and local choice have had an effect on predesign planning; yet, this is not the case when it comes to required design features and construction materials.

Only three of the eight surveyed items (defining an educational vision, integrating instructional objectives, and involving teachers) were identified as having been utilized to a *large extent* by more than 50% or more of the 101 respondents. This finding is worrisome because all eight surveyed items were identified as normative predesign educational planning activities both by a panel of experts and practitioners validating the instrument used in this study (see Appendix C) and by authors who are cited in the review of related literature found in chapter 2. The limited attention given to normative planning activities raises three important questions about the projects studied: What criteria guided design? To what extent did form follow function? Are fiscal resources in Ohio's largest public works program being used wisely?

Additionally, an analysis of the results regarding the quantity of predesign educational planning, as assessed by all eight survey questions, shows wide differences across districts — from planning items not being used at all by district officials to planning items being used to a large extent. It is surprising that the OSFC requires specific construction material through its *Design Manual* but does not require normative activities in predesign educational planning.

The normative standard least deployed was the retention of an educational planning consultant—a planning decision advocated in virtually all modern facility planning textbooks (e.g., Castaldi, 1994; Kowalski, 2002; Tanner & Lackney, 2006). Yet, most superintendents reported that educational specifications had been completed during predesign planning. If such documents had not been completed by an independent planning consultant, they most likely were completed either by the architects retained to design the school or by school officials. In either case, the literature (e.g., Castaldi, 1994; Kowalski, 2002; Tanner & Lackney, 2006) suggests that such specifications may not be sufficiently objective nor representative of current and intended instructional practices.

Moreover, findings related to community involvement in predesign planning are especially troubling. Ohio is a state that requires voter approval for tax revenues for capital outlay. By not including the public in planning activities, school officials are probably missing an opportunity to build goodwill and they may even be giving taxpayers a reason to oppose facility projects.

The quality of predesign educational planning was not found to be even moderately related to percentage of state funding, district size, or district wealth. This outcome suggests that indifference toward predesign educational planning is probably related to past practices embedded in pervasive beliefs about facility planning. In Ohio, for example, state officials have and continue to exert considerable control over facility projects. Consequently, superintendents and other administrators may have been socialized to see their facility planning role as a manager (i.e., determining how

to meet state specifications) rather than as a leader (i.e., determining what should be done to ensure that a facility project is congruent with the district's vision).

Utilizing predesign educational planning validated through research, the literature, and the experiences of practitioners can ensure that an educational facility meets or even exceeds stakeholder expectations (Tanner & Lackney, 2006). Findings reported in this study, however, suggest that most normative planning standards were ignored or used only marginally. This lack of attention to predesign educational planning raises important questions about the future effectiveness of facilities constructed and about the public's perceptions related to cost-benefit ratios.

#### *Suggestions for Further Research*

Given the magnitude of state and local fiscal resources that have been used to improve school facilities in Ohio, it is surprising that so little research has been conducted on the benefits of this investment of public funds. Thus, conducting additional research to analyze the effects of Ohio's school facility funding program should be a high priority for both educational administration scholars and policymakers.

Additional study is necessary to analyze the long-term effects of Ohio's school Rebuilding Program and this study illuminates the need for four specific lines of inquiry.

1. Further investigation should be conducted in relation to factors that influence decisions about predesign planning. Findings here indicate that the relationships between percentage of state funding, district enrollment, and district wealth were small in relation to quality of predesign educational

planning. Thus, identifying influential factors remains critical. If state aid was not a factor, what prompted superintendents to pay only moderate attention to normative standards for predesign planning?

2. More needs to be known about superintendent knowledge of predesign educational planning. Further investigation should be conducted regarding superintendent knowledge of, control over, and ability to implement predesign educational planning. The moderate levels of planning reported here may reflect the fact that many superintendents may not understand the importance of predesign planning; and if this is true, they may be overly reliant on architects and state officials to make decisions that directly or indirectly determine how teaching occurs in a new facility. Additional research should focus on the extent that superintendents understand the normative standards, the extent to which they accept these standards, and the extent to which they are able to apply these standards.
3. More needs to be known about the influence of state officials, architects, and construction managers on predesign educational planning decisions. Further investigation should be conducted regarding the extent to which these individuals encourage or discourage superintendents and board members from developing educational specifications objectively and ensuring that the specifications are congruent with a district vision.
4. Additional research is needed to explore possible associations between predesign planning and the adequacy and effectiveness of school facilities once they are operational.

