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NEW HIGH SCHOOL CONSTRUCTION STUDY:

An analysis of how and why some communities construct new, multi-million dollar high school buildings

By

Timothy H. Wood

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ABSTRACT

NEW HIGH SCHOOL CONSTRUCTION STUDY:

An analysis of how and why some communities construct new, multi-million dollar high school buildings.

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The purpose of this study is to describe and attempt to explain the process some Michigan communities engage in when building large, multi-million dollar high schools, and to explore the educational values the new facilities represent. Literature involving school construction was examined as well as research regarding power, values, and political decision making. The literature served as a basis for explaining the actions of those involved in the process. Specific areas of examination included identifying what was valued, what circumstances created the value, and how that value was projected to others within the community.

Four school districts in Michigan were included in the study. The research included fifty-four interviews of individuals associated with the four districts, including superintendents, principals, teachers, coaches, members of the school board, citizen committee members, and members of the community at-large. The data collected was analyzed to reach conclusions concerning the process school districts use when attempting to build a new high school.

The data indicated similar conclusions in each of the four districts as it was viewed through the lens of three theories. The first theory is the work of Anthony Downs and "utility interest" (1957), where rational people will act in their best

interest. Secondly, Schor's work on "competitive consumption" (1999), or attempting to keep-up with one's neighbors was used as a theory in the study. The third theory is derived from the work of Lukes and Stone, who developed the concept of "clinical authority" (1974 & 1988) where people in a specific field are viewed as experts based on their knowledge in a particular area. These theories served as the basis of explaining the behavior of those involved in the design, and construction of new high school buildings as delineated within the study.

The assistance, support, and persistence of my advisor made this dissertation possible. I dedicate this work to my friend Dr. Phillip Cusick.

And

I want to thank my children, Gregory and Ashley for their encouragement and unconditional love.

And

I would like to thank writer Wendy Colsen who has inspired me to think, write, and to persevere.

And

To my committee composed of Dr. David Arsen, Dr. Gary Sykes, and Dr. Douglas Campbell for their assistance with this dissertation.

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Images in this dissertation are presented in color.

Chapter One – The Proposal and Method

To arrive at the simplest truth requires years of contemplation.
Isaac Newton

Purpose

The purpose of this study is to describe and attempt to explain the process some Michigan communities engage in when building large, multi-million dollar secondary schools and to explore the educational values the new facilities represent. In 2003, taxpayers in the United States approved the funds to build $20.8 billion dollars in school construction, a figure that has steadily increased in the U.S. since 1994 (Abramson, 2003, p. 2). In Michigan, school construction has increased by 150 percent, from $499 million in 1994 to $1.25 billion in 2003 (Schneider, 2004, p. 2). The majority of the national bond dollars allocated for school building projects in 2003 was approved for new construction. Of the $20.8 billion approved, 57.4% went to designing and erecting entirely new school buildings. The balance, $5.3 billion was used to upgrade schools, while $4 billion was spent on existing buildings. In Michigan, the new building construction percentage outpaced the national percentage -- 64.6% to 57.4% -- with high schools the most costly to build (Abramson, 2003, p. 3). The median per student cost of a new construction high school in Michigan was $19,438 compared to $16,250 for a middle school student and $13,600 for an elementary student (Abramson, 2003, p. 5). My interest in Michigan's heightened expenditure is spurred by my position as a public school superintendent, which led to my interest in the process of building new schools, and further, to my interest in what

those new schools offer in terms of education.

One reason for the school building boom is the fact that educational facilities in the U.S. are in poor condition, according to a 1996 General Accounting Office (GAO) estimate. The report states that America needs to increase investments in schools by nearly $111 billion to repair or upgrade facilities to a good condition. About one-third of school districts nationwide reported needing extensive repair or replacement of one or more buildings. Sixty percent of schools reported at least one major building feature, such as plumbing, in disrepair. Moreover, about half the schools reported at least one unsatisfactory environmental condition, such as ventilation, heating, or lighting problems (Muir & Schneider, 1997, p. 1).

The study will discuss several more factors contributing to the erection of new high school buildings, including America's twentieth century population boom, which began in 1944 and continued until 1957, required the building of new schools. The new schools were built, resulting now 50 years later in old, difficult to maintain, and often inadequate structures. Another possible factor is efficiency. When Lansing, Michigan's population moved west and south, the communities in those areas decided to build new schools rather than renovate old schools. Entering into district decisions were the new regulations, such as those governing air flow, mold, bacteria, heat, light and acoustics, which are more efficiently maintained in new, rather than old, facilities.

During an interview at the American Institute of Architects meeting in October 2004, we heard an interesting statement about the new school building boom to further add to the discussion of whether to build new or renovate existing buildings. Brad Hemmes of GMB Architects and Engineers in Holland, Michigan, stated that schools are being promoted on the basis of their "amenities", that is, extras such as pools, gyms, auditoriums, technology, athletic fields, team dressing rooms, renovated classrooms, media centers, etc. According to his logic, "amenities" attract families and then attract employers wanting to locate in communities where families want to live. His theory is that the more attractive the school, the greater its ability to draw residents and, subsequently, employers. This, in turn, creates jobs and prosperity (Hemmes, 2004).

Another possible reason school districts are choosing to build large, amenity-filled high schools is the Michigan's schools of choice program – Proposal A, which allows students to attend the schools they wish. Since the passage of that act, state allocated money ($7,000) follows the students to whatever school they attend. As a result, schools are forced to compete for students. A new school can be a great recruiting tool. James Harvey, the superintendent of Mason (Michigan) Public Schools, referred to the competition for students and the subsequent building and improving of local school facilities as an "ongoing arms-race" in which neighboring districts actively compete (Harvey, 2004).

When competing for students, districts often feel the need to "keep up" with neighboring districts in the area of school buildings. Economist Juliet Schor refers to this phenomena as "competitive consumption," the idea that spending is in large part driven by a comparative or competitive process in which individuals, or in this case, school districts, try to keep up with the norms with whom they identify (Schor, 1999.) It can be argued that Schor's concept of "competitive consumption" can be expanded to a school district, attempting to "keep up" with neighboring districts. Schools compete with each other, whether on the playing field, with test scores in the media, or for students in Michigan's highly competitive schools of choice arena. There is a natural progression of this competitive process in the school buildings that represent the community.

As a result of several causes, it seems that local taxpayers are voting for funds to build larger comprehensive high schools that cost up to $100,000,000, of which, the architects estimate, sixty-five percent is spent on "amenities". It is not just spending on new schools that interests me; it is that most of the money spent is for facilities that are more for recreational, extra-curricular, and co-curricular activities than what the general public considers education. It is this possible shift in the understanding of education that the study is designed to examine.

For further background, I present in brief four examples of new schools such as a formerly rural community just outside Lansing that opened a new 352,000 square-foot high school in 2003, a school which cost the citizens of that community $67 million. The school contains an eight-lane competition-class pool, a sunken gymnasium encircled by an indoor running track that seats thousands, a weight room with $250,000 in exercise equipment, a food court, a soaring atrium, hard-wired classrooms, a professional theater, a soccer field, a football stadium, practice fields with visiting-team dressing rooms, a wrestling room, tennis courts, and acres of parking (Schneider, 2004, p. 17). The citizens of this formally rural community are the ones paying for the school, because financing school building, and other capital expenditures, in Michigan is the responsibility of community members. The citizens' vote in a public election and decide whether or not to approve the money for a new school.

The second school of study is also near Lansing (Michigan) where the voters first refused to fund an entirely new school, then approved $49,000,000 and an extra $6,000,000 for the pool -- only slightly less money that it would have cost for a new school – to renovate and re-furbish their existing high school. The refurbished building has the new pool, a professional auditorium, three music rooms, wired classrooms, a completely re-designed media center, new lockers, improved technology, and additional classrooms. Although it was built for one third fewer students, 1,200 as opposed to 1,800, it is over one-third larger, 350,000 square feet in

the newly renovated school as opposed to 200,000 square feet in the old school. A bigger space for fewer students seems to be the norm. Michigan is not for the foreseeable future scheduled to increase its student population. The city of Detroit is seeing a precipitous decline in its student population. Nonetheless, that city has just opened the completely new and quite beautiful Cass Technical High School, built for $100,000,000, and a high-tech performing arts school, Renaissance High School, for $122,500,000. Those schools have all the amenities: gymnasiums, pools, auditoriums, regulation sized tracks, varied athletic fields, vocational training centers, and parking facilities (Schneider, 2004, p. 9).

The larger question is, are the new and amenity-filled structures better at the job of educating students? This is a serious question given that there are two relevant educational conversations taking place. The conversations on the national level appear to be in conflict with events that are occurring at the local level. One national dialogue is calling for a change in the size of secondary schools to smaller, more communal high schools where students can gather a sense of personal identity and can connect with classmates and faculty. At the February 2005 National Governors' Conference, the discussions were centered around smaller high schools and changing the 3 R's from Reading, Writing, and Arithmetic to the 3 R's of Rigor, Relevance, and Relationships. Cotton (1996) explains in his work *School Size, School Climate, and Student Performance* that the new three R's can be achieved more easily in a small school setting.

Other research also indicates that bigger is not necessarily better. There is a body of research that suggests the small school will improve education by creating a smaller, more intimate learning community. Wasley et al. (2000) argues that the smaller school reduces the often harmful effect of student isolation and encourages parent participation. Small schools also report fewer disciplinary issues and fewer instances of violence. According to Vander Ark (2002), studies show that small schools have higher attendance rates and lower dropout rates, and their students have higher grade point averages. One of the reasons he stated for this difference is that in smaller schools, the conversation is not about controlling the large population of students, but rather on the education that they are getting (Vander Ark, 2002 p. 55).

Small schools also have other particular advantage. According to Lynn Olson (2003), students in small schools are "far more likely to view their teachers as responsive and caring, to feel challenged in their courses, and to report that their schools treat students fairly regardless of race or income" (p. 17). Cotton (1996) conducted an inquiry that identified ideal school size with high schools having fewer than one thousand students, and suggests that larger schools are "impersonal to students" (Cotton, 1996). Yet, independent of the controversy about small vs. large, many communities seem to have decided to build large schools instead of just building updated versions of older buildings. According to Hemmes (2004), part of the reason for the creation of the large schools is that the amenities school districts

desire are too expensive to put into many smaller high schools and, in effect, the desire for the amenities is driving the construction of larger schools (Hemmes, 2004).

The other main debate throughout the country is about differences in achievement between graduates of American secondary schools versus graduates of schools in Asian countries. According to the Trends in International Mathematics and Science Study (TIMSS), in 2003 U.S. eighth-graders did improve their scores in both mathematics and science in 2003 compared to the results from 1995. The International Association for the Evaluation of Educational Achievement (IEA), who performed the study, still found that in both math and science the U.S. eighth-graders were behind the students from five Asian countries: Chinese Taipei, Hong Kong SAR, Japan, Korea, and Singapore (TIMSS, 2003). The U.S. eighth-graders were in the middle of the pack in both math and science ranking 15th in math and 9th out of the forty five countries studied (TIMSS, 2003). As the world's leading economic superpower, these mediocre results have left many in the U.S. talking about the future of the United States in the global economy as well as the future of scientists and engineers in the job market.

With students in many Asian countries outperforming those in the U.S., many educators and policymakers in this country are looking at the school systems in Asian countries as a model for their own system. Cummings and Altbach (1997) looked at Singapore's education system and concluded that the United States' policymakers

should consider "returning the school to its primary role as an agency of instruction" instead of using it as an "instrument of social programs" (p. 264). They found that in Singapore the students were there for no other reason than to learn. Those researchers suggest that schools return to their primary role of helping students learn in order to improve their math and science scores and subsequently compete with Asian countries. Our national leaders too are calling for more rigor and relevance in the classroom, so the dichotomy between the national agenda and the local communities may be increasing. Some local school districts are not placing their resources in buildings and programs that could enhance our ability to compete in math and science, but rather into large amenity filled high schools.

This study will explore, among other matters, why the dialogue is so drastically different at the local level from the policy makers' initiatives at the national level. This research will also attempt to find out why local communities may be making the decision to spend their own money to build the large, multi-million dollar, amenity-filled secondary schools. Finally, an attempt will be made to describe the educational values that supporters of the new facilities envision in the school. The research will be aided by financial data which connects decisions made to dollars spent and reveals the relative financial value of different segments of the new school. Upon assessing the process by which the new facilities come into existence and interviewing the people involved, the data may reveal that these multi-million dollar facilities represent emerging definitions of school, the place of school in the

community, and the educational values embodied in the new school.

Conceptual Framework

As previously stated, the study contains two units of analysis. The first is to describe and attempt to explain the process that communities go through when constructing new secondary schools and, secondly, to explore the values concerning education that are associated with that process. A new building requires a series of decisions, many of them economic, so my focus turns to a writer who has given some thought to the way Americans make economic decisions. For theoretical guidance, I rely on Anthony Downs' *Economic Theory of Democracy* (1957). Looking at a school district as a form of democratic government and working from Downs' theory, the following propositions will guide the study: (1) Democratic governments act rationally to maximize political support; (2) The government is a means by which individuals can satisfy some of their wants collectively; (3) The government can maximize political support by allowing a large number of individuals to satisfy their wants. From this first set of three propositions, it is inferred that the school district demonstrates its legitimacy by encouraging the citizenry to satisfy its wants, and, more to the point of my study, it is suggested that a school board's decision to ask voter approval for a new school is an attempt to satisfy the wants of its citizenry.

The study will also examine the groups of citizens who see a new school as an

opportunity to satisfy their own wants. This is guided by Proposition 4 which states, "Rational behavior is directed primarily toward selfish ends" (Downs, 1957, p. 27). "Selfish" has an unpleasant connotation, but Downs is merely pointing out that people act rationally when they act in ways that satisfy their own needs. Furthermore, they are likely to support government actions, such as the building of a new school, if they see elements in the new school that they see as satisfying their own needs. If they join their efforts with others who have similar goals and press to see that the desired element is included, they constitute a "coalition" which Downs defines as "a group of individuals who have certain ends in common and cooperate with each other in order to achieve them" (Downs, 1957, p. 24).

The function of Downs' coalition is to attempt to influence the government entity, which he defines as a group with an "elected board and taxing power" (Downs, 1957, p. 34). For the purpose of the study, a school district's board of education meets Downs' standard of a governmental entity. The act of building a new school is a government action, and the researcher will use Downs' argument that the citizens are likely to support the action if they see it in terms of their own personal interests. This concept will be used to sustain the theory. Therefore, in the process of building a school, some will join others in coalitions that will attempt to influence the building in ways that satisfy their own needs. Or, in the economic terms that Downs' uses, those coalitions will be attempting to obtain "utility income" from the generalized effort to create a new school (Downs, 1957, p.37). The sum of Downs' four

propositions enables us to initiate this exploratory study of the processes by which some school districts build new schools.

To support the assertion that Downs' notion of "utility value" assumes a greater role in the political process, this inquiry will use the concept of "clinical authority" (Lukes, 1974; Stone, 1988, p. 46) as a factor in political decision making. Clinical authority is a method of thinking derived from medicine. In the practice of medicine, doctors generally have greater knowledge and, subsequently, greater influence over the people they serve. The same concept applies in the political arena when politicians or, in this study, boards of education and school decision makers, acting in their best interest, will attempt to use their knowledge and influence to persuade their constituents. As stated earlier, Downs' theory of utility presupposes that politicians and decision makers will make decisions in their best interest. Downs continues, "given several mutually exclusive alternatives, a rational man always takes the one which yields him the highest utility, 'ceteris paribus'; for example, he acts to his own greatest benefit" (Downs, 1957, pp. 36, 37). When politicians or, in this case, school decision makers are viewed by the voting public as political experts or possessing "clinical authority" (Lukes, 1974; Stone, 1988, p. 46) on educational matters, the voting community will consider their recommendations to be sound educational practice due to their perceived expertise in the area of education.

As a result of school officials' perceived expertise in education, they have a political advantage or power over the voting public. To expand this concept the work of political scientist Steven Lukes (1974) is employed, who defines power as the ability to influence the outcome of a specific decision and the ability to influence the agenda from which decisions are made. He goes on to write about a dimension of power, which he defines as the ability to influence consciousness or to shape people's wants and tastes, frame issues, and define standards of proof (Lukes, 1974). Influencing consciousness, Lukes states, is derived from a form of power granted by citizens when they view a decision maker as having knowledge and influence. Lukes refers to this specific dimension of power as "clinical authority," which school officials are granted by the community as a result of their perceived expertise (Lukes, 1974; Stone, 1988).

To explore the second unit of analysis, the educational values that are embodied in the new school, our research will be directed by John Rohr (1978) who defines values as "beliefs, passions, and principles that are held by the overwhelming majority" (p. 65). In his book, *Ethics for Bureaucrats: an Essay on Law and Values*, Rohr defines another type of value as the "beliefs, passions, and principles held fervently by a political regime." For the purpose of this study, the political entity present in our inquiry is the board of education within a community. Rohr (1978) suggests that regime values are the beliefs, passions, and principles of a particular political unit, and they are derived from the salient values of the regime (p. 59). The

new high school building represents a way of thinking about what is educationally important to the political unit or the board of education, as the citizens are encouraged to place their dollars into the type of structure being offered by the political unit. If the board of education and its administrative team hold closely the belief that a new school should include the amenities present in a neighboring district, for example, or the amenities prescribed by the architects, then the predominant educational dollar within their community will most probably be spent on non-academic facilities or the "amenities" within the school building.

The new high schools and the amenities within the new structure are developed by architects, engineers, and designers, in partnership with school administrators and school board members. As larger, amenity-filled high schools are being constructed new norms for secondary buildings are being established. These new norms or components of the newly constructed high schools are being established by the design industry in compliance with school officials, both of whom have "utility" (Downs, 1957) interests in the school construction process. The voting public views school officials and school designers as the experts and, subsequently, grant them the "clinical authority" (Lukes, 1974: Stone, 1988, p. 46) to provide the information they want the community to have about the current best practices for a building project.

In summary, the conceptual framework of this study will focus on five principles, which include Downs' argument that members of a community are likely

to support the action and form coalitions to support the action, which in this study is the bond proposal, to build a new school if they see it in terms of their own personal interests. Secondly, the architects, engineers, and school officials have the ability to influence the community because the community grants them "clinical authority" based on a perceived expertise, according to Stone (1988, p. 59). Thirdly, Schor (1999) reminds us, "competitive consumption" or "keeping-up" with our neighbors is an occurrence as design engineers and architects continually add to and improve the components of a new high school building creating new norms for schools. The fourth tenet has to do with the educational values that are embodied in the new school and are developed by a norm creation process. For this principle the work of John Rohr (1978) will be used, who defines values as "beliefs, passions, and principles that are held by the overwhelming majority" (p. 65). The final principle directly correlates with Lukes' (1974) dimension of power, which allows school officials to "define core ideas, shape peoples' wants and tastes." This study hopes to describe the process a community experiences during the construction of a new high school in the context of these five assumptions.

Method

In order to study the process in which some Michigan school communities engage when building multi-million dollar secondary schools and to find out the

educational value the new facility represents, I performed open-ended interviews. I chose specific communities because they have all recently built a new high school building. The population of my study included the people on the building committee; those who contributed to or were involved in the construction project of building the new high school in each district. Assuming that a number of people were influential in the building process, citizens involved in different stages in the course of deciding what will be part of the school were interviewed in order to find a more accurate representation of the actual process.

First, permission was asked of the school superintendent to study his or her district. I then asked him or her for a list of names of all people on the building committee who decided what would go into the new facility. Making the assumption that the people on this committee were the most influential in deciding what the building would be like and how much money it will cost, therefore, by interviewing them, it could be determined how and why the school was built. Before actually conducting the interviews, I was unsure if this would be a sufficient sample to collect all of our data, so after conducting several interviews, I may find other people who were also influential in the construction process. The preliminary agenda will include people on the building committee roster as our sample, and this will be expanded if deemed necessary during the interview process.

Using the roster of the people who played a role in the building process as the

sampling frame, the population was then divided into three categories, the first group I call users. These are the people who use the building once it is completed: the teachers, support staff, principals, and the superintendents. The second group is the designers: these people are directly involved with the design and construction of the building. Subjects that fall into this category include the construction manager, engineers, and architects. The final category includes other people who have interests in the outcome of the building but not use it on a daily basis nor are they directly involved in the construction. This category includes the board of education and taxpaying community members.

Working with the three aforementioned categories, there were four to eight people that fit into each group depending on the size of the building committee in each district. This left approximately twelve to fifteen people in each district to interview. I decided to stratify the sample in order to control for differing viewpoints based on personal interest. For example, a band teacher who is in the user category might have different ideas about an ideal auditorium than the architect who is in the designer category. By keeping these samples separate, it can be determined who was more influential in the building process in the end and whose interests were not taken into account.

Once the various groups were identified, I called or wrote each individual and explained the research project. I asked for permission to interview that subject and

explained that all of the information he or she gives us will remain confidential. At this point, the four theories that are the basis for the research were not discussed to avoid leading the respondent to answer a certain way. The interviews were open-ended, where the respondent had ample opportunity to explain his or her answers. Since I was unsure of exactly what each person would focus on in the interview, I did not want to give him or her choices, but rather let the subjects answer the questions themselves. Questions were formulated as to how school boards and decision makers within a school district go about building a new high school.

Four sets of questions will be posed. The first asks about the district and the background and about the process used to develop the idea for the building project. The second asks about the process of building the school and how support for the building project was gained. The third set of questions is concerned with how the building was put together and what was in it and the specific costs of the project. The fourth asks about the educational values and the vision of education that underlay the building process and how those costs are driven by what is valued within the community.

Interview Protocol:
Questions for administrators, teachers, board members and involved citizens

The first set of questions asks about the process in the initial decision to pursue a bond proposal, as follows: (1) How was the decision to build a new school

approached? (2) What were the circumstances considered? (3) What alternatives to new construction were offered? (4) When were the alternatives offered? (5) What elements swayed the decision to build a new school? The specific questions in the first set are as follows:

First, let me ask about the district and the background.

1. What were the considerations?
    a. Were their strong community feelings for or against a new school?
    b. How much millage are the schools now levying?
    c. What is current capital debt?
    d. What considerations tipped the decision toward asking the community to approve a new school?
2. Talk about the decision to move toward a new secondary school. More specifically, what are the major considerations?
    a. Condition of existing facility?
    b. Cost of renovation?
    c. Competition for students under "school choice"?
    d. Emerging ideas about education?
    e. Population pressures?
    f. Student academic performance?
    g. Advocacy groups- for or against in the community?
3. You decided to explore a new school. Let's talk about the next steps. Bond people, architects, and building managers all have ideas about new secondary schools.
    a. What were the ideas that were seriously considered? Who advocated for these ideas?
    b. What were some of the points made?
    c. Who was in on the discussions?
    d. Please describe the discussions. Who was listened to?
    e. You decided to put in for instance, a swimming pool.
    f. Who advocated for a swimming pool?
    g. What was the argument for this inclusion?

The second set of questions is about coalitions and groups that formed to influence the construction. For instance, those with athletic interests push for a particular type of facility, such as a competition pool or weight room. Or, teachers

may lobby for room size, laboratories, and technology. In addition, there are architects, construction foremen, and contractors adhering to state guidelines also considered in the building process. The following questions will be posed: (1) What groups worked to influence the final product? (2) What were their particular interests? (3) In what ways were the decisions made to create a new building? The specific questions about coalition building and voting influence are as follows:

Second, let me ask about the process of building the school.

4. You decided to build a new school; you had some ideas about the design, some ideas about the cost, and you went for approval to the State.
    a. What part did the State play?
    b. Was the State helpful?
5. It's time to go to the voters for approval of the bond issue. (Note: In many districts, the community vote is called before the final plans are drawn up.)
    a. How did you calculate the amount to ask for?
    b. What role did the bond salespeople play in the campaign?
    c. How did you "sell" the school to the voters?
    d. What were your central points?
    e. What groups did you mobilize?
    f. Who helped the most?
    g. What groups joined together to pass the bond?
    h. What groups did you try to neutralize?
    i. Have previous bond issues passed?
    j. Been defeated? Why?

The third set of questions asked how the building was developed and what components were added to the building, and by whom. These questions determine which group was interested in a particular component of the building and how influential was the group. We asked the questions: (1) How influential was the architectural firm? (2) Which components did the booster groups advocate for? (3) Did the teachers have a voice in the design process of building the new building? The specific questions for section three are as follows:

Third, can we now talk about how the building was put together and what was in it?

6. You have some general plans, voter approval, the architect is in place, (perhaps) a construction firm and building manager have been hired; now you can build.
    a. What did the architect have in mind?
    b. The building manager?
    c. What did the teachers want?
    d. The administrators?
    e. The music and athletic groups?
    f. What other individuals and groups were involved in making the decisions about what would and would not be in the school?
    g. How did individuals and groups make their wishes known?
    h. How did the discussions go?
    i. Briefly describe the financial dealings and the handling of the money.

The fourth set of questions has to do with the notions of educational values being embodied in the new school which ultimately drive the cost of new construction projects. The ideas here emanate from Gunnar Myrdal (1978), who suggested that, an organization, in this case a school embodies certain values and those values manifest themselves in the physical structure, suggesting that the organization and the physical structure are not "value-neutral" entities. The hypothesis that the entities represent what the place stands for and the added components of the building suggest ways to think about and behave within that building. "Values are always with us," argued Gunnar Myrdal (1978, p. 771). "There can be no view except from a viewpoint and in the viewpoint chosen, values are implied" (1978). In order to further this assumption, the following questions will be posed during the interviews: (1) What does the physical structure say about education? (2) What form did it take? (3) What values did the decision makers have in mind when formulating the building's ultimate purpose? The specific questions for

section four are as follows:

Fourth, let me ask about the educational values and the vision of education that underlay the building process.

7. Reflecting on the discussions that surrounded the building, how did the participants describe their view of the education?
    a. Let me assume that there was always the notion that whatever someone wanted in the school, he or she argued that it would be "good for kids." Now what was the "good" that the students were to obtain form particular aspects of the new school.
    b. How did their views of education match with what they wanted in the school?
    c. How did they argue for what they wanted relative to their educational values?

After sufficient information from the respondents has been gathered, I debriefed them and allow them to ask any questions they may have. We explained our hypothesis and the theories we have based it on. Ethical issues that we took into account are that the teachers or other staff members may feel uncomfortable answering questions about their preferences if they feel as though someone from their workplace may see their answers. They may also attempt to give answers that they believe we want to hear. To control for this, I emphasized that the interview results are kept confidential and there will be no mention of the theories before the interview takes place. We also informed participants that they can feel free to skip any questions that they feel uncomfortable answering. All participants will also be asked to give consent before the interview so that they know that it will not affect their job if they do not answer the questions. It was important for the participants to know that the researcher is completely separate from their workplace and the results will not be shown to anyone at their work as the information is for research purposes only.

A weakness of the open interview method is that there is no way to standardize all of the answers or cleanly put the answers into categories. I planed to use this method because without preliminary interview data, we would be unable to perform close ended interviews or surveys which give the respondents choices that can be quantified. Using the notes from the subjects' answers, I looked for patterns in the results to see which theory they are most closely aligned.

In addition to interviewing people about the design and construction process I also reviewed the building plans of each district to determine how the bonded funds were allocated. Using the U.S. dollar as our measure, I investigated how much consideration is given to the student academic components of the new building and how much is dedicated to the non-academic "amenities" of the school. The belief in the United States is that the dollar is considered the universally accepted means of determining value. It can be argued that the facilities in which a community decides to place its monetary resources will develop into the significant programs that the school district views as important. I assessed the value a community places on the non-academic "amenities" connected to school construction and attempted to determine if the community places greater value on the "amenities" connected to a school building or whether it values the more traditional school components associated with student learning. After reviewing the building plans, I was able to see if there is a correlation between a school district's allocation of dollars to academic

and non-academic facilities.

The Interview Process

As stated above, interviews were conducted with administrators, teachers, coaches, members of school boards, citizen committee members, and support staff personnel. Each person was interviewed individually as there were no group interview sessions. The length of the interview varied from over 90 minutes to as few as thirty minutes. Some interviews were tape recorded; however the majority of the sessions involved note taking. Many of the interviews were conducted on the site of the new high school building, and the site visit generally included a tour of the building or a tour of a particular component of the facility, while some interviews were conducted over the telephone.

The interviews were about the school building that was recently erected, and the process used to pass the bond proposal and eventually build the new high school. I was interested in how the building project was accomplished from several interviewees' perspective. The data is a series of verbal accounts of what happened during the design and construction process. The advantage of this study is that there is a new school in each of the districts and there is no dispute that it exists. I investigated the perspective of how the building came to fruition by examining the interviewees' perspective of what really happened.

As mentioned, prior to selecting a school district to conduct the study, I spoke with the district superintendent and explained the nature of the research. I also reviewed the type of interview questions I would be asking community members and the employees of the district. Each superintendent was most supportive of the process as outlined. The next step was to ask the superintendent for a list of names of people involved in the planning and construction process. This step was handled differently in each district as I generally worked with an assistant at some level within the central offices. Letters were sent to perspective interviewees with the endorsement of the district superintendent. Listed below is a sample letter to a school board member requesting an interview:

Mr. School Board Member
123 Meadows Drive
Anytown, Michigan 48424

Dear Mr. School Board Member,

Re: District C, High School Building Project

Your superintendent suggested you as a person to whom I could discuss a study we are conducting in conjunction with Michigan State University. We are studying the process school districts in Michigan go through when building a new high school. We have found that the construction of new secondary schools are not only larger than the schools they are replacing, they contain much more in the way of music, art, technology, recreational, and athletic facilities. Our thinking, "perhaps we are not just replacing old buildings; perhaps we're creating different kinds of schools for different kinds of education." And to pursue this idea, I am talking to people involved in the creation of some of Michigan's new high schools.

District C is a good example of a much-admired new school, and your superintendent has allowed me to ask some of the people involved in its creation for thirty minutes of their time. I would ask you about the process of

creating the school, your role in that process, and the thinking that went into the process. I need only a half-hour; we can meet at the location of your choice and at your convenience. All questions and comments are confidential, and the topic is limited to the creation of District C's new secondary school.

I hope you can do this. All the educators to whom I've talked think this is an interesting topic, and something that Michigan's educational community might like to know more about. So, may I ask you to e-mail or call, and we can set up a time? Thank you so much and...

Best wishes,

Timothy H. Wood
Superintendent
C-616-218-6326
twood@saugatuckps.com

Prior to conducting an interview within a school building, contact was made with the building administrator in an attempt to adhere to the building protocol for visitors who wish to enter the school. Once in the building, I informed each respondent about the nature and purpose of the study, and informed them that anonymity was guaranteed to the extent possible and that the names of all respondents and their schools would be kept anonymous.

The questions used during the interviews are listed above in this section. Due to the qualitative nature of this study, the interview protocol was not strictly adhered to as other topics would be explored as they arose. The interview questions were refined and expanded throughout the interview process. Observations while on site also generated questions for the interviewees.

As stated earlier, each school district was assigned a pseudonym to protect the identity of those interviewed. In the presentation of the data, school districts were referred to District A, B, C, or D, as we conducted the study in four school districts. With each interview, I asked the participant their involvement in the design and or construction process and moved forward into the questions listed above.

Interview Summary

This research project relied on interviews as the primary method of data collection. Other data was derived from observation and examination of district and architectural firm artifacts. Face-to-face interviews and telephone interviews were conducted with district administrators, teachers, coaches, booster club members, members of the board of education, and community members involved in the process and were 30 to 90 minutes in length. The interview protocol was expanded and refined as participants' responses shaped the focus of the study.

Significance

School districts are spending $50 to $100 million of the community's money on new schools, but it is not to accommodate more students. In fact, in many communities there are fewer students, but vastly larger facilities. This researcher questioned if the new buildings represent a different way to think about education and, if so, if it appears to be inconsistent with the reform movement currently occurring at the national level.

As stated above, the purpose of the study is to describe and attempt to explain the process that communities and school officials go through when constructing new secondary schools and the larger issue of defining the type of education that emerges through the process will also be examined. When describing the process that communities go through to construct a facility, I will inquire as to how school boards operate a political campaign as well as investigate how school officials attempt to maximize political support in order to satisfy their wants collectively. Also, I asked how those decision makers can add to their political support by allowing a larger number of individuals to satisfy their wants.

In closing, I will attempt to determine exactly what the taxpayers are thinking about when they approve the construction of a multi-million dollar school, along with how much consideration is given to symbolism connected to the concept of civic pride and "keeping-up" or to the special interest coalitions that develop within the community. We will also look into how influential the school designers are within the community. During this inquiry, the amount of importance given to the academic component of school planning was examined, as well as how much is dedicated to the amenities in the construction project.

Chapter Two – Literature Review

Be careful what you give children, for sooner or later you are sure to get it back.
Barbara Kingsolver

"Keeping up with the Joneses" (Duesenberry, 1949, p. 2) is a phrase popularized by James Duesenberry, a Harvard economist who published the phrase in his work *Income, Saving, and the Theory of Consumer Behavior* in 1949. Duesenberry described neighbors attempting to match neighbors in the purchase of cars, homes, consumer goods, and the like in an attempt to maintain the appearance of a similar social status.

Juliet Schor, a Boston College economist, verifies Duesenberry's assertions in her 1999 publication, *The New Politics of Consumption,* when she writes, "Social comparison and its dynamic manifestation of the need to keep up has long been part of American culture" (Schor, 1999, p. 4). Schor's term for "keeping up" is "competitive consumption," the idea that spending is in large part driven by a comparative or competitive process in which individuals try to keep up with the norms of the social group with whom they identify. She refers to these rivals as "reference group" (Schor, 1999.) It can be argued that Schor's concept of "competitive consumption" can be expanded to a community or a school district, which can also have a "reference group" with whom they identify and attempt to "keep up" with from a social status perspective. Schools compete with each other, whether on the playing field, test scores in the media, or for students in Michigan's

highly competitive Schools of choice arena. There is a natural progression of this competitive process in the school buildings that represent the community in a symbolic gesture of "keeping up" with their neighboring districts.

"Competitive consumption," according to Schor is driven by a comparative process in which those involved try to keep up with the changing norms of their identified social group. Schools spend $50 million to $100 million on a new school in an attempt to "keep up" with the districts they compete with for students and the dollars that follow the children when they abandon their home district and choose to move to a different school. The scenario of "keeping up" may account for a school district's need to build a new competitive school to attract students. This process is so intense that it has been defined by some Michigan superintendents as an "arms race" to build trophy high school buildings simply to compete for students.

In the political sense, the term "arms-race" is defined as a nation's attempt to maintain a contemporary military force capable of competing with rival nations. To do so, a nation must spend the money necessary to maintain an edge in weaponry to preserve a strategic advantage over its adversary. The school building arms-race is similar as individual school districts invest millions of dollars in a contemporary high school building in an attempt to compete with rival districts. By competing, districts are building schools that will hopefully preserve the student population currently within their district, and attempting to entice students from neighboring school districts to attend their school.

This competitive arena has an inflationary effect as subsequent districts design new school buildings with additional amenities to attract and retain students in an attempt to "Keep up with the Joneses" since the district that does not build a new trophy high school risks losing students to neighboring high schools with new extra-curricular and co-curricular facilities. In Michigan's schools of choice program a student's state funding follows the student to the new school, creating operational budget issues for the district students are leaving. This scenario is especially true of inner-city districts that do not have the high property values to fund a capital building project and are subject to students departing to suburban schools with the property values to adequately fund building projects.

In Michigan, the dollars to build school buildings are the responsibility of the local district based on property tax values, and according to David Arsen (2005) there is a substantial gap in the taxable values between Michigan's poorest districts and the wealthiest districts. Michigan's twenty-nine wealthiest school districts have ten times the per-pupil value of taxable property of the state's six poorest districts (Arsen et al, 2005). As a result, urban districts have a more difficult time entering the school building arms-race and competing for students. Consequently, the state's inner-city districts are losing students and the operational funding that accompany them to surrounding suburban school districts.

Schools of choice

The modern debate over school choice, which is the ability of parents to choose for their children the safest and best schools, first emerged as a public policy issue in the United States in the 1950's. It has taken over 40 years for school choice to become a nationwide movement strong enough to attract the attention of policy makers at all levels of government.

In 1996, the State of Michigan made it easier for parents to choose their child's school from among those in their own and neighboring public school districts. Previously, parents wanting to send their children to schools other than their assigned district school were required to pay tuition to the school district of the desired school unless they obtained permission for the transfer from their assigned school district.

For participating districts, the law now allows students to transfer between public schools in the same local district, to public schools in the same intermediate school district, or to public schools in contiguous intermediate districts without paying tuition, provided the desired district has space.

Under the schools of choice program, parents can send their children to a public school outside of their home district, provided the district of choice accepts transfers. In 1996, the first year of the program, nearly 6,200 students switched to a public school different from the one assigned to them by their home district. In 1997,

another 10,750 students changed schools. The numbers have been steadily increasing more than ten fold, and today, there are 63,348 schools of choice students in Michigan, totaling more that $443,436,000 in loss revenue to local school districts (Brandt, 2006).

For some districts, the effect of students coming and going is negligible. For others, the gain or loss of students can mean millions of dollars in state funding as the state's per pupil finding follows each student to the new district. School districts need to be concerned not only about school of choice students departing for schools with more current facilities, but also with students departing to enroll in charter schools in Michigan. In 2006, there are 216 charter schools operating in Michigan serving 82,000 students, nearly 20,000 more students than in Michigan's Schools of choice program, which amounts to a loss of $574,000.000 to local districts. "Student retention and recruitment is the new game being played in schools," stated a superintendent with a charter school operating within his district "and facilities appear to be the current method of combating the loss of revenue a district suffers when mass numbers of student exit" (Brandt, 2006, p 1).

School choice and the competition for students put pressure on school districts to improve their academic performance. Choice programs provide alternative school options, without the expense of tuition, for parents who choose to act in the best interest of their child. Traditional public schools now must compete to retain the students they currently have and to potentially attract new students from other

districts. In a more competitive environment, schools of all types will have strong incentives to improve their facilities as well as their academic program.

Michigan's school of choice program falls into one of four subcategories: intra-district, which is when a transfer takes place within an ISD Districts, inter-district, which occurs between contiguous ISD districts, non-K-12 districts is when pupils residing in a district that does not operate all of the K-12 grades, and students who choose to attend a charter schools.

In an **intra-district** school choice plan, school assignment is not restricted to one particular school within the school district's geographic boundary, or intermediate school district boundary, in which a child resides. Instead, families may choose from among more than one school within the intermediate district. This gives parents the opportunity to choose the public school that best serves their child's needs. In the intra-district program parents must apply each year and are responsible for their own transportation. The state aid payment is based on the resident or the sending district's foundation allowance and not the receiving district. The parent does not pay tuition.

In an **inter-district** school choice plan, the district must decide if it will accept pupils from ISD districts that are contiguous. The receiving district must notify the parents or legal guardians of enrollment eligibility as well as notifying parents of enrollment dates and procedures. The receiving district may refuse to enroll a student due to suspension or expulsion from another district, and they may also refuse to

enroll special education pupils, unless there is a written cooperative agreement with the special education pupil's resident district to the payment of added costs. The receiving district may not refuse enrollment due to intellectual, physical, or any violation of state and federal law prohibiting discrimination. In the inter-district program parents are not required to re-apply each year, and enrollment is guaranteed in subsequent years through graduation, unless the student is expelled or suspended; however, parents are responsible for student transportation.

Pupils residing in a district that does not operate all K-12 grades, which are referred to as **Non-K-12** Districts, may enroll in a district, other than their district of residence, in a grade that is not offered by the resident's district. These students may be counted in the incoming district's membership and tuition is not charged. The district of choice receives its "resident" foundation allowance for Non-K-12 pupils.

The fourth choice program includes sending children to a public **Charter School**. The Charter School receives a per pupil foundation for each student enrolled. The resident school district, where the family resides, would not receive funding for residents that choose to enroll in charter schools. Charter schools receive the per pupil foundation allowance of the district where the school is located. Transportation may or may not be provided.

As previously mentioned, participation in schools of choice programs can be the difference in millions of dollars in revenue to maintain programming for all

students. Proponents of Michigan's schools of choice program believe the program is fiscally responsible for two reasons. First, they believe that competition creates incentives, which in turn gives rise to reform and school improvement. Second, participation in the schools of choice program is fiscally responsible because it financially rewards successful school districts. Each school of choice student brings with her or him approximately $7,000 in state per–pupil funding that supports K-12 programs for all residents and non-residents alike.

Public school choice options are a reality across Michigan and districts face this reality and the consumer demand it enjoins. Advocates of the choice program endorse the environment that they believe provides an incentive for change and the impetus for schools to improve. A component of the school of choice program and the ability of districts to attract students has to do with a school's facility. A school building can attract students to a district as a new amenity filled building is a lure for students and parents alike.

This phenomenon is occurring in Michigan as well as nationally, and the nation's governors are addressing the issue by calling for the redesigning of America's high schools to make the inner-city districts more competitive in the schools of choice arena.

Redesigning the American High School
National Governors Association, Washington DC, February 28, 2005

Bill Gates of Microsoft, Inc. in a speech to the nation's governors at the National Governors' Association Conference on February 26, 2005, used very strong language to describe the current conditions of America's high schools. "When we looked at the millions of students that our high schools are not preparing for higher education, and we looked at the damaging impact that has on their lives - we came to a painful conclusion: America's high schools are obsolete" (Gates, 2005). Gates explained that the high schools in the United States are obsolete because they are broken, flawed, under-funded, and in need of overhauling. He went on to say that even if high schools were working exactly as designed "they cannot teach our kids what they need to know today" (Gates, 2005).

In his presentation to the governors Gates declared that high schools were designed fifty years ago to meet the needs of the industrial age, and that we are clearly in the informational transmission age. He told the governors that we need to design them to meet the needs of the 21st century, and if we do not "we will keep limiting - even ruining the lives of millions of Americans every year" (Gates, 2005).

Gates presented statistical data stating that currently only one-third of our students graduate from high school ready for college, and the other two-thirds, most of them low-income and minority students, are tracked into courses that will not ever get them ready for college or prepare them for a family-wage job. "This isn't an accident or a flaw in the system; it is the system" (Gates, 2005). Of those students

not prepared to earn a living wage, one in four turn to welfare, and according to Gates, high schools in the U.S. continue to allow these students to fall through the cracks and do noting to help.

Gates believes that something can be done: "We designed these high schools; we can redesign them" (Gates, 2005). Does Gates offer a plan to redesign high schools? He begins with the premise that the old design called for training an adequate workforce by sending only a third of the kids to college; the other students could find menial jobs within the industrial economy. His new design for high schools, labeled the New Three R's of education, including Rigor, Relevance, and Relationship. The first R is imbedded in the thinking that all students can do rigorous work, as he would like to see schools provide a challenging curriculum for all students and prepare all students to go to college.