### *Other Recommendations*

Districts choosing to participate in the Rebuilding Program may receive a percentage of funding from the OSFC if they abide by the *Design Manual* guidelines. Additionally, the *Design Manual* is reviewed and revised on an annual basis. Inserting required predesign education planning requirements in the *Design Manual* to require district officials to implement specific predesign educational planning recommendations could be accomplished. Likewise, a percentage of financial assistance provided to districts by the OSFC for adhering to the specifications could be required of district officials to increase the extent to which they utilize predesign educational planning items.

As cited earlier, flexibility is one of the cornerstones of the *Design Manual* when it refers to design (Moore, 2001). Likewise, on the basis of the survey results, the extent that predesign educational planning is utilized by district officials has varied across the state. However, it may prove beneficial to state officials to review flexibility and choice in relation to predesign educational planning.

The lack of predesign educational planning in Ohio may result from an attempt to conserve fiscal resources. Regardless of the size or number of new schools, construction is a costly endeavor for any school district. However, if district officials were shown evidence of how effective predesign educational planning can save the district money, a greater number of them may give more attention to this vital process. Thus, state officials should consider providing staff development for district officials on the necessity of predesign educational planning and on techniques for implementing normative activities. Most notably, state officials should consider

requiring school districts to complete educational specifications with the assistance of a qualified consultant who has no vested interest in the design or construction of the facility.

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46.

## APPENDIX A

**Ohio School Facilities Commission****Summary of Appropriations and Projects**

<b>Year Funded</b>	<b>School District</b>	<b>% State Share</b>	<b>2004 ADM</b>	<b>2004 Adjusted Valuation Per Pupil</b>
2000	001	73%	1,664	74,516
2000	002	74%	2,038	76,443
2000	003	81%	646	78,944
2000	004	0%(ELPP)	1,050	95,395
2000	005	0%(ELPP)	2,180	83,575
2000	006	83%	429	64,773
2000	007	0%(ELPP)	1,776	82,155
2000	008	80%	2,208	77,409
2000	009	83%	594	69,307
2000	010	74%	1,738	76,537
2000	011	75%	1,035	75,466
2000	012	21%	1,733	135,751
2000	013	79%	2,116	73,826
2000	014	96%	819	30,128
2000	015	0%(ELPP)	3,074	82,924
2000	016	58%	1,337	86,512

<b>Year Funded</b>	<b>School District</b>	<b>% State Share</b>	<b>2004 ADM</b>	<b>2004 Adjusted Valuation Per Pupil</b>
2000	017	81%	1,023	77,081
2001	018	0%(ELPP)	1,708	81,914
2001	019	98%	1,200	28,942
2001	020	0%(ELPP)	2,193	109,086
2001	021	65%	1,372	81,832
2001	022	0%(ELPP)	1,687	99,977
2001	023	69%	1,445	75,828
2001	024	0%(ELPP)	4,534	121,695
2001	025	0%(ELPP)	2,036	108,446
2001	026	81%	10,085	61,786
2001	027	0%(ELPP)	3,120	91,427
2001	028	64%	4,292	86,728
2001	029	0%(ELPP)	5,791	127,660
2001	030	0%(ELPP)	2,285	93,218
2001	031	82%	2,861	65,915
2001	032	93%	1,274	52,016
2001	033	0%(ELPP)	1,319	105,301
2001	034	0%(ELPP)	2,157	99,218
2001	035	79%	1,416	31,531
2001	036	95%	827	26,522
2001	037	0%(ELPP)	3,961	82,048

<b>Year Funded</b>	<b>School District</b>	<b>% State Share</b>	<b>2004 ADM</b>	<b>2004 Adjusted Valuation Per Pupil</b>
2002	038	59%	30,202	82,289
2002	039	0%(ELPP)	3,954	120,858
2002	040	0%(ELPP)	4,497	79,071
2002	041	0%(ELPP)	2,160	133,047
2002	042	68%	73,352	71,268
2002	043	30%	62,521	125,732
2002	044	79%	1,509	69,829
2002	045	61%	22,718	79,307
2002	046	0%(ELPP)	1,453	91,744
2002	047	0%(ELPP)	6,232	106,340
2002	048	0%(ELPP)	1,857	127,483
2002	049	73%	1,071	83,566
2002	050	0%(ELPP)	1,760	108,682
2002	051	0%(ELPP)	1,466	112,220
2002	052	0%(ELPP)	8,109	140,901
2002	053	0%(ELPP)	3,869	118,285
2002	054	0%(ELPP)	1,060	139,857
2002	055	0%(ELPP)	1,389	83,217
2002	056	0%(ELPP)	1,494	105,311
2002	057	77%	1,068	78,019
2002	058	0%(ELPP)	1,208	118,602