The second R in the Gates plan is relevance. He would like to see course-work redesigned to relate to students interests and to real-world experiences, making sure courses, projects, and assignments align with their lives and goals. His third R is relationships, which directly relates to the small school research where smaller schools can make sure kids have a number of adults who know them, look out for them, and push them to achieve. He acknowledges that relationships are easier to promote in smaller high schools. "The smaller size gives teachers and staff the chance to create am environment where students achieve at a higher level and rarely fall through the cracks. Students in smaller schools are more motivated, have higher

attendance rates, feel safer, and graduate and attend college in higher numbers" (Gates, 2005).

He admits that these types of changes may be difficult and prescribes the first step to be a declaration by all schools that all students can learn and can graduate from high school ready for college. If schools continue to fail, then he believes that states need a strong intervention authority to take over and improve struggling schools. He would like to see the states give the power and resources to teams of experts who can improve failing schools.

Following Gates' address, the nation's governors present at the National Governors Conference discussed ways to improve the quality of high school education in the United States. Michigan Governor Jennifer Granholm was in attendance and signed a reform package outlined by the governors' association. They have collectively identified ten steps governors can take to redesign high schools in their states. Their hope is that these steps will lead to system-wide reform, so that their initiative of "Redesigning the American High School" becomes a national reality. The governor's ten recommendations seem to provide some students greater access to certain programs that are currently not an option for many who attend our nation's public high schools.

The governors' initial recommendation is to create a permanent Education

Roundtable or Commission to coordinate early childhood, K-12, and higher education. They would like the education roundtable, or commission, to have clearly defined responsibilities and participation from an equal number of business/civic leaders and educators with the governor serving as the chair.

Secondly, the governors would like to define a rigorous college and work preparatory curriculum for high school graduation. The State of Michigan passed a more rigorous mandatory high school curriculum in April of 2006 effective for the graduating class of 2011. The governor's definition of a "rigorous high school curriculum involves making improvements in high school achievement, which would reduce college remediation courses and encourages college completion" (Warner, 2005). The governors would like to reward high schools that voluntarily change their curriculum and adopt it as a graduation requirement with of the "Governor's Merit High School" recognition program. They also would like to encourage foundations and corporations to sponsor the recognitions and rewards programs.

Their third initiative is to ask business, education, parents, communities, and faith-based organizations to support initiatives that improve college awareness. They assert in their literature that fewer than half of economically disadvantaged students receive college aid information. They would like statewide initiatives to share information on college preparation and provide assistance on college entrance and financial aid applications.

The governors' fourth initiative states that a high percentage of high school graduates enter college in need of remediation, which they claim requires states to expend additional resources on remedial courses instead of college-level coursework. Their proposal is to require all students to take a college readiness test in high school, which would help identify what courses and additional support students need in their senior year to graduate ready for further education.

In the fifth proposal, governors would like to see consistency within statewide common high school courses that are accepted as college-level work in the state's postsecondary institutions. They are attempting to correct the issue of students taking college courses in high school, which many students do to save money on college tuition. The governors are advocating for common course agreements that stipulate which core college-level courses taken during high school are accepted at any university so that all credits count towards a degree.

In the governors' sixth premise, they would like to provide financial incentives for disadvantaged students to take Advanced Placement (AP) exams and college preparatory and college-level courses. Their plan is for states to make an early (7^{th} grade) financial aid commitment to students who agree to take the college prep curriculum.

The seventh initiative expands college-level learning opportunities in high school for minorities, English language learners, low-income students and youth with disabilities as these students are less likely to take Advanced Placement courses or enroll in college courses while still in high school.

In an attempt to help low-performing students get back on track academically, the governors suggest designing literacy and math recovery programs in high schools. They believe their eighth initiative will provide learning opportunities for low-performing students to help them move into a college prep curriculum.

According to the Governors' Report, twenty states have mandatory exit exams for high school graduation, and five more are scheduled to withhold diplomas from failing students. Most states have adopted an initial pass rate of approximately 75 percent with that number dropping 40 percentage points for black, Hispanic and low-income students. The governors' ninth recommendation is to provide supplemental programs, which would include online tutorials, intervention programs, summer academies and multiple opportunities for students to take exams to improve high school graduation rates.

The governors stated that two-thirds of all new jobs created over the next decade will require some postsecondary education, but not necessarily a four-year degree. The governors' tenth and final recommendation will encourage states to

develop student contracts where the state pays for up to a semester of tuition for students who continue to take industry-specific training at their local community college during the summer and fall after graduation, which they believe will assist with job creation in the industry sector.

According to the Chairperson of the National Governors Association, Governor Mark R. Warner, the governors have made redesigning the American high school its highest priority as they believe the knowledge-based economy will require skills and training beyond high school. Warner continues, "Too often, that is not the case—too many of our public high schools are failing our students. It is time for a new approach to high school, one that challenges students and gives them new opportunities to transition to college or careers" (Warner, 2005).

Michigan's Governor Granholm signed on with Governor Warner and the coalition of governors from twelve other states in an effort to develop legislation that requires tougher high school courses and diploma requirements in the state of Michigan. The governor's plan appears to be an effort to address national statistics regarding graduate preparedness for college and/or employment beyond high school.

Joining Bill Gates and the governors in their criticism of the country's high schools is President Bush's Council of Advisors on Science and Technology, Robert Herbold, who published a report in February, 2005 conservative newsletter *Imprimis*.

In his article he stated, "The failure to address the immense shortcomings in math and science education in the U.S. is unacceptable and will lead to the weakening of our nation," and he went on to say, "The scores of U.S. students in grade 12 are abysmal" (Herbold, 2005). He claims that the reason our production of science and engineering talent in America is low compared to other countries is due to the K-12 math and science skill our students receive in America's high schools. Herbold claims that our students are weak in math and science, and that our 12^{th} grade students are rated in the 10^{th} percentile, asserting that 90 percent of the industrialized countries score better than the twelfth grade students in the U.S.

Herbold has identified two areas of concern. His first concern is that 56 percent of our high school students taking science are being taught by teachers who did not major or minor in science in college, citing the September, 2000 issue of the National Commission on Math and Science Teaching study. The second problem, according to Herbold, is that only 45 percent of America's high schools require three years of mathematics, and only 24 percent of high schools require two years of science.

His solution to the problems in America's high schools is to begin a student vouchers system and increase the number of charter schools to create competition to generate improvements in schools. He also favors retention, stating that "schools need to stop promoting unprepared students to the next grade level" (Herbold, 2005).

Herbold is calling for salary increases of 10 percent with an annual wage over $100,000 for the "top teachers" and to "isolate the bottom 7 percent of teachers and if no progress is made within a reasonable period – terminate them." He plans to pay for these reforms by having the K-12 school districts "tackle its budgets with gusto and re-allocate funds" (Herbold, 2005), suggesting that his reform ideas be implemented by school districts without an additional funding source.

Cherry Commission

As a result of Governor Jennifer Granholm joining the Coalition of Governors calling for K-12 school reform, the State of Michigan is implementing its own improvement concepts. More than a third of Michigan high schools have failed to meet the academic goals established by the Michigan Department of Education and are out of compliance with federal No Child Left Behind legislation. As a result, Governor Granholm is taking a critical look at Michigan high schools, and in an effort to double the number of college graduates in the state of Michigan by 2015, she established a Blue Ribbon Committee to study the issue and placed Lieutenant Governor John Cherry as chair.

"I remain convinced that we must raise the level of educational attainment in Michigan if we are to compete for jobs and economic growth," said Granholm. "We will never achieve our goal of doubling the number of college graduates we produce

in Michigan without addressing the performance of our high schools" (Hansen, 2004).

The governor also referenced data showing an increase in the number of schools in the state of Michigan graduating less than 80 percent of their students. With this statistical backdrop, Governor Granholm began the journey of looking for ways to restructure Michigan's high schools. Specifically, Governor Granholm charged Lt. Governor Cherry and the Commission on Reform with finding ways to double the number of students earning college degrees in Michigan within 10 years.

The Cherry Commission began by identifying the issues having to do with high school preparation for college. Statistically, 90 percent of Michigan's ninth grade students state that they want to go to college, but only 41 percent enter college and just 18 percent will graduate with a bachelor's degree. Additionally, only 30 percent of the Michigan high school graduates take rigorous classes that would prepare them for a post secondary experience.

The first recommendation of the commission is to develop a curriculum that integrates entrepreneurial skills into the K-12 Michigan standards. The commission believes that if Michigan returns to thinking about entrepreneurship, risk taking, creativity, and adaptability, the students could transfer those skills to the market place, assist with new business creation, and, subsequently, stimulate the economy.

The commission called for replacing the high school MEAP test, which is Michigan's high school assessment tool, with the ACT college entrance exam. Their thinking is that Michigan students would have taken step one in the college acceptance process by taking a test that is relevant to them and to the university admissions directors. This would require districts to align their content standards to the ACT college entrance exam.

The commission's third recommendation has to do with teaching all students and providing them with rigorous academic preparation for a high performance job market. The commission denounced the long standing tradition of selecting and sorting students into college and non-college tracks, stating that it is no longer relevant. Members of the commission stated that the practice of sorting students is harmful to the student and the student's future job potential, as well as to Michigan's economy. This component calls for teaching the same core competency classes and having the same high expectations for all students.

The Cherry Commission would like to "raise the bar" and establish a new standard for all students to complete a meaningful post-secondary education after they finish high school. Citing that in the previous century a high school diploma was the standard, but the new expectation for the 21st Century is a postsecondary education. They hope to accomplish this goal by linking financial support to students from the residents of the state of Michigan. "This commitment to universal higher education should strive to remove financial and other barriers to degree and credential

completion and end, once and for all, the idea that postsecondary education is an option rather that a necessity" (Hansen, 2004, p. 12). It is the hope of the Cherry Commission that this recommendation will set and achieve a new standard of education in America.

The commission's fifth recommendation deals specifically with high schools; those high schools that consistently fail to meet the Michigan performance standards and subsequently do not help students find success. The commission recommends that Michigan provide an opportunity for students to attend any high school capable of helping them reach their academic goals. Although not specifically mentioned in the report, the commission initiative speaks to an expansion of the schools of choice program, the establishment of the voucher system, or the expansion of the number of charters allowed in the state. They are also calling for the "refashioning of high school environments" formed around research and proven models of student success such as the small school concept, the blended high school, and postsecondary institutions with career or themed learning environments.

To achieve the high expectation established in the report, the commission recognizes that the state's teachers need to be retrained. The commission is calling for an increase in the type of teacher training necessary to create the high-expectation learning environment. According to the report, teachers need the type of professional development that will allow them to help all students meet the new rigorous standards

and move from the former method of selecting and sorting students for admission to universities, to helping all students attend a postsecondary institution.

The Cherry Commission's final recommendation is asking the legislature to revise Michigan's current dual enrollment funding system to a system that promotes collaboration between secondary and postsecondary institutions. Their goal is to have fifty percent of Michigan's high school students earning college credit by 2015. The commission's logic with this recommendation is that once students have earned college credit in their school, there is a greater likelihood that they will continue.

The recommendations represent some dramatic changes in the way school is currently conducted in Michigan. The commission strategy of moving to small high schools will greatly impact the communities that have built large, multi-million dollar, comprehensive high schools. The small school research conducted by Cotton (1996) concluded that students are less likely to "fall through the cracks" and will have a greater likelihood of academic success in a small school setting, which was one of the Cherry Commission recommendations. The most significant change proposed by the commission is the shift in preparing all students for a postsecondary education and providing the funding to break down the barriers for students to obtain a degree. This recommendation is a definite change from the select and sort method currently in place in most secondary institutions.

The commission's recommended reforms are being suggested as a long-term approach to stimulate Michigan's economy and to prepare the type of workforce necessary to drive an information driven, highly technical economy. The approach that all students will be educated in a small school, where adults know and nurture them and assure that every child is prepared to enter a postsecondary institution, is in direct conflict with our current model of the highly competitive, extra curricular driven, mega-high schools, where teachers are currently involved in sorting students into college and non-college bound tracks.

Once the Cherry Commission's recommendations are institutionalized and viewed as a working model, a direct point of conflict will occur in local districts when boards of education decide to build a new secondary school building. The large multi-million dollar high school that is capable of supporting elaborate amenities is the current model among the people making the decisions: the schools officials, board members, designers, and architects. As Downs (1957) reminds us, rational people will seek the solution with the greatest utility benefit to them and will always "act in their best interest." The commissions' report will face condemnation from the status quo who are interested in the large secondary building complete with the performance gymnasium, swimming pool with a diving tank, performing arts center, fitness center, and other amenities that a smaller school would not be able to financially support.

High schools are currently being targeted to change the way they educate the

students who walk through their front doors, but what changes must be made, and why are our national and state leaders calling for sweeping reforms? What has occurred in the global market place that has rendered high schools in America, according to Bill Gates, "obsolete" and in need of restructuring? Gates and President Bush's chief advisor for science and technology have called for major reform to take place in high schools within the U.S. Are these reform-minded conversations occurring at the local level? What is being discussed by local school boards, and how will, or how should the high school building be altered to meet the need of the 21st Century learner? Or, should there even be a high school building? The educational community needs to consider how learning in the 21st Century will change the way schools conduct schooling and what will the effect be on the building itself.

At the local level, school boards, administrators, and architects, in conjunction with the community, are building larger and larger high school buildings with increasingly more non-traditional learning space or more amenities. How this non-academic space is used may signal a redefinition of what local school districts consider essential learning in 21st Century America. Are the school buildings of 30 and 40 years ago fundamentally different from the new $60 to $100 million structures constructed in this century? If the new buildings are fundamentally different, how will this new space redefine education? Finally, what has occurred in the US, and globally, for national leaders to initiate sweeping reforms in high schools?

21st Century Learning

According to Gordon Brown in remarks to the Royal Economic Society in Great Britain the world has changed dramatically. Over the last thirty years, world trade has increased from $300 billion to $5,000 billion, and foreign investment has increased from $10 billion to $600 billion a fifty-fold increase (Brown, 2000, p. 90). He went on, observing that new realities are creating a global economy with international, not national or regional markets that change rapidly. He substantiated these claims by noting that the economic changes have been driven in large part by advances in technology and communication.

In the US, former Chairman of the Federal Reserve, Alan Greenspan, agrees with Brown's assessment, observing that technological innovations in the latter part of the last century have expanded markets and created working conditions that require fewer workers to produce and deliver more goods and services. Greenspan went on to say that the workers of today are expected to work smarter as we move from an industrial based economy to a knowledge based economy, which significantly impacts student learning (Brown, 2000, p. 90).

The shift from an industrial based economy to a computer based economy is occurring at a more rapid rate than the previous shift from an agricultural economy to a factory based work force. The industrial revolution occurred over generations and it allowed people and institutions, such as schools to adjust according to Harvard

Historian Arthur Schlesinger, Jr. (Schlesinger, Jr., 1997, pp. 5-6). He continues, stating that the knowledge based revolution is "far swifter, more concentrated, and more dramatic in its impact." What institutional questions will arise as we shift from the industrial age, where brawn counted more than brains, and schools could invest in the academic development of only some students, enabling the others to find employment in the heavy labor work environment of the factory era? How will the school buildings being constructed today, help facilitate the requisite changes in student learning?

The new economy and globalization bring a higher standard of living, better services, and more choices for Americans, but this increased efficiency comes to us at a cost. In 1999 workers in the U.S. "put in more hours on the job than their counterparts in other industrialized nations, working two weeks a year more than the Japanese and 14 weeks more than the Norwegians (Grimsley, et al, 1999, p. A8). With parents working longer hours, child care and after school activities become a function of the institutions, notably the schools. The new economy also rewards those who defer child rearing to seek higher levels of education. According to the US Secretary of Labor, "In 1970, college educated men earned 36 percent more than high school graduates. In 1997, the gap between college educated workers and high school grads had nearly doubled to 62 percent" (Herman, 1999).

In the U.S., after-school activities or out-of-school learning depends on the

community in which the student lives. In Michigan, and in the United States, educational funding for school construction is in large part drawn from property taxes. Consequently, "rich communities almost always have better schools than poor communities, and the resources to provide the learning that occurs outside the 20 percent of the time that students spend in the classroom" according to James Coleman (1987). He clarifies his position, writing that schools can make a difference, "but they are greatly limited in their potential impact by factors relating to the family and the community" (Coleman, 1987.) Coleman continues:

Variations among family background make more difference in achievement than do variations among schools. This does not imply that schools don't make a difference. There is evidence that in the absence of schooling, children from whatever background learn very little of certain things, such as mathematics. What it does imply is that schools, of whatever quality, are more effective for children from strong family backgrounds that for children from weak ones (1987).

School districts that build multi-million dollar high schools may be able to attract School of Choice students with the amenities they offer; however, as Coleman articulates, the quality of the home is the primary factor in determining a student's success – not the quality of the school building. The paradox is that the wealthy communities with the higher tax base are the school districts that can afford the new multi-million dollar secondary buildings, while the poorer communities with a higher percentage of families that struggle cannot easily improve their school facilities.

New School Buildings:

Wealthy communities can afford to build new high schools, and there is a growing body of research that suggests a new school building provides a number of advantages for the students and staff alike. These advantages are articulated by school officials, board members, and design engineers who are interested in convincing the voting public to cast a ballot in favor of the new building. Listed below are studies that link educational achievement and student performance to the quality of the physical structure.

Size: The multi-million dollar mega high schools that attract School of Choice students are often found in consolidated districts or wealthy suburban growth districts that end up building extremely large secondary school buildings. Forty years ago, the two to four thousand student high schools were considered efficient and studies conducted during that era suggested that the elimination of the small school should be a priority and that consolidation should occur whenever possible (Conan, 1959 pp. 37-38). However, today research indicates that bigger is not always better. In 1996 Cotton conducted an inquiry that developed ideal school size numbers stating that an elementary school should be between 300 to 400 students while high schools should be less than one thousand students (Cotton, K. 1996). This rests contrary to the notion that the large, multi-million dollar, mega high school will provide better academic preparation for the students who attend. There is a growing body of

research that suggests the small schools will improve education by creating small, more intimate learning communities where students are well known and are encouraged and cared for by adults. The Wasley research goes on to say that the smaller school reduces the often-harming effect of student isolation and encourages parent participation (Wasley, et al, 2000).

A small school study conducted by Nathan and Febey in 2001 found similar advantages to attending a small school. Their inquiry discovered that the less populated school buildings are safer places for students, record higher academic achievement, have fewer discipline issues, achieve increased graduation rates, and provide a greater level of teacher, student, and community satisfaction (Nathan & Febey, 2001).

A small school study conducted in New Jersey in 1991 with 293 high schools in the sample found that school size was the best predictor of high-test scores. Fowler and Walberg conducted the inquiry and considered the socio-economic factors of the varying schools and still discovered that small schools outperformed larger schools (Fowler & Walberg 1991, pp. 189-202). A follow up study conducted in 2000 agreed with Fowler and Walberg's findings that small schools do out perform larger schools. The 2000 study involved four states and over 13,000 high schools (Keller, 2000).

A February 2002 inquiry released by a public opinion research agency, Public

Agenda (PA), agreed with the above researchers and endorsed the small school concept. Their research indicated that small high schools offer a sense of belonging which creates other positive behaviors. The Public Agenda summarized its findings below:

The latest idea in America's ongoing debate on education reform has been a simple one: when it comes to schools, small is beautiful. A group of influential reformers says the U.S. trend toward larger and larger school buildings is creating schools that are difficult to manage in which students feel alienated and anonymous. The advocates call for high schools of around five hundred pupils, saying teenagers thrive in more personal settings. The kind of comfortable, informal communication that takes place readily in a small institution is simply not feasible these advocates say, in a larger, more harried one. (Public Agenda, 2002, p. 1)

Also included in the 2002 Public Agenda report was the parent belief that administrators were able to more readily identify and assist poorly performing teachers and would be better able to tailor individual learning needs based on the student's learning style. The study went on to state the belief that larger schools were more likely to have discipline issues.

IAQ: Another study that links educational achievement and student performance to the quality of the physical structure is an EPA Report completed in 2000. The report discovered that poor Indoor Air Quality (IAQ) is pervasive in older

schools and may cause, among other ailments, irritated eyes, nose and throat, upper respiratory infections, dizziness, headaches, and fatigue. These poor IAQ buildings have collectively been labeled "sick building syndrome" (EPA 2000). The U.S. General Accounting Office has discovered that fifteen thousand schools have been identified as having poor IAQ, affecting more than eight million school children (General Accounting Office 1995).

The Occupational Safety and Health Administration (OSHA) as well as the National Institute of Occupational Safety and Health (NIOSH) call for twenty cubic feet of fresh air per person per minute. The air handling systems in the older school buildings are not equipped to handle that type of output and deliver less fresh air than recommended (National Clearing House for Educational Facilities, 2002). Studies often reveal the obvious. When students and teachers are sick they do not perform as well as healthy ones, which contributes to poor academic performance (Kenney, 2001, p. 32; Leach, 1997, pp. 32-37). Many of the illnesses are caused by poor IAQ, which increases the rate of student and teacher absenteeism. Smedje and Norback (1999) found a positive relationship between high levels of air born mold and bacteria in schools and an increase in the absentee rate (Smedje, & Norback, 1999, pp. 445-450). How many days do students miss in schools with poor IAQ? The American Lung Association (ALA) discovered that children in U.S. schools who suffer from asthma, exacerbated by poor IAQ, miss over ten million days of school annually (American Lung Association 2002).

Poor IAQ is often caused by inadequate ventilation in a building, which increases the level of carbon dioxide caused by human respiration. According to Myhrvold, once the carbon dioxide level reaches one thousand parts per million, which is about three times the outside/normal limit, people begin to experience headaches, drowsiness, and an inability to concentrate. He found that classrooms with poor ventilation decreased student performance and increased complaints of health issues compared to classrooms with lower levels of carbon dioxide (Myhrvold, et al., 1996 pp. 369-371).

Schneider, in 2002, provided additional insight into poor indoor air quality with studies conducted in Chicago and Washington D.C., which revealed that twenty-six percent of Chicago's teachers and thirty percent of Washington D.C.'s teachers reported illness issues related to the aging school facilities. Most of the health issues were associated with poor IAQ that causes respiratory problems for the occupants of the school building (Schneider, 2002, *unpublished manuscript*). Both of these cities have a majority of minority students in their school buildings. A study by the General Accounting Office (GAO) in 1996 found a direct correlation between poor and minority students and school facilities that suffer from poor indoor air quality. The GAO study indicates that the higher the percentage of students eligible for free lunch, the greater the likelihood of unsatisfactory indoor air quality (General Accounting Office, 1996, GAO Report HEHS-96-103).

Temperature: Aside from having the technology to regulate air quality, newly constructed school buildings offer other positive benefits to students, such as the ability to regulate temperature. Harner found in 1974 that the optimum temperature range for learning is between 68 and 74 degrees Fahrenheit. He also discovered in his research that once the temperature goes above or below the stated range, the ability to learn is greatly affected (Harner, 1974, pp. 4-6). The same is true for teachers as Heschong discovered in 1999 that thermal factors negatively impact a teacher's ability to provide instruction (Heschong Mahone Group, 1999). Teachers believe that thermal comfort, if not properly regulated, adversely affects teacher quality and student performance according to Lackney's findings in a 1999 study, which focused on how school facilities degrade working conditions, result in higher absenteeism, reduced effort, lower effectiveness in the classroom, and lower job satisfaction (Lackney, 1994).

Lighting: The newer schools have the ability to regulate temperature and maintain the quality of the air within a building, and they also are equipped with contemporary lighting that enhances student performance according to an inquiry conducted in 1985 that indicated appropriate lighting improves test scores, reduces off-task behavior, and plays a significant role in student achievement (Dunn, et al., 1985, pp. 863-869). This is one more reason for the voters of a community decide to upgrade their schools by voting in favor of a new building.

Acoustics: Much like temperature, lighting, and air quality, acoustics also impact student learning. Good acoustics are fundamental to an appropriate academic environment according to researcher Lemasters, who published a report in 1998. The report indicated that higher student achievement is associated with schools that have less external noise. Newer buildings are being designed to limit the external and internal noise unlike the schools built fifty or sixty years ago. Lemasters also discovered in his inquiry that excessive noise causes stress in students, which adversely affects academic performance and that outside noise causes dissatisfaction with their classroom (Lemasters 1998, p. 18). He further discovered that teachers place great importance on noise levels in their classrooms, and they believe the higher noise levels cause more discomfort and disruption, which lowers the teacher's efficiency, and in turn, lowers the quality of instruction.

Quality: Aside from the intrinsic qualities a smaller school provides to its student population, there is also an extrinsic quality of schools, the quality of the school building. As stated, the age, condition, and quality of the school have as much to do with student performance as size of the student population. Chan in 1979 discovered that students in a modernized or new school building scored consistently higher in standardized tests than students in non-modernized buildings (Chan, 1979). An additional study in 1987 found that students in newer buildings outperformed students in older buildings and posted better attendance, health records, and had fewer

incidents of discipline (Bowers, & Burkett, 1987). Their study had approximately a three percent variance and considered such variables as socio-economic differences in the student population. Voters who spend millions of dollars on new school buildings have a growing body of research behind their decision as the consensus appears to be that newer and better school buildings contribute to higher student scores on standardized tests, healthy students, and better student discipline records (Bowers, &. Burkett, 1987).

A study conducted in 2000 by Stricherz published differing opinions regarding the student in new school buildings and students' level of academic improvement versus those pupils in older, less modern buildings. The Stricherz research suggests that there is no improvement in academic performance when students are in a newer facility. He did discover that student achievement in "shabby school buildings," those with no science labs, or inadequate heating and ventilation systems, declined in comparison to their counterparts in new buildings. Stricherz states that the study, "does not show that student performance rises when facilities go from the equivalent of a Ford to a Ferrari – from decent buildings to those equipped with fancy classrooms, swimming pools, television-production studios, and the like" (Stricherz, 2000, pp.30-32). However, the academic performance of the students in less adequate buildings demonstrated a decline in scholastic achievement compared to those in a new or remodeled school building.

What conclusions can be determined by the above research regarding newly constructed schools versus older, unkempt buildings? Are the community members who vote in favor of the new, multi-million dollar school providing a better education for the students of that community? Based on the studies listed above, there appears to be some advantage to educating students in new or remodeled schools. The tangible features of a building such as heat, noise, cold, light, and air quality have an obvious effect on the students and teachers capacity to perform. The researchers have established a compelling argument that clean air, quite comfortable surroundings, good lighting, and a safe learning environment can create an optimum learning environment. The investigations also revealed that the small school verses the large high school provides better opportunities for students to learn and not become isolated while at school.

The studies listed above demonstrate that an improved facility enhances good teaching, improves student discipline, promotes good health, and is conducive to student learning. The significant capital investment of 60 to 123 million dollars spent on building a new high school will maintain the academic performance of the students who attend the new facility as compared to those students who must attend school in a less adequate school building.

However, the research reviewed above does not provide evidence that schools with an eight-lane competition pool, a sunken gymnasium that seats thousands with

an encircled indoor running track, a weight room, a food court, a football stadium, practice fields, tennis courts, and a perfectly landscaped parking lot that circles around the school will improve student academic performance. Therefore, a logical question to ask is why do taxpayers go to the polls and vote to build the large, multi-million dollar high school with athletic and performing arts stations? This study will examine the process and the thinking of those involved in the school design process.

School Design: It is impetrative that this study identify the components of a high school building that are recognized by practicing professionals within the field of school design as sound building concepts. The study must articulate the components of a high school that are currently considered the norm within the construction industry. To do so this study consults a collective body of knowledge regarding what is considered a well-designed school that has been compiled and articulated by Jeffery A. Lackney from the Engineering Professional Development at the University of Wisconsin-Madison. He has developed the educational design principles that are derived from a variety of sources and listed in The National Clearinghouse for Educational Facilities (NCEF). Lackney has developed each educational design principle based on the following hypotheses: "That all learning environments should be learner-centered, developmentally and age-appropriate, safe, comfortable, accessible, flexible, and equitable in addition to being cost effective" (Lackney, 2003, p. 1). Listed below are the eleven principles that are considered

relevant to any high school building project and are listed in the NCEF as important components of school construction.

1. Involve a Large Cross Section of People in Planning

The first principle calls for school districts to involve a large cross section of people from the community in the design development phase of the school project. Lackney believes that it is important to involve a variety of community members during the planning period for many reasons and refers to this principal as "Maximize Collaboration in School Planning and Design" (Lackney, 2003, p. 1). In addition to school administration, he states that the process should include active participation of parents, business and community leaders, teachers, and even students when possible. He contends that recommendations from these groups should be taken very seriously. Lackney admits that extensive community collaboration on the building project may be a frustrating process but claims that there are many benefits. Most important is the increased participation, which assists in building community support for the passage of bond issues as well as giving the community a sense of ownership in the process and in the eventual school building. Additionally, community participation in the educational process encourages a dialogue between the school and its community. Finally, community and teacher involvement may defuse politically motivated issues that may divide groups in the community.

Another tenet for districts to follow is to engage those who will occupy the building in the design process. Crumpacker in an article about creating schools that work, agrees that the people who use learning spaces–teachers, mentors, and students–need to be actively involved in identifying their activities, needs, and the spaces appropriate to facilitate them. Involvement in the design reinforces the essential element of building a sense of ownership and community right from the beginning of the school (Crumpacker, 1995).

"About half of our work is planning and the other half is architecture" states Steven Bingler, President of Concordia Architects. Bingler believes that community involvement is extremely important in the building process and that school designers spend half of the time dedicated to a project on the planning. Designer Fielding agrees stating, "Every public building, whether it represents art, music, law, education or any other noble public enterprise should be noble. Form follows function. But there is nothing about the concept of noble that limits it to bricks and mortar." He continues, "The process that we use in planning learning environments should be noble. It's rare to find a portable classroom that inspires a child's imagination" (Fielding, 1999).

2. Create Smaller Schools

The NCEF is calling for learner groupings of not more than 600-800 students in secondary school. If a community school must house more than 800 high-school

students, their recommendation is to decentralize the facility both administratively and architecturally into a village, campus, or multi-faceted building comprised of a series of interconnected schools-within-a-school for a maximum of 400 students in each group of learners (Lackney, 2003, p. 6).

The research community has known for some time that small schools in comparison with large schools offer students greater opportunities to participate in extracurricular activities and to exercise leadership roles (Barker & Gump, 1964).

Studies listed previously in this work indicate that the size of the learning environment has an indirect effect on student learning. Essentially, the research listed below indicates that size creates conditions for success. They go on to say that when the size of the learning environment is reduced, the benefits become apparent very quickly, within a year or two, and as a result, students experience a greater sense of belonging and are more satisfied with their schools (Cotton, 1996). Students experience fewer discipline problems (Raywid, 2000) and incidents of crime, violence and gang participation decrease (Cushman, 1997). There are fewer incidences of alcohol and tobacco abuse (Klonsky, 1998). The dropout rates decrease and graduation rates and postsecondary enrollment rates increase (Funk & Bailey, 1999).

The problems associated with large high schools and the related question of optimal school size have been debated for the last 40 years and are of growing

interest today. Approximately 70% of American high school students attend schools with enrollments of 1,000 or more students; nearly 50% of high school students attend schools with enrollments greater than 1,500 students. Some students attend schools with enrollments of 4,000-5,000 students (High School Size, 2005, Ed.gov).

3. Plan for Learning to Take Place Directly in the Community

The school building is just one place learning takes place. While the school building is being seen more as a community center, the idea of embracing the whole community as a learning environment has evolved in a complementary fashion (Lackney, 2003, p. 5). According to Lackney, educational programs can and are taking advantage of educational resources by forming educational program partnerships with museums, zoos, libraries, other public institutions, as well as in local business workplace settings.

Daniel Duke agrees with Lackney's assessment and states that "schools need to involve the community and offer neighborhood academic centers where academic tutoring and special seminars are offered for students at these centers" (Lackney, 2003). He recommends that instructors be paid as individual practitioners or on a fee for service basis. Duke suggests that student community centers may be placed in a zoo, shipyard, museum, shopping mall, hospital, university, corporate office, or an agricultural setting for a portion of a day or longer. Park facilities might be available

exclusively to students until noon or one o'clock, at which time the entire community would be able to take advantage of the park's resources (Duke, 1999).

Duke considers secondary education as a network and acknowledges that what is already known to be true learning does not stop at the schoolhouse door. Communities are full of resources for learning and Duke sites an example of a transition center for students recently arriving from a foreign country or another school system. He contends that "Transition centers offer temporary settings in which to acquire the language skills and other prerequisites to move to a regular learning center" (Duke, 1999). He continues to suggest the concept of residential learning centers where students from dysfunctional homes, or those in need of special supervision, may stay and receive a range of learning opportunities; the centers will be staffed round-the-clock with adult supervision. Also, there is the idea for youth services centers where students may receive a range of assistance, including social services, juvenile justice, mental health, counseling, health clinics and probation officers. Virtual schools can assist students with computers at home to participate in an electronic school through the Internet and World Wide Web (Duke, 1999). Duke continues, "In addition to the above components of community learning, schools should also provide alternative programs for students who experience difficulty adjusting to rules and expectations at a comprehensive high school." He believes that these alternative settings should develop programs leading to a GED or adult

education diploma, in addition to offering opportunities for students to earn post-secondary credits at local colleges.

4. Consider Home as a Template for School

Another principle recommended by the NCEF is an attempt to create schools with home-like characteristics, which may include creating smaller groupings of students, often called "families" in the middle school philosophy, designing appropriately-scaled elements, locating restrooms near instructional areas, providing friendly and welcoming entry sequences, creating residentially sloping roofs, and creating enclosed "backyards". The transition from the home setting to institutional settings such as the school environment can be stressful, especially for younger children. NCEF suggests that creating physical and social home-like characteristics may reduce anxiety on the part of both parent and child, help children feel more comfortable and enable them to concentrate on learning (Lackney, 2003, p. 7).

Crumpacker agrees with Lackney's assumption that teachers and students must have an opportunity to personalize space with individual and group artifacts from home and items that have special meaning and importance. "Personalized spaces support building a sense of community when individually personalized spaces are coherently linked together into personalized small and large group spaces. The school itself should have a 'signature' that is apparent in the design and decorating of

the space to contribute to the sense of being a unique community" (Crumpacker, 1995).

5. Keep Class Sizes Small

The size of the primary learning group in which the child spends the most time makes a significant difference in the quality of education and development according to the NCEF report. The report suggests creating instructional areas that allow for 12-16 learners in early childhood and elementary grade levels, 16-20 learners in middle school grade levels, and 20-24 learners in secondary school grade levels.

Research out of the Texas education system, using data from more than 800 districts containing more than 2.4 million students, Ferguson found significant relationships among class size and student achievement. His research indicated that in grades first through seventh, using student/teacher ratio as a measure of class size, district student achievement fell as the student/teacher ratio increased for every student above an 18 to 1 ratio (Ferguson, 1991, p. 465).

In 1997, Wenglinsky published research findings concerning the relationship between class size and student achievement. His study was designed to investigate the

relationship between spending in education and student performance. The data he used was generated by the National Center for Education Statistics. Wenglinsky studied fourth-graders in 203 districts and eighth-graders in 182 school districts from across the United States and discovered that:

Class size served as an important link between school education spending and student mathematics achievement at both the fourth-grader and the eighth-grade levels. At the fourth-grade level, lower student/teacher ratios are positively related to higher mathematics achievement, and at the eighth-grade level, lower student/teacher ratios improve the school social environment, which in turn leads to higher achievement (Wenglinsky, 1997).

In the 1996 Tennessee study conducted by Achilles et al. on smaller class size, students outperformed larger class students on both standardized tests such as the Stanford Achievement Tests and curriculum-based tests like the Basic Skills First test. This was true for white and minority students in smaller classes and for smaller class students from inner city, urban, suburban, and rural schools (Achilles, 1996, p. 113).

Subsequent research efforts in Tennessee conducted by Finn et al. in 1998 provided additional evidence on the positive effects of class size reduction. They began a follow-up study to examine whether the effects of the smaller class size experience persisted when students were returned to normal size classes. Their

research findings discovered that students from the smaller classes still outperformed the students from the larger classes in all academic subjects. In fourth grade, students from the smaller classes were better behaved than students from the larger classes in areas such as student classroom effort, initiative, and disruptiveness (Finn, et al., 1998).

The NCEF report indicates that throughout the early grades, children in smaller classes were found to outperform children from regular class sizes in all subjects. This was especially true in reading and mathematics test scores with average improvements of up to 15%. Smaller classes were especially helpful for children in inner-city schools. The report suggested the reasons for these gains may be that more and higher quality student-teacher interactions are possible in a smaller class and that spatial density and crowding are also reduced. In a study of younger children it was found that increased density can induce stress in children thereby increasing aggressive behavior and distraction in younger children (Lackney, 2003, p. 12).

6. Design for Safe Schools

Design of the school directly affects human behavior which, in turn, influences opportunities for crime, increases the fear of crime, and impacts the overall quality of student life. These opportunities for crime can be reduced through

appropriate planning and design decisions. Crime Prevention Through Environmental Design (CPTED) is aimed at "identifying conditions of the physical and social environment that provide opportunities for or precipitate criminal acts and the alteration of those conditions so that no crimes occur" (Brantingham & Faust, 1976).

While CPTED generally involves changing the design of the school to reduce the opportunity for crime, it is aimed at other outcomes including reducing fear of crime that may occur on campus, increasing the aesthetic quality of a school, and subsequently the quality of life for law-abiding students and citizens who attend or visit the school building (Clarke, 1995a).

Jacobs (1961) discussed the effects of street and sidewalk surveillance, and claimed that high levels of natural surveillance created a safe school. Jacobs stated that streets leading to schools and school parking areas need the following qualities to make them safer: a clear separation between public and private space and constant sidewalk use, which translated into limiting the number of entrance and exit areas to promote a higher traffic area. According to the National Crime Prevention Institute, streets and sidewalks with high volume promote natural and informal surveillance by students and other pedestrians, and therefore have the potentially to increase safety (National Crime Prevention Institute, 1986).

According to Clarke (1992), situational crime prevention is aimed at eliminating opportunities for crime. It includes opportunity-reducing measures that are "directed at highly specific forms of crime that involve the management, design or manipulation of the immediate environment in as systematic and permanent way as possible." Designing schools that limit the opportunities for criminal behavior by creating space that is perceived by would-be criminals as high traffic or open and well lit areas increases the likelihood that crime is reduced (Clarke, 1995b).

Taylor and Harrell (1996) support Clarke's claim that design reduces the availability of opportunity when they wrote that rational choice theory "suggests that crimes are most likely to occur when potential offenders come into contact with a suitable crime target where the chance of detection by others are thought to be low, or the criminal, if detected, will be able to exit without being identified or apprehended." The question the offenders often ask themselves is, "How visible, attractive, or vulnerable do targets appear" (Taylor & Harrell, 1996)?

As stated above the three critical safe school design principles include access control, natural surveillance, and definition of territory. Lackney in the NCEF report states that natural access control denies access to a crime target and creates a perception of risk in offenders. Access control uses doors, shrubs, fences, gates and other physical design elements to discourage access to an area by all but its intended users. He also affirms Jacobs' theory that natural surveillance assures that offenders

and intruders will be observed. It increases the likelihood that individuals who care, but are not officially responsible for regulating the use of space, will observe these individuals and either challenge their behavior or report it to someone who is officially responsible. Lackney further suggests that surveillance is achieved by placing windows in locations that allow intended users to see or be seen, while ensuring that intruders will be observed as well. Opportunities for surveillance are enhanced, by providing adequate lighting, glass, and landscaping that allow for unobstructed views. Lackney also suggests locating the administrative areas directly adjacent to the main entrance to the school (Lackney, 2003, p. 9).

7. Establish a Community Forum

Another recommendation of NCEF is to provide a public assembly space to act as a community forum connecting the school and the community. This space should be accessible, open, free-flowing, and flexible. The recommendation suggests that a community forum is more than a big, open, undifferentiated space. The forum should have a "town square" quality with small areas off the space for more specific activities. Lackney, when writing the NCEF report, suggests the school provide a space for a medium to large numbers of people for dance, music, drama, community meetings, exhibitions, and displays of student and community work. His research indicates that auditoriums, as well as physical education facilities, such as gymnasiums and natatoriums, should be directly adjacent to this public space. The

recommendation also suggested that the forum act as a break-out space for these large-assembly community activities (Lackney, 2003, p. 16).

Anne Fox agrees with the NCEF's concept of incorporating the community and providing it with a center for its activities. She writes in *Schools of the Future and Sustainable Design* that schools are the centers of communities, and she supports the concept that schools are important symbols of "place." She contends that school buildings should be welcoming to all members of the community. Children should be welcomed into the community, not set apart in isolation. Schools should represent centers of life-long learning where community members of all ages come to learn. By looking to schools as centers of community, resources may be shared and conserved by creating a site that is multi-purpose and open many hours of the day throughout the year (Fox, 2001).

Common gathering areas such as the ones suggested in the NCEF report should provide an identity for the learning community. Lackney notes that schools traditionally have not provided space that was completely open, with the exception of the gymnasium, thus reducing opportunities for developing what he refers to as a cultural identity within the school (Lackney, 2003, p. 16).

8. Provide Health Care Service Centers

The NCEF asked school leaders to consider forming partnerships with local health agencies in providing an in-school health-care center for students, parents, and members of the surrounding community. The report suggests providing space for a waiting area, separate from the school, plus several private individual exam rooms and a private office for the care provider (Lackney, 2003, p. 20).

According to the 2002 State Survey of School-Based Health Center Initiatives, there are 1498 school-based health centers across the country. This is an increase of nine percent over the past two years, an increase of 147% since 1994 and an increase of 650% since 1990 when there were an estimated 200. The centers are currently found in 43 states. School-based health centers are located in elementary schools (37%), high schools (36%), and middle schools (18%). Since 1996, elementary schools have seen the largest growth in school-based health centers—growing from 286 or 32% of the total to 557 or 37% of the total (State Health Care Survey, www.healthinschools.org/survey2002).

According to Lackney, many schools have realized that they must take on some social service functions to better serve the immediate needs of their learners. He is of the opinion that schools should be expanding the old nurse's office into a more comprehensive partnership with local health care providers on the school grounds. This is one strategy in which schools can respond to the health needs of their learners

without taking on the added administrative responsibility of operating an actual health care center (Lackney, 2003, p. 20).

The 2002 school-based health survey found that health care centers are located in 61% of the urban schools, 27% of the rural schools, and 12% of the suburban schools in all regions of the country with the Mid-Atlantic States having the greatest percentage of their schools housing a health care facility. These facilities are manned by primary care providers—usually a nurse practitioner or a medical doctor who works full time in 54% of the centers and part time in the remaining 46% of the school-based health centers. Theses health care centers across the country are funded by dollars from tobacco taxes, tobacco settlement, and a mix of other sources (State Health Care Survey, www.healthinschools.org/survey2002). Michigan is not utilizing its tobacco settlement dollars in this way; rather the State of Michigan provides $2,500 college scholarships for students who pass the state's assessment test with a score of a one or a two on a four point scale.