<b>Year Funded</b>	<b>School District</b>	<b>% State Share</b>	<b>2004 ADM</b>	<b>2004 Adjusted Valuation Per Pupil</b>
2002	059	0%(ELPP)	6,367	97,506
2002	060	0%(ELPP)	1,974	138,644
2002	061	0%(ELPP)	2,904	147,122
2002	062	77%	37,534	70,809
2003	063	79%	1,055	69,153
2003	064	0%(ELPP)	2,482	131,211
2003	065	0%(ELPP)	2,232	79,905
2003	066	80%	804	72,637
2003	067	0%(ELPP)	1,471	106,098
2003	068	0%(ELPP)	641	96,553
2003	069	0%(ELPP)	863	128,711
2003	070	0%(ELPP)	1,032	70,244
2003	071	0%(ELPP)	1,728	79,673
2003	072	0%(ELPP)	382	87,315
2003	073	0%(ELPP)	2,174	128,063
2003	074	0%(ELPP)	2,789	81,213
2003	075	78%	1,037	74,989
2003	076	81%	472	69,935
2003	077	0%(ELPP)	2,104	81,832
2003	078	48%	1,151	107,285

<b>Year Funded</b>	<b>School District</b>	<b>% State Share</b>	<b>2004 ADM</b>	<b>2004 Adjusted Valuation Per Pupil</b>
2003	079	0%(ELPP)	1,897	149,378
2003	080	78%	799	72,593
2003	081	0%(ELPP)	7,098	132,966
2003	082	0%(ELPP)	644	104,980
2003	083	0%(ELPP)	6,498	101,025
2003	084	0%(ELPP)	3,645	220,593
2003	085	0%(ELPP)	1,069	84,192
2003	086	0%(ELPP)	2,055	109,207
2003	087	79%	951	73,423
2003	088	0%(ELPP)	2,751	133,923
2003	089	77%	3,316	72,309\
2003	090	0%(ELPP)	2,472	100,639
2003	091	0%(ELPP)	2,701	111,696
2003	092	0%(ELPP)	8,529	127,826
2004	093	89%	1,292	55,647
2004	094	76%	2,078	75,922
2004	095	0%(ELPP)	4,032	130,045
2004	096	79%	1,671	69,073
2004	097	0%(ELPP)	871	151,918
2004	098	0%(ELPP)	6,426	125,032

<b>Year Funded</b>	<b>School District</b>	<b>% State Share</b>	<b>2004 ADM</b>	<b>2004 Adjusted Valuation Per Pupil</b>
2004	099	78%	2,000	72,120
2004	100	100%	3,724	82,829
2004	101	76%	1,361	73,862
2004	102	77%	1,228	55,285
2004	103	78%	2,753	69,840
2004	104	68%	925	85,048
2004	105	80%	1,826	72,110
2004	106	77%	2,049	73,760
2004	107	0%(ELPP)	669	86,318
2004	108	66%	3,781	68,485
2004	109	90%	2,383	51,516

## APPENDIX B

## Survey Questions

The following questions refer to the components used within the predesign educational planning phase of your new school(s). Please rank the following components (between #1-4) in relation to the extent they were used in the predesign educational planning of your new school(s). Please mark an X to describe the extent to which your district utilized the following predesign educational planning components:

1. To what extent was a defined educational vision of the district considered in the predesign educational planning phase of the school ?

Not at all	Small Extent	Moderate Extent	Large Extent
1	2	3	4
_____	_____	_____	_____

2. To what extent were instructional objectives integrated into physical spaces in the predesign educational planning phase?