9. Maximize Natural and Full-Spectrum Lighting

Lackney in the NCEF report suggests that schools use "task-appropriate" lighting, eliminate the standard white fluorescent lighting, and emphasize natural and full-spectrum lighting throughout the school. He suggests that when architects are "sitting the building" and deciding on the placement of the classrooms, they should

face indoor activity spaces toward the most favorable climatic directions, such as south-facing activity spaces, to maximize natural lighting (Lackney, 2003, p. 21).

There is additional research that supports lighting as one of the most critical physical characteristics of the classroom (Phillips, 1997). Luckiesh and Moss (1940) found in their study of 5th and 6th grade students that there were significant increases in the scores on the Stanford Achievement Test demonstrated by the students in the well-lighted classrooms over poorly lighted classrooms.

Knirck (1970) maintained that inappropriate illumination levels "abuse the human eye and have unfortunate physiological consequences" (p. 10). Classroom lighting plays a particularly critical role because of the direct relationship between good lighting and student's performance (Phillips, 1997). Hathaway and Fielder (1986) found that light is a key to the general well-being of people confined to a physical facility a great portion of the day. King and Maran (1979) noted several research reports showing that florescent lighting increased hyperactivity among children compared with the use of full spectrum or incandescent lighting.

Hawkins and Lilley (1992) in their study recommend 50 foot-candles for regular class work and 100 foot-candles for instruction at a chalkboard. They also recommend at least 20% of the wall space be devoted to windows. According to the studies listed above, natural light and artificial full-spectrum lighting have been found to improve student's performance as well as to reduce hyperactivity in children. The

studies have shown that students tend to react more positively to classrooms that have windows.

10. Design Healthy Buildings

The NCEF Report is clear that achieving good indoor air quality is as essential as providing comfortable, healthy school environments. The strategies for improving indoor air quality include increasing levels of fresh-air intake and increased ventilation rates in buildings. However, one area of concern in building design has been the thermal "tightening" of buildings for energy conservation in the 1970s which may be one of the causes of a variety of pathogenic factors in children in so called "sick school buildings" (Evans, Kliewer & Martin, 1991). Evans, Kliewer, and Martin have discovered that in "sick buildings" students have been found to exhibit clear signs of sensory irritation, skin rashes, and mental fatigue, which are all factors with the potential of decreasing the ability of students to perform. The strategies for improving indoor air quality, such as increasing levels of fresh-air intake and increased ventilation rates in buildings, have shown that these mediating factors can be eliminated, insuring that students can remain concentrated on the tasks of learning (1991).

Lackney in the NCEF report agrees that thermal comfort has been shown to influence task performance, attention spans, and levels of discomfort. When thermal conditions are below optimal levels, students' dexterity is affected; higher than optimal

temperatures decrease general alertness and increase physiological stress (2003, p. 23).

11. Design for Appropriate Acoustics

Schools should be constructed using sound absorbing materials on floors, walls and ceilings. The buildings should be located away from noisy and congested urban streets and active noisy areas in the school should be separated from quiet study areas according to the NCEF Report. They also suggest that within instructional areas, acoustical barriers be provided. These barriers should diminish the effects of different sounds, noises, and speech patterns that distract learners from focusing. There are significant increases in blood pressure associated with schools being near noisy urban streets. Exposure to traffic noise at schools also has been associated with deficits in mental concentration, making more errors on difficult tasks, and greater likelihood of giving up on tasks before the time allocated has expired (Evans, Kliewer & Martin, 1991). Furthermore, a study conducted in Los Angeles (Cohen, Evans, Stokols & Krantz, 1986) found blood pressure does not habituate or decline with continued noise exposure over time; that is, children do not get used to noise. In effect, then, the location of schools is of critical importance if they are to be sustainable for effective teaching and learning.

As the studies listed above indicate, noise in the learning environment can originate from within as well as outside the school building and can be both short and

long-term. Both forms of noise can have major affects on student behavior and achievement. Studies have concluded there are significant increases in blood pressure associated with schools being near noisy urban streets.

One of the deficits in achievement scores of students attending noisy schools is that noise interferes with the teaching-learning process, thus resulting in lowering of student performance. Noise may decrease teaching time by forcing teachers to continuously pause or by making it difficult for the student and teacher to hear one another (Crook & Langdon, 1974). Other possible explanations include noise that will influence children's information processing strategies as well as their level of arousal (Cohen & Weinstein, 1981, p. 47).

Building Principles Conclusion:

The above recommendations outlined by the NCEF represent the current best thinking in school design; however, the suggested design concepts are not often adhered to, often due to the educational system. Daniel L. Duke, of the Educational Design Center at the University of Virginia, is involved with research and design of education centers. He suggests that due to the combination of growing, shifting populations and aging, deteriorating educational buildings that the U.S. is in a school construction expansion era. People involved in the educational system, such as

teachers, administrators, parents, governmental officials, and others, are intrinsically involved in the school design phase of school construction. Duke contends that communities across the nation are questioning the structures for learning that are in place inside schools.

Duke further suggests that to build or rebuild our schools without rethinking the experiences that take place within them seems as unwise as revamping teaching and learning without considering new designs for learning environments. Together, these trends create an opportunity to redesign both schools and schooling (Duke, 1998, p. 688). Ann Taylor of the University of New Mexico agrees with Duke stating that "billions of dollars are being spent each year to retrofit, renovate, and build schools in America, and yet these 'new' designs are based on outmoded concepts" (Taylor, 2000, p. 1). Perhaps the saying, "we teach the way we were taught," is applicable as we design buildings based on how it was for us in school. In the architect's design development phase of school planning, the people within the educational system provide the designers with input on how the building should be constructed. The design development phase of asking the occupants of a building, such as the teachers, coaches, administrators; first, "How they want the building to look?" and secondly, "How will the building function?" are central to the design work of school architects (Taylor, 2000).

Why then have high schools been changing very little? With the exception of

the infusion of technology, classrooms have not changed in fifty years. Phillip Cusick explains the concept of an educational system and why the continuation of previous ideals remains true in the design development phase of planning a school building. He states that the educational system is a "discernible and predictable entity, which has a history and memory, a nature and logic; it socializes new members into old ways. Groups and their overlapping and problems and their solutions persist the same way across the schools and across the years" (Cusick, 1993, p. 210). Perhaps the educational system and its "memory and history" make changing schools a difficult venture as the decision makers have been socialized into the "old ways" of how school should work or be constructed, and how the problems, and just as importantly the "solutions that persist across schools and across the years" (Cusick, 1993, p. 210), make significant change to school design difficult. This should tell the public that the system is challenging to penetrate with new concepts if those within the educational system, teachers, coaches, administrators, are the people primarily involved in the design development phase of planning and building new schools.

School Building Design Process

The planning and design begins with community involvement, moves to gaining consensus on a plan, and concludes by executing a final design. Community engagement is part of the process in the development of most school building programs. Community engagement mean involving all sectors of the community in

the planning process, garnering input, and support while developing a sense of community ownership in the project. The community engagement process includes the following:

- Identify unifying values
- Make the process and information accessible
- Develop community ownership
- Develop bond issue support
- Uncover other resources
- Develop a clearer definition of the problem and solutions
- Create political cover where necessary

This process provides a forum for community members to share their insights and concerns directly with the designers. Computer-aided design process is often used to develop design concepts. These sessions can be conducted as brief, intensive work sessions of just a few hours or "marathon" sessions extending over several days. The goal is to create user buy-in and ownership of the design, grounded in the philosophy that people support what they help create.

To fund the building of a new high school, a bond campaign is initiated with assistance provided by the construction manager and/or architect. Both have extensive experience in creating campaigns that will garner public support. Bond campaign assistance includes developing a campaign strategy, which provides the

macro-level perspective and approach to the campaign. Community Engagement happens at multiple levels in the community, including the neighborhood level, to determine accuracy of assumptions made in the planning process. Community engagement also resolves obstacles and determines support for the bond campaign. Community engagement sets the stage for organizing a Yes! Vote campaign, working from the bottom up to develop a contact and information infrastructure at each school building.

The campaign research is completed by independent consultants at the expense of the school district. The campaign theme, message development, brochures, advertising, and fund raising strategies all have to be developed. Campaign strategies such as publicity and getting out the "yes" vote by identifying voters must be accomplished. Strategies to deal with organized opposition also need to be developed.

The school design phase determines the size and scope of the project; this phase is the basis for the project development which follows. The architect provides for extensive work with the planning committee, documentation of the concepts developed, and comprehensive review before submission to the owner for approval. The educational program will establish the amount of space required for each educational function, the relationships among the required spaces, the furniture and equipment required the mechanical and electrical services to be provided, the basis

for determining the cost of the facility, the schedule for completion of construction work, and the requirements for site development.

Schematic design is developed using the approved program as a working document. The architect will prepare preliminary drawings of the general location of all functional elements, their relationship to each other, and their relationship to the site. This exercise will determine the size and character of the facility. Multiple on-site reviews are to identify options. Revised cost and schedule estimates will also be completed during this phase.

The design development stage occurs upon the approval of schematic design. This is when the architect will begin to develop drawings which incorporate structural, mechanical, electrical systems, materials, etc. The selection process involves the user's needs and participation in order to ensure the best value for the dollar spent. Construction documents will be developed upon approval of the design development phase, which require the architect's design team to prepare detailed working drawings from which the project can be bid.

Mechanical/electrical systems take the following factors into consideration: current general conditions, utilization, gross fuel consumption, internal heat gain, annual energy consumption, probable energy costs, probable maintenance costs, investment cost, and probable total owning and operating costs. Results are compared

with similar facilities in the region to illustrate the overall energy savings potential.

The Bid/Award phase requires the architect to respond to questions from prospective bidders and issue appropriate documents to clarify any items prior to bidding. The architectural firms will also review and prepare bid tabulations and make recommendations to the school system moving through the construction process.

Construction administration is the on-site activities that are closely coordinated by the Owner-in-Charge and Project Manager. The Construction Administrator is the on-site representative and has the authority to act to resolve problems and answer questions.

The Project Manager and Engineers visit the site to monitor progress and are available more often as the project requires. All visits and meetings are documented and reports are furnished to the Owner and to the contractors.

As the project nears completion, various manufacturers' representatives come in to meet with school personnel and lead them through the building. In some instances, video tapes will be made available for later use by school personnel. Additionally, the staff will receive instruction and product information on how to operate and maintain the equipment utilized within the facility.

Literature Review Summary

In summary, the national educational dialogue is about improving education on many different levels. Research regarding school environments indicates that students will perform better in schools that are adequately heated or cooled, well lit, have adequate ventilation, and are free of mold and other illness causing bacteria. This ideal educational environment can best be achieved in a new school building and many suburban communities have chosen to provide this optimum learning setting for its students. Stricherz (2000) argues that new schools do not create positive learning situations; rather, it is inadequate school facilities that produce a decline in student performance.

While the above research is concerned with improving student learning environments by improving the school facility, other data suggests that the size of a school can also provide a favorable learning situation. Cotton (1996) reminds us that students perform better academically in smaller schools, have a better rate of attendance, as well as a higher graduation rate. Bill Gates and the nation's governors have embraced Cotton's findings and other small school research by calling for school districts to create smaller high schools of fewer than 1,000 students. However local school districts appear not to be following the lead of the national leaders and are building large, amenity filled high schools that accommodate thousands of students. Therefore, the disconnect between the national educational agenda and

local school districts seems to be primarily the size of America's high schools.

National and state leaders are calling for school reform and have formulated state and national commissions to encourage school districts to reduce the size of high school buildings. In Michigan, the governor created the Cherry Commission to explore the implementation of Gates' and the governor's initiatives. However local school districts do not appear to be embracing the national agenda.

As stated in the literature review above, local districts are building large amenity filled high school buildings for numerous reasons. Districts feel the need to compete for students under the state's school of choice program and new facilities attract new students. As previously mentioned, some superintendents view the construction of new facilities as an "arms race" where schools must build bigger and better facilities to attract students. According to architect Hemmes (2004), new facilities are being touted as the "economic engine of the community" and are used to attract students. Districts need schools of choice students to enroll in their district as the state's foundation grant of approximately $7,000 follows the student to the new school, enhancing the receiving school's operational budget.

Members of the community, school officials, as well as athletic and musical supporters all lobby for the inclusion of school amenities and as previously stated, amenities attract students. These extra curricular and co-curricular facilities are

expensive to build and may prove to be cost prohibitive if districts were to build multiple small high schools with the same or similar extra facilities. We hope to make that determination within this study. As stated previously, this study will explore why the dialogue is so drastically different at the local level from the policy makers' initiatives at the national level.

This research will also attempt to find out why local communities are making the decision to spend money on large, multi-million dollar, amenity-filled secondary schools. Finally, an attempt will be made to describe the educational values that supporters of the new facilities envision in the school. The research will be aided by financial data which connects decisions made to dollars spent and reveals the relative financial value of different segments of the new school.

Now that I have presented, as best as I can, the central issues in the national educational dialogue, I will go to four school districts where communities have actually built new high school buildings and document what actually occurred during the process of building these four facilities. I will attempt to determine if the national educational dialogue is being considered during the planning stage of designing the new buildings, or if it is not a consideration of the school planners. In the process, I hope to determine how much the national dialogue influenced school planning in these four communities.

Chapter Three – Presentation of Data

You have to stand outside the box to see how the box can be re-designed.
Charles Handy

School District A

School district A is located in central Michigan and has a student enrollment of 5,775. The district built a new high school in 2003 at a cost of $62M to the taxpayers of the community. Fifteen members of the faculty and the community who were involved in the bond campaign, the design of the building, and its construction were interviewed. The overwhelming sentiment in district A is that the community is pleased with the new high school; they believe it is highly functional, the community uses it, and the teachers are pleased with the new building.

In district A, the school is truly the center of the community. The "working class" area is a bedroom community for a mid-size central Michigan city. There is not a downtown center in the district; subsequently, the school becomes the focal point of the community, which is what Brad Hemmes (2004) of GMB Architects and Engineers in Holland, Michigan said is happening in suburban communities. He mentioned that schools are being promoted on the basis of their amenities that are extras, such as pools, gyms, auditoriums, technology, athletic fields, team dressing rooms, renovated classrooms, media centers, etc. According to Hemmes, amenities attract families and then attract employers wanting to locate in communities where families want to live. He states that architects, builders, and administrators are

promoting schools as the "economic engines of the community" (Hemmes, 2004).

The new high school is located geographically in the center of the district. To obtain the property to build the new school, the superintendent knocked on the door of an old farmhouse of a family who operated a dairy farm in the community. The 90 year old owner of the 160 acre farm answered the door and after some conversation said she was willing to sell and was happy to do so as she was a former teacher in the district. The district purchased the farm for what turned out to be half price.

Those involved in the marketing of the bond proposal "sold" the new school on the concept of appealing to a broad base of community interests or "something for everyone." The bond proposal included components for the entire community. Those involved in the design needed to generate sufficient support and felt compelled to add amenities such as a pool for senior swims, athletic fields, technology, and entertainment facilities. The inclusion of the additional facilities supports Downs's argument of "utility" or acting in support of personal interest.

School district A also discussed the educational benefits of a new school such as providing its students with the opportunity to compete in the new "global economy" by preparing them for jobs and providing them with the skills necessary for the 21st Century economy. There was also discussion of adding new technology and about having sufficient space for common athletic facilities that were accessible

to the entire community.

There was the sense that students in the new building must prepare for a world that is technologically different; they need to work with technology and interact with it daily. Those involved in the design were compelled to build a school and equip it with technology that will prepare students for the rapid change of the "global economy."

The teaching staff seemed to like and appreciate the new building but also have a sense of realism. The sense that "kids are kids" seems to resonate from the staff. One teacher mentioned, "one third of them, you can teach in a barn and they would learn and one third, always a fight." This teacher believes that the students are not learning more as a result of the new building. She feels district is primarily "blue-collar" and that other factors deterred them from moving forward educationally. However, the number of Advanced Placement courses has increased, as have the number of parents attending parent-teacher conferences, which is currently up to 75%. The district has new students, new housing developments, and new residents as people are moving from the nearby city to this suburban/rural community.

While many of the new students have moved to the community, many are school of choice (SOC) students. School district A has over 600 choice students from the neighboring city district as district A is adjacent to a large urban district. While

teachers understand what the additional funding means to the district, they are also guarded against talking about choice students. They openly discuss the positive effects of additional diversity and that the SOC students adjust to the increased rigor; however, there seems to be some ill-will primarily in the area of athletics. Residents seem to be upset when a school of choice student starts on the basketball team and displaces a resident student. District A can draw students with the new facility, and they do not accept all that apply. Students with a former discipline issue are not accepted. A middle school principal suggested that administrators in the neighboring district would place disciplinary notes into students' files to prevent them from transferring under schools of choice to district A.

There is a new apartment complex adjacent to district A that is still located in the city where many of the school of choice students reside. According to a middle school principal, "Kids from the city want to come here because it's safe. Kids tell me that, 'around here I don't have to always watch my back' and parents like to hear that." There are however, some problems associated with the SOC students. The principal went on to say, "a parent called the other day and said she couldn't get her kid into a class, and she is a resident and she told me, 'it's probably those choice kids taking all the slots."

Teachers also notice the additional students in their classrooms, as a veteran science teacher stated, "It's nice to have an up-to-date lab, but I've got 28 kids,

should have only 24, but the superintendent stuck in 28". This teacher teaches biology, zoology, and field science and appreciates the new building and the technology that accompanies his new room: "We placed sensor cameras out and we've seen deer, turkey, raccoons, and possum." He went on to demonstrate the overhead camera connected to his computer and marveled at the video streaming capabilities, "there is so much out there and it's free." He went on to say, "Yesterday we were discussing nuclear power plants and I brought it up via the web – the workings of a nuclear reactor and showed it to the kids."

Despite some issues with the schools of choice students, there was not one person interviewed who voted against the new high school. During the campaign to build the new school, the "nays" were not mobilized or organized; it appears that after the construction of the new facility those against it are not openly talking about their opposition. Every person interviewed supported the construction of the new building. The old high school was on 35 acres site and the new high school sits on a 160-acre site, which most viewed as a vast improvement over the previous school location.

What is the advantage of the new building that everyone seems to support? It is not lower class size as that has remained basically the same in district A, 28 to 32 students; it is not the academics as the curriculum and staff has remained similar or the same. What the teachers like about the new building is that it is big. It is large, open, and easy to move around in; the hallways are not crowded like in the old

building. Instructionally, it is better for group work and projects as the staff has more room. Classrooms in the old high school were 750 square feet, and in the new building they are 950 square feet with more technology. The increased technology has changed the way some teachers teach as the "kids are doing more projects." Everything is DVD, online, on a computer, or the Internet with wireless hook-ups according to one teacher who said, "The kids don't know what a book is." In his view, the latest technology has become the way teachers teach and the way kids learn. When asked if the new building helps with student learning, he responded by saying, "The new school provides the necessary stimulation and they [students] need the technology and the good teaching to learn." However, for one instructor, "The new school and all really makes no difference"

The athletic director mentioned during an interview that 800 of the fourteen hundred students participate in athletics and that the facilities had to "be there to do it right." He compared what district A did with athletic facilities with what two neighboring school districts built when they passed a bond proposal. These two districts are similar in size and participate in the same athletic conference as district A; subsequently, the residents of district A had many opportunities to view their facilities. He was involved in the meetings when the architects met with the teacher/coaches and according to the athletic director, "whatever they wanted, the architects gave it to them." He explained that the architects said the district had the funds to add to the project by stating, "The district made out on bond rates and on

labor costs," which he indicated is the reason that the architects were giving the coaches whatever they requested. He went on to say, "Every group was thinking of their own area and that's how it was put together." He added that there was a sense of community with everyone supporting each other, "but when all of the coaches get what they want, sure they are going to get along."

A member of district A's board of education reaffirms the athletic director's conviction that there was something for everyone. This board member, and district resident since 1974, stated, "We not only replaced the old high school and the old sports facilities, we added something for everyone." He continued stating that only 25% of the district voters are parents so the board and administration had to appeal to and "sell to everyone, and we did – it's big and nice looking." The board discussed identifying groups who would support the project and what incentive would entice them to do so. They identified groups such as the Lions, the Business Auxiliary, the building trades' people, board members, and promised them something. "If you have 300 band members, you have 600 positive parents," the board member stated. He continued to stress there was something for everyone as the bricklayers, teachers, and contractors, who all live in the district, took a personal interest in the building project as there was something in it for them.

A doctor who is also on district A's board of education has a similar opinion regarding the new school. His three children were all involved in athletics and felt

strongly that the community needed the new school. "It was over crowded, kids could not turn around in there," he stated. "We thought about replacement or add-on or renovation, but the site was too small and the kids had to move around the district to play any sport, and parents were also moving here and there for events." He continued stating, "Parents did not like that." He indicated that space was definitely a problem that the school had to solve, and they spent fourteen months planning and selling the proposed new high school. He stated, "We wanted it to look like a school, you know, with classic lines." He believed the new school was good for the community and that he does not know anyone who voted against the bond proposal. The board member continued, "You can't find anyone who voted against it."

When discussing the new high school in school district A, there is considerable conversation about athletics and athletic facilities, while there is little dialogue about the educational component of the new facility. There has been little talk about academic preparation, college acceptance, competition for entrance into the more competitive universities, and what a new building may do to enhance academic opportunities for the students of the community and for the School of Choice students. This is true of the "community leader" interviewed, who started the 5th grade tackle football program for the district. "I was no leader, I got involved and made a few phone calls, that's all," he stated when asked about the label of community leader given to him by others. He thought it was important, so he got involved; however, he declined to accept the label. The majority of the discussion

centered on athletics. He offered no other ideas or thinking about learning or about education, only sports, athletic facilities, technology, and community growth.

The ninth grade building principal, who was also a college athlete and former coach, brought a similar approach to the bond campaign. He formed alliances with athletic groups as well as senior citizens. "We were in their homes [senior citizens] assuring them that their taxes would not go up," he stated. He continued, "It was a cliffhanger, passing by seven votes after a recount."

There were conversations about education; however, those took place at a different level. The superintendent in conjunction with the architect led discussions with a small group who supported the proposal. Their conclusions were that they wanted an affordable school as the superintendent believed that the community considered itself a "working class" community and they wanted a school that "looked like a school." The superintendent stated, "We walked around [a local university's] old campus and liked what we saw." And they [committee] wanted, "not thin walls, up-to-date technology, and they wanted learning in varied groups, something that would help the kids' future, technology, flexibility, and durability." According to the superintendent, the process of studying, learning, planning, convincing, selling, and building began.

The decision to build a new high school emanated from this small group of

administrators and supporters. The campaign was to have this small group "sell" the idea to a slightly larger group of people likely to vote yes. It did not appear to be an open process as the dissenters were shut out of the decision making. Their process did, however fit with Downs' theory as the conclusion of the small group of supporters were to "sell" their thinking to another like thinking faction, who begins to build coalitions of people who want something from the proposal, while the opposition is being isolated. The objective in this political process is a majority favorable vote. The coalitions within the community that are in favor of the proposal gather support and have the official enterprise or the school district with them while keeping the "no's" isolated as long as politically possible. The vice president to the board phrased their campaign most succinctly when she said, "They went to people who wanted something from the school." The district was able to provide those who wanted something as the interest rates to fund the project continued to go down and construction bids also came in much lower than expected.

The district officials met with the architects to include the desired amenities in the design, such as a performing arts center, an Olympic size swimming pool with a diving tank, and an elevated indoor track. They also had the additional funding to purchase the extras, such as burnished blocks, 950 square foot classrooms, and flex rooms for large group meetings and speakers. According to one board member, "There appeared to be resistance to any cost cutting."

The vice-president of the board was convinced of the need to build a new school when her daughter came home and said, "Mom, you can't even turn around; you open your locker that you have to share with another student, and you bump into someone." The mother was convinced, based on her daughter's testimony, of the need to build new rather than renovate the old high school. She, however, found the process that the architects used to develop the new school to be interesting, "The architects went to the teachers and asked them about the ideal teaching situation, so the staff told the architects what they wanted." She continued, "The choral director told them, a desk here, a wall there, stands and risers here, practice rooms here, and that's how they designed the school, around these idealized settings put forth by the people who were going to work there." She went on to say that the athletic community really helped to get the vote out, and a big reason for their motivation is that all athletics are now in one place and parents do not have to drive to different athletic venues.

The board vice-president was also pleased that the contractors were people from the community and that they assured the board that the building would be done right. She believed it was important that the contractors had a personal interest in the project. She referenced a neighboring school that recently built a new high school with outside contractors and she believes that the school is sinking as a result of not using local builders. The neighboring rival school is the area where most of the upper-middle and upper class people reside. The "working class" community often

makes comparisons to this rival district. The board vice-president continued, "When we played them in football [school name] filled both sides of the stands, and when they had a regional playoff game the next week, they couldn't even fill the stands."

The board vice-president was delighted that the district built a cafeteria large enough to accommodate the entire student body and that the campus is now closed for lunch, "No more car worries." She was concerned when students drove to restaurants at noon because of overcrowding in the old high school cafeteria. She is of the opinion, "Kids need book learning, but they also need to know how to relax" and views the noon hour as the ideal time to relax while at school.

The engineer from the architectural and engineering firm responsible for the project happened to live in the community and had children attending the district schools. He is a serious man with some initial anxiety about the rising cost of building material. He and his colleagues encouraged the district to move forward with the project while supplies were still competitive. He roughly estimated that the building would cost $190 per square foot, and the building has 352,000 square feet. Their former high school that was overcrowded had 220,000 square feet. He liked the building site and the fact that the district bought it for half price. "We had to scrape away six feet of clay and fill it with sand, which water runs though," he stated. The clay was used to build the berm around the new football stadium.

The engineer worked on the project for eight months prior to the vote. His charge prior to the vote was to develop plans based on the district's directive. The district wanted a single building to house students in grades 10-12 with all of the athletic facilities on one site. A large consideration was to have the playing fields in one location so parents would not have to drive five miles to an alternate site. He helped them develop plans, a site, and a rough estimate of $190 per square foot all before the election.

In developing the initial plans, he worked with 50 or 60 people who emphasized the importance of one athletic site, a convenient location, an inviting and aesthetically pleasing building, and something they could "sell" that would solve the overcrowding issue in the old high school. The committee wanted an "entire experience" in a single building. They wanted a "learning environment, with opportunities for kids to learn, flexible spaces so teachers would be more creative, 950 square feet per classroom, a place where kids would want to stay around" and, above all, according to the architect, the committee wanted, "a building that would encourage different ways to teach and learn." When asked if the new structure would improve the learning of difficult subjects such as physics, calculus, and chemistry, he responded by saying, "The building should create a new attitude toward learning, more learning tools, more attention to learning, more space, more aesthetics, and learning should follow." He did not know for sure, but thought the impetus to learn those subjects would change in the new building.

School District "B"

The high school in district "B" is a newly constructed, $42 million dollar facility located in suburban Grand Rapids, Michigan. The design work to determine the actual components of the building took place after a positive vote to fund the project in the fall of 2000. The high school principal is a former athlete and a former coach, which may explain his enthusiasm when showing me the performance gymnasium. He spoke with great pride as he detailed some of the elaborate features within the facility. He indicated that the gym's specifications were designed for a 1,500 student population and has seating for 4,000 spectators. The academic wing was built to accommodate a student population of 1,300, and there are currently 1,100 students attending high school in district "B".

The principal explained that after a $55 million bond proposal passed, $42 million of which was dedicated to the new high school, the actual design work began. "The fine arts people and the athletic people took over," according to the high school principal, as the planning process began to identify specifics of the building. The voting public knew how many square feet would be in the building, how many students it would accommodate, how much it would cost, as well as the basic components of the building such as it would have a gym and not a swimming pool. The voting public was unaware of the many details, such as how many spectators the

gym would seat, or what the locker facilities would look like; those details were developed later in the planning process, which, according to the principal were dominated by the fine arts and athletic people.

The performance gym in district B is very similar in appearance to another highly detailed and visible gymnasium also in the greater Grand Rapids area. District B hired the former athletic director of that highly visible Grand Rapids area school as its new assistant principal. The high school principal indicated that the performance gym has the assistant principal's "footprint" on the facility, as he was instrumental in the design of that facility. The new assistant principal was also a former coach and athlete, and he currently works part-time as a basketball official, which may explain the official's locker room just off the performance gym that has two reclining chairs, a television, refrigerator, and a bathroom equipped with a shower.

The varsity locker areas off the performance gym are configured as a series of individual locker areas with a common shower and toilet area. The thinking behind this facility is that each team will have a separate locker room exclusively for its sport season. For example, in the fall, the cross country team would have its locker space as would the football team. Each would have a separate lockable area, which prevents sharing space in one large locker room.

As the high school principal indicated, the fine arts staff and the athletic staff

dominated the design development process of the building project. The orchestra director was recently named the "Orchestra Director of the Year" in the State of Michigan and, according to the principal, had considerable influence with the design committee. The orchestra teacher was able to persuade the design team to create a separate entrance and a separate parking facility for the fine arts building as they did not want to share an entrance or share parking space with athletics. As a result of his request, the new $8 million auditorium has a separate parking area and a separate two story glass entrance into the performing art center.

A trustee on the board of education stated that the one thousand seat, $8 million dollar auditorium is equipped with current, acoustically refined equipment, a full-fly stage, as well as a lockable band shell that drops from the ceiling. The auditorium seats are plush with custom designed fabric. The space has a set building room, dressing rooms for the actors, and a grand presidium with a black teak stage. She believes that it is one of the finest high school performing arts centers in the United States.

The principal stated that the dollars and the square footage allocation to build the auditorium and the performance gym were made available by eliminating space in other areas of the high school. The media center, for example, contains 4,750 square feet or approximately 1.4% of the school's total square footage. The space contains two computer labs on each end of the facility, which service approximately thirty

students each. The main section of the media center is small and contains large racks of books. According to the high school principal, the media specialist has been in the district for over twenty years and has little influence with the staff. He stated, "She formerly directed a 1950's style library in the original high school. Not having the same political clout as the assistant principal or as the orchestra director, her space was probably reduced," according to the principal.

There is also considerable square footage allocated to other components of the school, most notably in the physical education/athletic training area. Aside from the performance gym, the high school has another full-size gymnasium with an elevated Tartan surface running track, a batting cage, volleyball and basketball courts, 25,000 square feet of locker room space, a weight training facility, and a full set of coaches and trainers offices along with a medical training facility. Just off the elevated running track is the weight training room where there are several different types of weight conditioning machines. The students participate in the "Husker weight training program" according to the high school principal, which is the training series used by the University of Nebraska football team.

Also located adjacent to the weight room and accessible from the elevated running track is the wrestling room, which has more square footage than the weight room. When asked why the weight room, which is used by physical education classes and athletic teams year round, would be smaller than the wrestling room, which is

used seasonally, the high school principal responded by saying, "We have a good wrestling program." The wrestling coach has been employed for over twenty years, and according to the principal, had the political capital to insist that the wrestling room be the larger of the two rooms. The principal recalls seeing the blueprint drawings where one of the second story rooms is larger than the other, and he assumed that the larger space would be the weight room. As it turned out the wrestling program is housed in the larger facility.

According to the chief architect and president of the architectural firm, the design concepts for the $42 million dollar high school were originally scheduled to have all of the "big boxes" on one end of the school. He explained that "big boxes" are the large, high ceiling facilities such as a gym or an auditorium. The original design called for the gyms and the performing arts center to be located on the north end of the complex, with the academic wing located to the south. The chief architect explained that the band director was intensely opposed to sharing an entrance and a parking lot with the "athletic people."

In a series of meetings, the music director was able to convince the design committee to build a separate entrance and separate parking lot for the performing arts center on the south end of the facility. The cost of the auditorium entrance and the new parking area would have been saved providing the district decided to build one entrance and one parking area. "It clearly added cost to the project" stated the

design architect responsible for the design committee work. He continued, "When you add an additional parking lot and that two story entry, the costs go up, but that wasn't a concern for these folks." He went on to explain that the decision to separate the two facilities was made prior to the project going out to bid, so they did not know if they had the funds to build the building they wanted. "As it turned out, the construction bids came in well under projections, and the building really turned out nice. It looks more symmetrical and appealing to the eye" according to the designer.

The Orchestra Director of the Year in the State of Michigan has a slightly different view of the process, as he stated "We, which is me and our booster group, feel very strongly that what we do is every bit as important, if not more so, than what happens at the other end of the building." He was speaking of the athletic and physical education section of the new high school. He continued, "They draw large crowds for their events as do we for ours, what would happen should we host on the same evening? We just thought it was totally the right thing to do, and the board felt the same way we did." He was most complementary of the engineering firm and the citizen's committee engaged in the design and planning process stating, "These people give of their time to do this work and they all took their responsibilities very seriously."

The design team and the citizens' committee were able to develop their vision for the building that eventually became the public relations slogan of: educating the

mind, body, and the soul of the child. This came as a result of the "music people's" insistence of having a separate parking area and entrance to the musical area. The new design provided the committee with the structure that personified their slogan. Educating the mind would occur in the middle of the facility, while the education of the body would happen in the north end of the building in the physical education/athletic area, and nourishing the soul would occur in the opposite end of the facility in the music area. The musical director is of the opinion that the building's configuration is natural and could not imagine it being built another way, "It's a beautiful facility and it all fits; the community loves it."

Upon entering the building, visitors are greeted by a three-story glass entryway with the school store on the left and the 650 seat food court/cafeteria directly ahead. The food court has a ceramic tile floor and students have a view from a three-story, round glass window wall overlooking the manicured campus that is adjacent to a wooded area located just behind the building. There are numerous flat screen televisions mounted to the walls with CNN News or ESPN Sports Center on while students are dining or while not in classes. There is an open stairway leading to the second story weight training area with student art work hanging off the wrought iron hand rails. Students may select their lunch from one of six food courts and enjoy their meal in an area with abundant seating.

The building is technologically current according to a technology instructor

stating, "There are four drop-in stationary computer labs and eight sets of roll-in wireless computer labs that move into the classroom." The stationary computer labs are tiered with the student monitors facing the instructor. The tiered elevation allows the teacher to view student screens at all times. Each instructional classroom is equipped with software that will operate the ceiling mounted LCD projector from the teacher's desktop computer and project images from the TV or from the teacher's computer. There are no televisions in the classrooms as this system serves the need. The high school technology teacher went on to talk about the seventy security cameras in the building that feed into a central hub for easy recovery and an internal television station equipped with a green area to film the student announcements that are replayed over the teachers' LCD projector.

The board of education member who works for an information technology firm was insistent that the committee include the latest in technology. "These kids, including my daughters, will have to enter a world, where if they are not prepared to face the challenges of technology, they will fail" she stated. "I lobbied very hard to have that committee include as much current technology as we could afford, and if we couldn't afford it, I encouraged them to cut elsewhere, because it was just too important." She presented a very compelling and impassioned argument for technology education.

Along with the computer technology within the school, the building itself is

considered a technological wonder as it is a green building that does not burn fuel to heat or to cool the structure. Instead, they use a heat-pump system that extracts heat from the natural warmth of the earth that remains a constant 55 degrees. There are 300 wells with heat-pumps and hundreds of miles of pipes on the property that are used to heat and cool the entire building. Even the sidewalks are heated and free of snow and ice in the winter. Another feature of the building is the smoke extractors that, in case of a fire, will remove all the smoke from the exit corridors assuring students a safe egress from the building.

Members of the board of education also became involved in the selection of student desks. The student desks are not the typical single seat and desktop unit found in most classrooms; instead, district B selected separate small tables and a chair that is not connected to the desktop. The chairs are unique in that they are adjustable to many different positions, depending on the student's preference. The tables may be moved and placed in numerous arrangements depending on the lesson being presented by the teacher. The type of student desk became a point of contention between the principal and the board of education during the building project.

When the high school principal began selecting student desks, in this case, small tables and chairs, he consulted with students and teachers. They all agreed on the arrangement ultimately selected. However, the director of instruction had a different vision of what the students needed to sit in while in class. She brought the

issue to the board of education building committee, which she had access to, unlike the high school principal. She convinced the members of the board building committee that the district should select a more traditional, single unit, connected desktop with a seat. The high school principal was eventually able to select the classroom furniture recommended by the students and staff, but during that process he created considerable animosity between himself, the director of instruction, and some members of the board of education that still existed some eight months later.

As mentioned earlier, the total bond proposal in school district B cost the taxpayers $55 million of which $42 million was dedicated to build the high school. The high school principal indicated that the construction of the building cost $30 million, while $12 million was held in reserve to equip the new complex with furnishings and technology. The principal also indicated that the district received an additional $9 million in interest revenue, but he is unsure if it was spent on the project or returned to the community to help pay down the bond debt or some combination of the two options.

When asked to respond to the whereabouts of the $9 million, the assistant principal indicated that the money was spent on upgrades to the building and to buildings throughout the district. As a result of favorable bids and earned interest, school district B had considerable money left over at the conclusion of the building project. "We had to spend the money at the end of the bond or loose it," stated the

assistant principal. He went on to say, "The department heads upgraded the technology for their department, their furniture, and the cabinets in their rooms." The administrative team was given the directive to make lists of what additional items teachers needed. They were to itemize the list into four categories that included items they: must have, should have, would like to have, and Christmas gift. From that list, the administrative team determined how the additional funds were spent.

"I was like Santa Clause because I was also the tech guy and there were a lot of tech related requests for the extra money." The assistant principal went on to say, "I purchased laptops and PDA's for all the administrators." He continued, "We were looking for places to spend the money, so much so, we built a split-face block concession stand with restrooms for the tennis court area and a $785,000 alternative school off campus, it was an ungodly budget."

The assistant-principal at school district B was instrumentally involved in the design and construction process as he was hired in the fall of 2000 for the express purpose of bringing an expertise to the bond proposal process. As mentioned earlier, the assistant principal was previously employed in a highly visible Grand Rapids area school district that recently built a detailed and well marketed gymnasium in the greater Grand Rapids area.

School district B attempted to pass a bond proposal in the spring of 2000 that

was vote down two to one. The community regrouped and started another campaign with the intention of voting again in November of 2000. According to the assistant-principal, the original design of the proposed high school was a two-story rectangle that few in the community were excited about.

In the late summer, the assistant principal, who was new to the district, along with the principal, led a group of fifty people in a discussion about the new high school. The meetings were off site at a high-tech business location, which enabled the campaign group to see what a potentially new high school could possess regarding technology, upgraded furnishings, and equipment. The former high school design was referred to as "The Box" and the mission of the off-site committee was to improve the design and create excitement within the community regarding a new building project.

Input from the community stated that they wanted a "showplace." They were not interested in a regular looking, two-story, square building without "curb appeal" according to a member of the board of education who served on the original design committee. "The first design was completed by the former principal, and he was from the UP (Upper Peninsula of Michigan), and they have boxes for schools up there," stated the board member.

The assistant principal was hired in the summer of 2000 from a district similar

in size where he served as the athletic director. His former district recently built a new amenity filled high school that was considered a showplace within the area, and he was told that he was hired in part for his involvement and expertise in the building of his former district's new high school. According to the assistant, the community wanted something better than what was presented to them in the spring of 2000.

The committee of fifty people moved away from the box design and started to design a school the community could identify with, according to the assistant. The committee created a vision for the new building that included educating the body, mind, and soul of district B students. Their vision translated into a half-moon shaped, three pronged building, with the athletic and physical education component on the north side, which would educate the student's body. The student mind would be educated in the middle section, which was the academic wing of the half-moon shape, and the southern portion of the facility housed the auditorium and instrumental music wing, which was designed to educate the student's soul.

This vision for the new high school translated into their campaign slogan, which was "Teach the mind, train the body and touch the soul." The committee of fifty began to "sell" this concept of the three-pronged building within the community and according to the assistant principal the community viewed it as a vast improvement over the rectangle box presented during the first bond campaign.

The location where the committee of fifty met also influenced their decision making, as the high-tech business contained the latest technology and furnishings. According to the assistant, the committee was able to see precisely what would be available to a new school with a contemporary design. Armed with a new design, a new concept of educating the body, mind, and soul, and a new perspective provided by the high-tech business, the committee of fifty began to talk with members of the community. They presented the new design as a "showplace" that the community could be proud of and that there were facility components for all constituencies within the school design.

The campaign consisted of the committee of fifty contacting their friends and neighbors and "selling" the new design. "The campaign was a matter of the fifty involved in the original design, contacting others and getting them onboard," said the assistant principal. He went on to say, "The change in administration was what really passed the bond because we were two athletic administrators who looked out for athletics and looked after the band people as well." The summer prior to the November bond vote, district B hired the assistant-principal as well as a new high school principal, both of whom were former athletic coaches. The assistant went on to say that coalitions between athletic parents and music parents were formed as both groups wanted a new facility. There were a series of meetings, with the drawings present, demonstrating the three-pronged facility and the body, mind, and soul theme developed by the committee.

"The vote passed 3 to 1 and the community got a showplace," according to the assistant-principal. However, the bond proposal did not actually pass three to one as it was narrowly approved by 51.3% of the voting public. He went on to say that the architects began working with the department heads and with some teachers on the interior design of the facility. The architects required that the teachers sign-off on the final plan for their department. The teaching staff felt as though they were listened to by the design team when completing the interior of the building. "There was so much money," stated the assistant. The budget for district B's bond proposal was $42M, and they received favorable bids from area contractors allowing the district to upgrade the new high school.

According to district B literature, the new high school contains a fine arts center that seats one thousand people, a 75 foot full-stage fly loft, and "technologically advanced sound and lighting systems." The music wing also contains acoustically sound rehearsal rooms for instrumental and vocal music students, six smaller ensemble rooms, and uniform and instrument storage areas.

The new high school also contains three art studios for 2D and 3D artists, as well as a digital art studio that contains twenty computers that run industry standard software. The school has an applied technology lab with CAD drafting computers, a wood, metal, and plastics labs and a CNC (computer numerical control) machining

lab. Their classrooms have a "command central" where each teacher has the instructional technology to display a large screen projection from a ceiling mounted digital projector for VCR or DVD, which is all connected to the Internet. The school has five full computer labs, and 144 wireless computers that can be accessed throughout the building.

"The athletic wing was the big winner," stated the principal. The main gym features stadium seating for 4,000 spectators. The auxiliary gym seats 300 and is surrounded by an upper level indoor running track. The area also contains an advanced weight training room, an aerobic fitness center, and a wrestling room. The cafeteria seats 650 students and is a two-story, half circle that is glass from floor to ceiling. The view wraps around a natural wooded setting with an adjoining outdoor patio area also available for student dining. The cafeteria contains six serving lines for quick meal service.

The 330,000 square foot facility sits on fifty-two acres with parking for 885 cars. It has 300 water wells at 360 feet for geothermal heating and cooling without a boiler or air conditioning unit. The building also contains 190 miles of electrical wire, 255 clocks, 76 security cameras, three elevators, and 45,000 square feet of ceramic tile.