Not at all	Small Extent	Moderate Extent	Large Extent
1	2	3	4
_____	_____	_____	_____

3. To what extent were teachers involved in predesign educational planning?

Not at all	Small Extent	Moderate Extent	Large Extent
1	2	3	4
_____	_____	_____	_____

4. To what extent were representatives of the community involved in predesign educational planning?

Not at all	Small Extent	Moderate Extent	Large Extent
1	2	3	4
_____	_____	_____	_____

5. **To what extent were students involved in predesign educational planning?**

Not at all	Small Extent	Moderate Extent	Large Extent
1	2	3	4
_____	_____	_____	_____

6. **To what extent were educational specifications prepared prior to the design?**

Not at all	Small Extent	Moderate Extent	Large Extent
1	2	3	4
_____	_____	_____	_____

7. **To what extent was an educational planner, hired independently of the architectural firm, involved in the predesign educational planning phase?**

Not at all	Small Extent	Moderate Extent	Large Extent
1	2	3	4
_____	_____	_____	_____

8. **To what extent was predesign educational planning linked to the district's long-range academic goals?**

Not at all	Small Extent	Moderate Extent	Large Extent
1	2	3	4
_____	_____	_____	_____

## APPENDIX C

## Survey Panel

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## APPENDIX D      Survey Waiver

DEAR SUPERINTENDENT,

March 1, 2007

My name is Todd Rappold and I am a doctoral student at the University of Dayton, as well as a public school superintendent. My dissertation study focuses on school construction, primarily the predesign educational planning phase prior to design or construction. The attached survey is being used to collect data concerning the extent to which predesign educational planning was utilized by your district in the calendar years of 2000 through 2004. The survey's results will be used to complete my dissertation at the University of Dayton. The benefit of this study could be used to provide valuable information for future districts that are planning on constructing a new school.

Examples of predesign educational planning could include items such as: stakeholders who participated in the predesign educational phase, the extent to which long-range academic goals were utilized, the extent to which educational specifications were used, and the integration of instructional objectives into the design phase. The survey is being completed to collect data regarding the extent to which predesign educational planning components were utilized in the years 2000 through 2004 in the state of Ohio.

As you complete the survey you will be asked to identify the extent to which predesign educational planning was utilized in each of your school construction project(s) completed in the calendar years of 2000 through 2004 on a scale of 1-4, from "not at all" to "a large extent." The completion of this survey should only take approximately 5-10 minutes.

You are guaranteed confidentiality in this project. You have the right to decline participation. However, I would be very appreciative and would welcome your participation in completing the survey. Please be assured that your responses will remain confidential. In addition, if you would like a copy of the completed results, feel free to contact me at the conclusion of the project, which is projected to be May 1, 2007. It would be beneficial if you could return the survey within two weeks of its arrival.

If you have further questions about this study, please contact Todd Rappold at [me\\_supt@mdeca.org](mailto:me_supt@mdeca.org). Questions related to the University of Dayton's doctoral program can be directed to my dissertation advisor, Dr. Theodore Kowalski, at the University of Dayton at (937) 229-2562. If you have questions about your rights as a research participant, please contact Jon Nieberding, Chair of Human Subjects at the University of Dayton at (937) 229-2113. Thank you for your participation in this project.

Sincerely,

Todd Rappold

## APPENDIX E

## Pearson Correlations For Individual Survey Questions

*Correlations between percentages of funding and predesign educational planning.* Eight Pearson correlations were performed between percentages of state funding and predesign educational planning Survey Questions 1-8. When analyzing these correlations with the Cohen and Cohen (1983) rubric, the researcher found that the associations were small.

*Pearson Correlations Between Percentages of State Funding and Predesign Educational Survey Planning*

*Questions 1–8*

Survey question	Correlations ( <i>r</i> ) with percentages of state funding
1	.096
2	-.042
3	-.152
4	.047
5	.091
6	.217
7	-.019
8	.071

*Correlations between district enrollment and predesign educational planning.*

Eight Pearson correlations were performed between district enrollment (2004 ADM) and predesign educational Survey Questions 1-8. When analyzing these correlations with the Cohen and Cohen (1983) rubric, the researcher found that the associations were small.

*Pearson Correlations Between District Enrollment (2004 ADM) and Predesign Educational Planning*

*Survey Questions 1–8*

Survey question	Correlations ( <i>r</i> ) with district size
1	-.184
2	-.133
3	.009
4	.108
5	.176
6	.109
7	.202
8	.024

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*Correlations between district wealth and predesign educational planning.*

Eight Pearson correlations were performed between district wealth (2004 AVPP) and predesign educational Survey Questions 1-8. When analyzing the correlations with the Cohen and Cohen (1983) rubric, the researcher found that associations were small.

*Pearson Correlations Between District Wealth (2004 AVPP) and Predesign Educational Planning*

*Survey Questions 1–8*

Survey question	Correlations ( <i>r</i> ) with District wealth (2004 AVPP)
1	-.118
2	-.055
3	.070
4	-.122
5	-.071
6	-.158
7	.000
8	-.114