The principal and assistant-principal also led teams of teachers on trips to

Minnesota and Illinois to visit schools that had built state of the art high school facilities. The two administrators stated that they knew the type of athletic facilities they wanted in the building but wanted to see "what was out there and good for education." He stated that there were some good ideas such as the tiered computer labs where the teacher could view all the student computer screens from one location also the numerous ideas the music people came back with, and implemented into the design of the facility.

School District C

School district C is a suburban district with approximately 8,000 students located near a medium size West Michigan city. The district passed a 1.3 mill request in 2002 to build a new $50M high school which opened in the fall of 2005. This was the district's second attempt at a millage request; the first failed as the election was held a few weeks after the September 11, 2001 attacks on America. The first request was much more comprehensive as it included a new elementary building, a performing arts center, extensive athletic facilities as well as a new high school. The bond proposal that passed in 2002 did not contain an elementary building or a performing arts center, and the athletic facilities were reduced as the district did not build a new, larger football stadium. By passing the $50M high school bond issue, the district's bonded debt increased to a total of $157M.

The former high school was built in 1961 with renovations and additions completed in 1977, 1988, 1990, 1997, and 1998. In 1998, the high school had grown to 246,300 square feet and was converted into a 10-12 grade building as space in the district was at a premium. The student population had grown from 1,442 in 2000 to 1,814 sophomores, juniors, and seniors in 2004. The demographic make-up of the building included 66% Caucasian, 16% Hispanic, 9.5% Asian, 5% multi-racial, .3% Native American, and .1% Pacific Islander, with 20.24% participating in the Federal Free and Reduced Lunch Program.

The district's high school arrangement is somewhat unique, according to the board of education member who sat on the citizens' Task force, in that they have two high schools on a single campus. The bond campaign of 2002 funded a new, but smaller high school to be built on the property owned by the district and adjacent to an existing grade 6, 7, 8 middle school that was converted into a second high school. The bond campaign promised voters that the district would offer the courses and programs they offered with one large high school as students can travel between the two high schools, but with the intimacy of a small high school.

Their thinking followed the small school research, which indicated that bigger is not necessarily better. Cotton (1996) conducted a study suggesting that larger schools are "impersonal to students" (Cotton, 1996.) There is a body of research that suggests the small school will improve education by creating a smaller, more intimate

learning community. Wasley et al. (2000) argues that the smaller school reduces the often harmful effect of student isolation and encourages parent participation, which is the scenario district C was trying to create. According to Vander Ark (2002), studies demonstrate that small schools have higher attendance rates, lower dropout rates, and their students have higher grade point averages. One of the reasons he stated for this difference was that in smaller schools, the conversation is not about controlling the large population of students, but rather on the education that they are getting (Vander Ark, 2002).

Prior to the split, district C's high school housed over 1,800 sophomores, juniors, and seniors, which would make it one of the largest high schools in the state of Michigan. By converting the existing middle school and building the second high school on the same campus, the district was able to create a smaller atmosphere while offering the expansive curriculum only very large high schools are capable of offering, which was the overarching theme of the district C's campaign.

The old high school was once a small school building with a series of "disjointed additions," according the high school principal. He went on to say, "Kids had a hard time finding their rooms in the old high school." As the district grew, additions to the existing high school were placed wherever there was space, "We added a science wing, a performing arts center, multiple classrooms, and the kids would get lost in the building." The new high school has a simple layout according to

the principal, one that students can easily follow, "We have a main street hallway, big boxes on the north side, and the academic wing on the south."

The high school principal in school district C was hired just after the district passed a 1.3 mill request in 2002 to build the new $50M high school. He was actively involved in the design of the building but was not employed during the campaign to pass the bond proposal. He was familiar with the district's Task force that served as the community forum to generate ideas regarding the building campaign.

The idea of splitting one high school into two smaller schools was generated through a series of meetings with the community Task force. According to the principal, the community meetings generated discussion about moving to smaller high schools and that the small school research was the primary reason for this discussion. The Task force wanted to create opportunities for students in extra curricular and co-curricular areas while developing the small school atmosphere.

The committee also wanted to offer students an expansive curriculum available in a larger high school. This was accomplished by building a new smaller high school on the same campus as the existing middle school, which was converted into a second small high school. The principal stated that the committee was very clear that they wanted students to have the ability to take classes in both buildings and

that a wide array of course offerings would be available to students in district C.

The previous high school building was simply not large enough to accommodate the number of students the district had on campus, according to the high school principal. He stated that the building was constructed to house 1,200 students, and when he arrived in 2002 there were 1,500 students in the building. "There would be times when you could not move in the hallways in the old building," according to the principal. He stated that the community was well aware that something had to be done about the overcrowding at the high school. By the time the two new high schools were completed, the old high school student population had grown to 1,800 students in grades 10 -12. Currently they are 1,500 students in one high school and 1,000 in the second. These numbers reflect the addition of ninth grade students into the high schools.

There was, however, the issue of what to do about athletics. The district enjoyed competing with the state's largest schools, according to the superintendent, and the thought of loosing those long standing rivalries and competing against much smaller schools was not appealing to many residents of the district. As a result of that thinking, the district sold the bond campaign on the small school concept while maintaining a single, large athletic program. Students who attend both schools will tryout to play on one basketball team or one football team as they have one athletic program. Aside from the school rivalries and community mindset associated with

one large athletic program, the thought of finding ninety qualified coaches and paying their coaching salaries was of great concern to the superintendent; besides, she went on to say, "I think our kids like to be [school mascot]," further endorsing the concept of one athletic program.

To assist the district with the bond campaign and the development of school structure, a "task force" was formed to develop ideas, options, and solicit information from the community. According to the board of education president, the task-force was composed of approximately twenty-five people, which swelled to over one hundred people just prior to the election. The task-force was composed of interested community members, staff, coaches, band and athletic booster representatives as well as parents with an interest in the proposal.

Many of the community members on this task-force or coalition of interested people served to see the concept of a small school setting with a large athletic program come to fruition; however, many served to see particular venues added to the project. The wood and metal shop teacher, who is held in high regard within the district, joined the task force to have input on the new industrial arts facility. In doing so, they successfully included one of the largest and well-equipped woods and metals facilities in the state. According to the superintendent, the industrial arts program is

larger and better equipped than many industry sites or community colleges. When asked what had to go as a result of the industrial arts upgrades, the business manager responded, "nothing." Just as district A received favorable construction bids and bonding rates, so did district C. The business manager indicated that the school bids came in very favorably as contractors were not busy and were looking for work in West Michigan in 2002; he stated, "We hit the bond market at the right time." The combination of favorable bids and paying less for school bonds resulted in the project having additional funds to spend on upgrades in many areas, not just the industrial arts wing.

The process for distributing the additional funds was decided by the district administration. The teacher or coach with the "most compelling" reasons to upgrade her/his portion of the building received the additional dollars to complete the upgrade. There does not appear to be a process that districts must follow to dispense the additional funds. The unexpected dollars districts receive due to favorable bids, or increased interest earned, or through the cost of securing the bonds, may be spent on the building project at the discretion of the administration and the board.

According to the Michigan Department of Treasury, which regulates the school construction industry, the new high school in district C was built for $163 per square foot, which is considerably less than a comparable high school built in 2003 on the east side of Michigan for $239 per square foot, indicating that school district C

did receive favorable bids as well as limiting their bond expense. When the construction project was completed, the district reported a construction fund balance in excess of $3,000,000. The remaining $3,000,000 was returned to taxpayers by applying the balance towards repayment of the bond debt. District C is calculating that by making accelerated payments, taxpayers will realize an average reduction in debt retirement millage of .45 mills over a four year period.

As a result of the lower construction bids and a lower cost of borrowing $50 million, district C had additional funds to place into the project. Where those funds would be spent was determined by the teachers and administrators with the "most compelling" argument. The additional funds enables the district to construct the art gallery, the additional science labs, and the state of the art industrial arts lab. There appears to be no check or balance on the use of the unexpected funds. Spending the additional bonded dollars is determined by the district administrator and awarded to the individual or program with the "most compelling" argument. The state treasury, or the bonding organization, or the public do not have a say in how or when those funds are spent.

A neighboring school district similar in size to district C, which also has two smaller high schools, built a "Green" building when erecting their second high school. The district C's superintendent and the assistant superintendent for finance

were both extremely interested in the environmentally friendly building concept, so much so, they visited the neighboring school to gather information.

The rival "Green" school was opened in 2002 and houses approximately 1,100 students. The school does not have a natural gas boiler; rather, they heat and cool the building by using a geothermal system that extracts heat from ground water by using miles of pipe and hundreds of water wells. The school has environmentally friendly lights, many windows to produce natural lighting, non-toxic paint, and non-chemical based fabric. These concepts were appealing to the superintendent who seemed committed to build a "Green" building.

When district C began designing the new high school, they wanted to incorporate the environmentally friendly concepts found in their neighboring high school; however, they did not want to simply copy their neighbor's design. District C wanted an advantage over the neighboring district, so they incorporated more stringent environmental concepts and worked to become a "Green" certified building. The design work incorporated the LEED Certification concepts. LEED (Leadership in Energy and Environmental Design) Green Building Rating System® is a voluntary, consensus-based national standard for developing environmentally friendly buildings. To become LEED certified, the design engineers and construction managers must adhere to the LEED standards throughout the design and construction process.

LEED provides a framework for assessing building construction and standards when attempting to meet the environmental goals. The "Green" organization emphasizes strategies for site development, water savings, energy efficiency, materials selection, and indoor environmental air quality, which district C complied with during the design and construction phase of the project in an attempt to gain certification.

The LEED program assigns up to 69 points to each building project applicant for a variety of building features, and there are four levels of LEED certification. To receive a certified label a building would need to accumulate between 26 and 32 points. The 69 points may be earned in six categories: A building project is awarded up to 14 points for a "sustainable site," which pertains to site selection such as an urban setting, Brownfield redevelopment, storm water management, etc. Five points may be earned in the "water efficiency" category for an efficient landscape and innovative wastewater technologies. "Energy and atmosphere" category involves the use of renewable energy sources, and projects may earn up to 17 points. Thirteen points may be earned through the "materials and resources" category by reusing recycled construction materials and use of local and regional materials. The "indoor environmental quality" offers 15 potential points for indoor air quality management and the use of day lighting. Finally, the "innovation and design process" pertains to sustainable strategies that exceed the LEED guidelines and projects are awarded 5 points in this category (Kennedy, 2006).

The superintendent was proud of the LEED certification and noted that the neighboring district did not have to follow the same rigorous standards. The district C superintendent plans to use the new LEED certification as a new competitive concept to discuss with perspective Schools of choice families. Schor's (1999) concept of "competitive consumption" is evident in the district C construction project as they wanted to build a more energy efficient building using more stringent standards than their neighboring district.

Various components of the district C's new high school were driven by personalities, "The science teachers were drawing labs, and the art teachers designed a gallery" according to the superintendent. The superintendent believed that the stronger teachers and teaching departments that were interested in the project were able to have their portion of the building design come to fruition, "within reason," she added. She contends that strong programs, the programs that attract students, are driven by strong people who want to have the best facilities. According to the superintendent, when the stronger teachers were asked by the design team what should be included, "the people with the most passion and most compelling arguments were listened to," and they subsequently received the type of space within the new high school they wanted.

The district was able to provide the "most compelling" teachers with the facilities they desired as the bids came in under budget, and the bond market provided them with a favorable interest rate. The assistant superintendent for finance described

the bidding and bonding process in terms of timing. He stated that in 2002, shortly after September 11, 2001, when America suffered terrorist's attacks, there were few construction projects taking place. Subsequently, those bidding on the project bid lower to secure the work, which was in short supply at the time. The same was true in the bond market as few were engaged in construction bonding programs at that time.

According to the high school secretary and Task force committee member, another concern the Task force addressed was where the ninth grade students would attend school. Due to overcrowding at the old high school, the ninth grade students were placed in the middle school, and the district could not operate a true middle school concept at their middle school. The two high school buildings allow the district sufficient space to return to a 6–8 grade middle school. Currently, the district operates nine K-5 elementary buildings, two 6–8 middle schools, and two 9–12 high schools, which was the desired configuration of the district and the Task force.

The Task force was well represented by the community at large as well as all of the high school booster groups. The principal stated that all factions of the community were well represented, but when the discussion about a new performing arts center was introduced to the Task force by the music, choir, and performing arts boosters, the sense was that the recently constructed theater was sufficient. "The band and theater folks wanted to add a PAC (performing arts center) to the new

building, but the Task force saw otherwise" according to the high school principal. He went on to say that not having the PAC in the building is still an issue today for the band and theater students, as well as with their parents, as they must travel for every rehearsal and performance.

When asked if the new high school buildings and the opportunities they would offer students would be an attraction for School of Choice students, the principal responded by saying, "Part of the discussion was that this would be a draw."

The teachers were listened to, according to the high school principal, "they brought in equipment for teachers to review and listened to what they wanted in the design." There were originally six science labs in the footprint design; however, the principal recognized a need for additional labs stating, "Being a former science teacher, I knew that we needed at least ten labs, we ended up with nine." He mentioned that there were few complaints from the teachers as the architectural firm listened to them and asked them to sign-off on a final design concept. The principal thought the act of signing-off eliminated potential complaints from the staff. To sign-off on a final design concept, it was necessary that the department as a whole agreed to the final plans.

The head football coach was most impressed with the results of the new weight room, "I told the athletic director that we had but one chance in our lifetimes

to do this right, and I think we did." The coach mentioned that they visited other schools and some colleges to see what building a great weight room entailed. The coach felt the pressure to compete in a highly competitive athletic conference and felt the new weight room would provide the necessary edge. The coach stated, "We took three kids to a college tryout, and a conference school had seven players there and they were all strong kids." He went on to say that the students liked and respected the weight facility and as a result "they don't mess with; when you have something this nice – they don't mess with it."

The science department head's analysis of the building process is that he "felt listened to" during the design phase of the building project. He went on to say, "We had a tremendous ally in our former science guy, now principal of the school" speaking of the current principal and former science teacher. The original design called for six science labs, and they lobbied to have ten placed in the building and ended up with nine. He mentioned that they drew how they wanted the rooms to be furnished and equipped; he stated, "We put a lot of time in to get things the way we wanted them."

The principal was of the opinion that the elective teachers provided the most input on the design as they must attract students to their programs. He stated that the art teachers were "very specific with their classroom design" and that the industrial arts teachers were as well, "requesting a mezzanine wood storage area, among other

things." The core teachers, where the courses required only a classroom, had few requests except additional storage in the classrooms.

The superintendent in district C stated that the industrial arts teacher presented the most compelling arguments as to why the new wood shop should be a state of the art facility with current industry-based equipment. As a result of his persuasive argument, the district built what is considered to be one of the best high school industrial arts facilities in the state. It is equipped with machinery that is found in industry and not in a typical high school wood shop.

"They told us to put together a wish list of the equipment we wanted and we thought we would get about half of it" the industrial arts teacher stated. He continued, "We kept asking if there was a budget and they just said, 'put what you want on the wish list,' so we did." After a series of meetings, the superintendent did mention that they developed a potential budget from neighboring school districts that recently built new high schools. Once the rival schools were mentioned as a potential model, the industrial arts teacher began to work on developing a more comprehensive plan to enhance the industrial arts department. He continued, stating that it was a very comprehensive list of equipment totaling about $700,000 in machinery to equip the facility. "As I mentioned, we thought we would get about half of what we requested, but the cut list came back, and they asked us to trim it by just $30,000, so we were very pleased with what we received."

"It seemed to be a foregone conclusion that we were going to build an industry-based woods lab" stated district C's industrial arts instructor. He continued, "We didn't have any opposition to us spending the money on the CNC (computer numerically controlled) equipment. I am not sure who knew that we were given the funds to build the lab. We submitted a wish list to the superintendent and received the okay to order."

The industrial arts woods teacher was able to present a "compelling argument" primarily because of the structure he developed within his academic discipline. He, along with the industrial arts department, organized an Advisory Council composed of local professional woodworkers and small shop owners. Their input enabled district C to move from a traditional high school wood shop to one that provides students with real world experiences in woodworking. During the construction meetings, the advisory council members stated that they were looking for students with the experience on more sophisticated equipment. "These shop owners want students who can operate a CNC molder, and that costs $200,000" stated the industrial arts teacher. "We need to train them for the real world today, not what it was like in woodworking in the 50's" he continued.

Adjacent to the woods lab is a separate computer lab where students program the computers and send "G-codes" to the CNC machines. "This enables the kids to

tell the CNC machines what it is they want the machine to do" he stated. Continuing he said, "They [students] really like this part of the process as they can see (on the computer) what the end product will look like."

In the industrial arts program in district C, students are taught how to operate contemporary equipment. With this training they are able to secure jobs upon graduation, often with the woodworking professionals who sit on the advisory council. Another component the woodworking professionals find appealing in district C's students is the certification program. Students who successfully complete the industrial arts program can apply for a WoodLINKS certificate.

This certificate is recognized by district C's industrial arts advisory board members as a highly coveted endorsement. Students who have earned this certification have developed a skill set they want in their employees. The WoodLINKS Wood Products Manufacturing Education and Certification program consists of a curriculum, curriculum resources, and assessment tools for certification to an industry standard. The program was developed primarily as a tool for high school teachers to enable them to teach current and relevant knowledge and skills in wood manufacturing.

The WoodLINKS curriculum currently consists of two courses, representing approximately 240 hours of instruction in total. Curriculum content focuses on career

exploration and basic skills in wood species identification, manufacturing processes, use of technology, product design, marketing and business skills. Assessment tools were developed to match the WoodLINKS curriculum.

The certification indicates students have met the industry standard for entry-level employment in wood products processing. Certification consists of a three part assessment: an evaluation by the WoodLINKS teacher, a written test set by WoodLINKS, and a Practical Skills Checklist. A student must score 70% overall to be certified. As a result of the industrial arts instructor involvement with the WoodLINKS certification process, he has added relevance to his curriculum as students are often offered employment after graduation.

When asked if students are transferring to district C as a result of the industrial arts program he indicated, "Yes, we just had three kids transfer from (school name) because they don't have a woods program at that school." He believes that once students and parents become aware of the type of certificated, industry-based program that they offer in district C, students will begin transferring under the schools of choice transfer program. He went on to say, "Our program is only a year old now, once the word gets out, we'll have kids transfer."

The metal shop teacher felt more strongly. "Absolutely we have kids come to our school for our program," and the numbers of students who sign up for the industrial arts classes substantiate his assertion. "We had 1,200 kids signup for our

classes. We have five teachers and can accommodate only 800, so we had to turn 400 kids away," according to the metals teacher. He believes another reason students are attracted to district C is the articulation agreements the industrial arts department has with area colleges. His students can receive dual credit in both high school and college if they attend a college where they have negotiated an articulation agreement.

The metals instructor also believes the staff of district C was actively involved in the campaign as well as the design of the facility, "We called the parents of the kids in our seminar class, it only took about twenty minutes or so, but it helped get the support of the parents." He also believed he was instrumental in the design process, particularly in the blueprint of the metals shop, "They said, 'Dream for the Cadillac,' so we did, and they only scaled us back a little." "We wanted each shop to be the size of a gym" he stated, which is nearly the case as each industrial arts facility has 5,400 square feet of floor space and an additional 2,000 square feet of storage.

The metal shop teacher acknowledged that the process was not an elaborate series of meetings to determine what the facility would look like, but rather one meeting and a response from the design team. The industrial arts team presented their "Dream for a Cadillac" concept to the architects. "It was months before we heard from them again, and when we did, the size of the shops were okay with us," he stated. "We thought we would continue to meet or negotiate if you will, but it was a one shot deal, and they told us what we had to work with; we actually liked what they

brought back" he continued. "I don't know where they got all the money, but we were happy with the square footage they gave us" stated the metal shop teacher.

Another concern of the industrial arts instructor was the size of the school's hallways. "When we visited other new schools I took a tape (measure) and measured the halls. The hallways in our old school were way too narrow" he stated. "Nowadays, you have to account for an extra foot for each kid because they all wear backpacks that stick out into the hall" he declared. He felt listened to as he stated, "We got the architects to add space to the halls, and all the teachers liked that we got that done."

The head custodian was of a similar opinion, "the kids look after this place and don't disrespect it like they did in the old school." He went on to say that the size of the school had a lot to do with how the students behaved, saying, "they aren't on top of one another and have room to move." He felt larger hallways, the additional space, and the areas near the cafeteria where students congregate helped the students respect the new school, "Yeah, they really like it here."

School District D

School district "D" is located in a university city located next to a large urban center. The district's old high school was built in 1957 and housed 1,800 students. School officials, fearing declining enrollment, felt they needed to upgrade their high

school facility to compete with two neighboring suburban districts that recently built multi-million dollar high schools on large tracks of land. District D is in close proximity to the urban center and has smaller older housing, which was not attracting new families. Additionally, area realtors were not recommending the district as there were recent incidents of unruliness by university students which further discouraged families from relocating to the district.

The district employed 55 fewer teachers than it did just ten years ago. The new superintendent decided to address the issue of declining enrolment. He found the old high school to be energy-inefficient, physically unattractive, and staffed by too many old and expensive teachers, as he said, "Old is not attractive." His willingness to address the issues was applauded by the board of education as they referred to him as "a visionary leader." He identified the issues in his words as "people, plant, and program." One of the first programs the new superintendent implemented was to aggressively recruit students from the nearby urban district. In a short period of time, school district D was composed of over 20% School of Choice students from the neighboring central city district.

The superintendent identified many concerns to be managed, and addressing the old high school was but one of many issues to be dealt with. He believed that the teachers had "to change the way we teach," which to him meant that the school should be "geared around the client, not around the teachers." Several were in the

works simultaneously as the new superintendent began to implement his agenda. District D sold one of their declining enrollment middle schools to the city to be used as a community center. Next, he proposed building a new high school, renovating the remaining middle school, and purchasing of a vacant church to be used as the new central office. The proposal was for $80 million, and it was soundly defeated.

The proposed new high school was to be placed on the site of the present football stadium, which would change the location of their traditional field. It was explained that the athletic people were not happy with loosing the long-standing tradition represented in this particular football stadium, so they voted against the proposal. Some members of the board of education who had difficulty understanding the "life's glory" of football were dismayed by the defeat. Also, according to other supporters of athletics, "They were trying to ram it onto us," and there was a strong undercurrent of resentment toward that particular approach.

The superintendent, understanding this, changed his approach and asked the people who voted it down what they would support. Those in the community agreed that the high school needed extensive work to compete with the neighboring suburban districts, so they supported a "renovation" of the old school, which was approximately $10 million fewer dollars than the proposed new high school. After considerable discussion, another bond proposal was placed on the ballot for $66 million. The high school renovations would cost the taxpayers $49 million, the

central office renovation was $5.5 million, the middle school received $16.5 million in upgrades, and the district would build a $6 million dollar high school pool.

According to the superintendent, he solicited the help of the people who defeated the first proposal and was able to pass the renovation proposal with their assistance. With the funding in place, the board of education formed a "building committee" composed of citizens, students, parents, teachers, and administrators who would design the renovation of the high school.

The chief architect and the school officials developed a strategy to promote the new high school construction project. Their message was "Keep what we have", which was identified as strong school tradition with high academic and athletic standards. The high school renovation committee developed five strategic goals in an attempt to convince the public of the need to re-model the school. The goals are as follows:

- solve the current building issues;
- create a building that made sense for all students;
- create a building that would allow organizational change for future use;
- create a safe, healthy, and an orderly environment;
- create an environment that supports learning.

The chief architect stated, "When we build high schools, parents want to see the project starting as soon as they pass the bond. They want us to start building even

before we know what we're doing." The superintendent, however, had different plans as he resisted the pressure to start construction and took 16 months to break ground. The superintendent wanted to, in his words, "educate, involve, and consult with students, parents, teachers, interest groups and whomever, to make sure they got the school they wanted." He went on to say, "The district will get a school that will last 50 years, just like the last one."

The next step was a series of meetings with the district building team and the six-person architectural team, which presented various ideas to the district team. The superintendent presented a number of concepts he liked personally as well, such as the "zoo house," which was a city high school near the zoo in Minneapolis. In the zoo school, they built flexible classrooms where the walls could open and close to accommodate small teams or groups up to 100 students. He went on to talk about rooms being bigger not only because the "kids are bigger", but to accommodate the type of flexible rooms he described in the zoo school.

The superintendent and the building committee encouraged the architectural team to make the spaces larger as "Big kids, flexible space, and technology all take space." He continued stating that elementary classrooms are now being built with 900 square feet rather than 750 square feet, and that high school classrooms are now 1050 as opposed to 900 square feet. The old gym in school district D's former high school was 84 feet long, while current gyms are 94 feet long which is equivalent to the size

of college and professional gyms. The message of size was strongly conveyed to the architectural team as the old school was 200,000 square feet, and the new one is 350,000 square feet and houses one-third fewer students. The former high school housed 1,800 students, and in the new, much larger high school, there will be fewer than 1,200 students. The superintendent expressed concerns about the larger building costing more to operate and those operating dollars coming out of the district's operational fund, or their per pupil allowance from the state, and not bond proceeds.

The architects continually used the phrase "what's best for kids" and the answer was always "bigger and more." The chief architect was of the opinion that bigger spaces equated to more opportunities for students and believed that the superintendent was a "visionary leader who was not going to simply warehouse the students." The district committee had four different plans or variations of plans from the architects to consider. While at the same time, they held hearings with groups of people who wanted various components added to the facility. Everyone had a request. The teachers wanted quiet classrooms, air conditioning, and more storage space; the arts supporters wanted a bigger and better auditorium and more musical practice rooms; the science teachers wanted larger labs adjacent to their classrooms. The athletic coaches wanted a pool with a diving tank, a practice football field, and a place for girls' softball to play.

Technology was also a request of the teachers as they wanted "smart boards" in

their classrooms so they could work on their computers and display its content on their smart board for students to see. The teachers also wanted larger spaces in the classroom as the administration was encouraging them to have students move around and participate in projects and move away from the "sage on the stage" form of teaching. "The role of the teacher today is to engage kids in projects, groups, and opportunities for kids to practice leadership" stated the high school principal. One computer teacher wanted shorter rows of tables that she could see over as she did not want the students in the back of the room emailing each other while in class. While the other computer teacher, who was a young man, wanted the students to be able to do what they would do in the real world and felt it was his job to prepare the students for the real world.

The school ended up being a mix between the abstract goals of the committee and the particular requests of the various groups. What the teachers wanted was included into the design of the building. What the teachers and interest groups wanted they received. There are three music rooms, a large auditorium with an additional "practice auditorium," an Olympic size swimming pool with a diving facility, a professional size basketball gym, an indoor track, an auxiliary gym, and the latest technology. Those involved in the process described it as "proceeding smoothly" as the money was there, the committee was doing what the various interest groups wanted, and the superintendent and the architects were able to figure out how to make the various requests from the interest groups happen.

There is an underlying component at work in the design of the building as the administration clearly wanted to move away from the "sage on the stage" type of rote learning. They did not want the teachers to engage in lecture, the skill and drill memorization of facts approach to education, as they prefer to have students involved in group work and projects. According to the principal, "bigger schools with more options offer bigger kids more choices." The larger numbers of offerings expand options for students and the notion that whatever the child needs for his or her education, the school should provide it. As one teacher mentioned, "the diversity of school should match the diversity of life."

The teachers are concerned about the continuation of the school's academic excellence primarily due to the school of choice students who do not have the same academic ability or social capital as district D students. As one teacher stated, "The choice kids are not up to the (school name) kids." The same teachers who complain about the choice students also admit that the district needs the $7,000 each choice student brings to the district. The superintendent is of the opinion that the district needs to attract students, and he plans to entice them with curricular options, a new facility, and academic excellence. Last year, district D's high school had 22 National Merit Scholars, which is considerably more than most high schools, yet he feels compelled to build a new facility to attract and retain students.

One of the options the superintendent wanted for students was a media center that functioned like a college media center/union or a facility similar to an Internet cafe where students could drop in and use the Internet for research. The teachers were skeptical and believed the students would use a situation like that to email their friends; "the 21st century version of passing notes in class," according to one staff member. When asked if students would do research online, one technology teacher responded, "No, they email their friends in language they make up such as 'UR2 much.' They are into sight, sound, and color – not imagination." In the technology teacher's opinion, the technology was not enhancing the intellectual or academic component of school. The superintendent would like to do more with the new facility and have the school function as a "community center, 24-7, with opportunities for community arts, exercise facilities, even a wired coffee shop."

Down's theory of "utility," or the concept that people will act in their interest, is certainly true in district D, as the superintendent and the building committee provided people and groups with most of what they wanted in the building project. Down's stated that "people support a government [school district] when they offer them what they want" (1957). The people involved in district D's design process told the administration they wanted a music facility, a pool with a diving tank, the football field of their choice, technology, and open space. Whatever was requested from the government, in this case the school district, would be given to the people, providing the vote is successful. The bond campaign and school design process was a quid-pro-

quo in that the district received what it wanted and the people involved got what they wanted.

Amidst the philosophy of meeting all needs of the voters, no alternative views were presented during the design/build process. No one is saying the district must build a smaller school that will provide students with a basics of education, that perhaps the academic component is secondary to the activities provided by the new amenities within the new high school. The superintendent believes, "Put as much as you can out; let the kids take what they will; the diversity of the populace has to be matched by the diversity of offerings." In district D, it was all about bigger, better, more, and at the core is the assumption that a district should offer as much as its diverse population would like.

The school of choice concept is also at play in district D as it is competing for students; the new amenity filled building is the draw. The district is willing to offer the components that students would like to see in a new high school building, which does fuel what was referred to earlier in this study as the "arms race" or districts having to compete for students with a new facility. The term "arms race" was a phrase originated by a superintendent who felt compelled to build a new high school in order to compete for school of choice students.

A final observation of district D is that the building committee wanted an

"attractive" school, one filled with high end amenities. The driving point behind attracting school of choice students was the attractiveness of the new school and the amenities offered to students, which seems to support the argument that quality is defined by amenities rather than academic excellence. Without the new amenity filled high school, district D was still able to produced 22 National Merit Scholars; however, school leadership felt compelled to build the new building to compete for new students. In the "arms race" era, school quality seems to be defined by new amenity filled facilities and not the quality of a school's academic performance.

Budget comparisons

As mentioned in the proposal of this study, financial statements were examined to determine how funds were allocated and to which component of the four facilities. The United States dollar was used as the comparative measure. The data determined the community level of importance given to the academic components of the new high school and how much is dedicated to the non-academic "amenities" of the school. A widespread belief in the United States is that the dollar is considered the universally accepted means of determining value. The data demonstrates that the facilities in which a community decides to place its monetary resources are considered significant and valued by the school district.

The value that the four communities placed in the non-academic "amenities" was at question, as the study attempted to determine if the four communities place

greater value in the "amenities" or whether they valued the more traditional school components associated with student learning. After reviewing the building plans, the data reveals a correlation between the school district's allocation of dollars and the non-academic facilities.

There are two ways to analyze this data. The first is by doing a square footage comparison and the second method is by doing an actual cost comparison. The square foot comparison takes the total square footage and divides it into the cost of the building, which provides a square foot cost. This comparison provides general data regarding the project, however various components of the building all cost potentially more or less depending on the facility. For example, a performing arts center has specialized lighting and sound equipment as well as theater seats, and many extras that will increase the cost of the facility. A classroom does not have the specialty components and subsequently will have a lower actual cost. In this study, I have calculated both the square footage comparisons along with actual costs of the amenities within the buildings.

The newly constructed high school in district B contains 273,175 square feet and cost the community $42 million dollars to construct, which places the cost of the building at $153 per square foot. The "classroom groupings" are designed for 1,300 students and the "core facilities" or the amenities, have a 1,500 student capacity.

District B erected a 22,000 square foot performance gymnasium with new bleachers, performance lighting, sound equipment, a regulation size basketball floor, and related athletic equipment at an actual cost of $4,050,000. The square footage cost of the gymnasium, with the related equipment is $184 per square foot, which is $31 per square foot above the average cost of the new high school building, which as stated above is $153 a square foot.

While the performance gym was considerably more expensive than the average square footage cost of the high school, the auxiliary gym proved to be a less expensive space to build. District B built an 11,000 square foot auxiliary gym with a 2,115 square foot elevated jogging track around it at an actual cost of $1,875,000. This places the square footage cost of the auxiliary gym at $143 or $10 per square foot less than the average for the high school, making the auxiliary gym less expensive space to build.

District B also added a 4,000 square foot weight room at an actual cost of $1,250,000, which includes the new weight equipment, placing the square footage cost of the fitness center at $312 a square foot. The weight room proved to be expensive space, as the $312 square foot expenditure more than doubled the $153 average square footage cost of the building.

The actual cost of the three facilities in the indoor athletic wing described

above was $7,175,000 or 17% of the total building project. The athletic wing analysis only included the three facilities mentioned and did not include locker rooms, the wrestling room, coaches' offices, training rooms, entryways, or access hallways.

Another priority for district B appeared to be in the music and performance arts programs. Their performing arts center has seating for 900 with 600 on the main floor and another 300 in the balcony. The actual cost of the performing arts center, including dressing rooms, scene shops, storage, a full stage with a fly loft, a loading dock, rehearsal rooms, theatrical equipment, etc is $11,250,000. The auditorium and surrounding support facilities contain a total of 20,820 square feet and cost the district $540 per square foot to build. This is by far the most expensive space in the building as it is more than three and a half times the average square foot cost of the building. The music and performance wing cost of $11,250.000 is 27% of the building budget for district B.

District B allocated 59,935 square feet of space to the four facilities listed above with 22,000 square feet in the performance gym; 13,115 square feet in the auxiliary gym and indoor track; 4,000 square feet in the weight room; and 20,820 in the performing arts wing. The total square foot allocation for the academic classrooms is 48,100, almost 12,000 square feet less than the three athletic facilities and one musical facility listed above. The 48,100 square feet in the academic wing of

the new high school is composed of 37 classrooms in the language arts, journalism, foreign language, mathematics, and social studies areas containing 33,500 square feet or approximately 900 square foot per classroom. There are an additional 9 science classrooms that are larger and containing 14,600 square feet of space, totaling the 48,100 square foot of academic space.

The actual cost to build a classroom is considerably less than the performance arts center and the athletic facilities listed above as the components within a classroom are not as extensive. A 900 square foot classroom cost district B $125,000, or $138 per square foot, which is $15 per square foot less than the average $153 per square foot cost of the new building.

The data suggests that priorities for school district B appear to be in the physical education complex, the indoor athletic facilities, as well as the performing arts areas. A very similar story emerges in all four districts within this study, as each built considerable physical education/athletic facilities and major performing arts centers with accompanying musical areas. The exception within this study is district C as they chose not to build a new auditorium. The decision was made due to the fact that a performing arts center was added to the former high school eight years prior. District C did, however, add a complete athletic/physical education wing to the new building.

As part of its bond proposal, district D built a swimming pool at an actual cost of $6,028,994. The pool contains 14,400 square feet including 4,000 square feet for spectator seating and the required electronic scoring system and large display monitor. The square footage cost of the swimming pool is $418 per square foot placing swimming pools as some of the most costly facilities to build within a high school building when compared to the average square footage cost of $153.

The nature of the facilities in the athletic/physical education areas and the musical wing of schools require additional space. That being said, the majority of the conversations about planning and designing the new building appeared to focus on the amenities as opposed to the academic portion of the building. Each district spent considerable time planning and debating the amenities of the facilities, while the academic portions of the new schools seemed to be a foregone conclusion not worthy of profound conversation. The impression was given that there was little interest in the process of student learning or education, rather the interest seems to focus on sports, athletic facilities, technology, and community growth. There has been little talk about academic preparation, college acceptance, and what a new building may do to enhance academic opportunities for the students of the community and for the school of choice students.

In summary, district A built all of its outdoor athletic facilities in one location to appease the spectators within the community; district B had considerable debate over

a musical wing entrance and parking area separate from the athletic area; district C built a competitive weight room and performance gym; and district D could not build where originally scheduled as it would disrupt the tradition of the existing football stadium. The majority of the discussions were continually about athletics or musical facilities. District A and B did hold conversations about the importance of adding adequate technology to the building, which is considered an academic area; although non-traditional academic, they did engage in this pseudo academic conversation.

Voting Patterns in Bond Elections

Communities approve multi-million dollar bond proposals to build new high school buildings, but as the data is analyzed, the reality is that few are involved in the voting process and even fewer in the design of the new building. The data suggests that an incredibly small percentage of the voting public are engaged in the design and building process, and the majority approving the bond request is not a representative majority of the community.

In our study, district C included the most community members in the design phase of the new high school bond proposal as their Task force swelled to over 100 members near the time of the election. District B met on several occasions with approximately 50 community members when they were attempting to create a vision of the new building.

The decision to build a new high school in district A emanated from a small group headed by the superintendent, members of the engineer firm hired to design the building, and a few community members who supported the proposal. The district's bond campaign was to convince the superintendent's small group of supporters of the merit of the design, who in turn would "sell" the idea to a slightly larger group of people likely to vote yes and build a constituency from that base of supporters. District A's campaign did not appear to be an open process as the dissenters were shut out of the decision making.

The superintendent in district D solicited the help of the people who defeated the first bond proposal, which was a proposed newly constructed high school. That proposal was soundly defeated, and with the help of the voters who voted against it, the district was able to pass a bond to renovate the existing high school building. The building committee composed of citizens, students, parents, teachers, and administrators were engaged in the design of the renovated high school. The chief architect, the building committee, and the school officials developed a strategy to promote the renovated high school construction project, which was "Keep what we have" that was identified as strong school tradition with high academic and athletic standards. The building committee was composed of a relatively small group of citizens.

The data suggests that when the voting public decides to approve a bond proposal, the actual number of yes votes cast is an extremely small percentage of registered voters and an even smaller number of community members. The voting numbers in the four school districts are as follows:

District A Voting Patterns:

- Number of adult citizens in the school district – 26,078
- Number of registered voters in the school district – 16,256
- Number of voters participating in the high school building bond election – 4,893
- Number of voters who voted yes in the high school building bond election – 2,450

The percentage of those approving the multi-million dollar bond proposal is 50.07% of people who voted in district A's election, which in tangible numbers is seven people more than those who voted no. The percentage of those approving the multi-million dollar bond proposal is reduced to 15.07% when compared to those who are registered to vote in district A but chose not to vote in the election. The margin of victory is reduced further to 9.3% of the community approving the bond proposal when comparing the yes voters' margin of victory to the total number of adults in the community. The reality is that less than 10% of the adults approved the $62,000,000 bond proposal to build the new high school.

In District B the results are very similar:

- Number of adult citizens in the school district – 15,093
- Number of registered voters in the school district – 11,180

- Number of voters participating in the high school building bond election – 4,066
- Number of voters who voted yes in the high school building bond election – 2,089

In district B, the percentage of those approving the multi-million dollar bond proposal is 51.3% of people who voted in the bond election, which in tangible numbers is 112 people more than voted no. The percentage of those approving the $50 million dollar bond proposal is reduced to 18.6% when compared to those who are registered to vote in district B but chose not to vote in the election. The margin of victory is reduced further to 13.8% of the community approving the bond when comparing the yes voters' margin of victory to the total number of adults in the community.

District C Voting Patterns:

- Number of adult citizens in the school district – 55,684
- Number of registered voters in the school district – 27,525
- Number of voters participating in the high school building bond election – 6,393
- Number of voters who voted yes in the high school building bond election -4,180

The percentage of those approving the bond proposal in district C is considerably larger than the other districts as 65.3% of people who voted approved the bond proposal. The percentage of those approving the multi-million dollar bond proposal is reduced to 15.01% when compared to those who are registered to vote in district C but chose not to vote in the election, which is similar to the other districts within the study. The margin of victory is the smallest of the other districts as only 7.4% of the community approving the bond proposal when comparing the yes voters'

to the total number of adults in the community. The reality is that 7.4% of the adults approved the $50,000,000 bond proposal to build the new high school.

Voting Patterns in District D:

- Number of adult citizens in the school district – 46,491
- Number of registered voters in the school district – 31,901
- Number of voters participating in the high school building bond election – 2,454
- Number of voters who voted yes in the high school building bond election – 1,747

The percentage of those approving the multi-million dollar bond proposal was 73.9% of the actual number of people who voted in district D's election. The percentage of those approving the multi-million dollar bond proposal is reduced to 5.4% when compared to those who are registered to vote in district D but chose not to vote in the election. The margin of victory is further reduced to 3.7%, when comparing the yes voters' margin of victory to the total number of adults in the community.

When the data within this study is analyzed, the conclusions are obvious that a small percentage of the public, on average less than 10% of the adults within a community, have the ability to influence the outcome of an election. In district D, 3.7% of the adults in the community approved the bond, and the elections within this study were to approve multi-million dollar, multi-year commitments to fund the construction of a new high school building. The system is designed to allow a small percentage of organized voters to approve a bond to build a school, providing they

have one more vote than the comparatively small, often unorganized group of community members who do not endorse the new construction.

Chapter Four – Concluding Observations

"Never doubt that a small group of thoughtful citizens can change the world. Indeed it is the only thing that ever has."

Margaret Mead

The purpose of this study is to describe and explain the process school districts in Michigan go through to build a new high school building. As I gathered and analyzed the data regarding the new school construction process, I formed conclusions based on the work of three theorists and have reached some conclusions about the current process of building a new high school. The theorists help explain the action of those involved in the progression of building a new, multi-million dollar high school.

The first and most prominent theory emanates from Downs, who believes that rational people will act in their best interest, which he refers to as "utility interest." The concept of "utility interest' is exhibited by many of the people involved in building a new high school. "Utility" is often motivated by a need to "satisfy ones needs" according to Downs (Downs, 1957, p. 27).

Downs states that, "rational behavior is directed primarily toward selfish ends" (Downs, 1957, p. 27). The term "selfish," Downs points out, means that people act rationally when they act in ways that will satisfy their needs. He continues, stating that citizens are likely to support government actions if they see elements of

that action that will satisfy their needs. In the literature review, I discussed how school boards are and function as a governmental agency. When a school board decides to present a bond proposal to the community, this is considered a governmental action as each school member is a publicly elected official. Those in support of the governmental action will join others who have similar interests and want to see that a desired component of the facility is included in the bond proposal. This group constitutes a "coalition" which Downs defines as "a group of individuals who have certain ends in common and cooperate with each other in order to achieve them" (Downs, 1957, p. 24).

Downs' theory of "rational behavior" may be one of the reasons Michigan and the United States are building large, amenity filled high schools, which is contrary to one of the national educational agendas of building smaller more intimate high schools. The large high school buildings may be composed of specific facilities as a consequence of people acting in their personal interest. For example, if a diving coach presented a compelling argument and swayed opinion to add a diving tank next to the swimming pool, the current system would generally support such a request. It was present in the data of the four school district examined that the districts needed to provide a particular component of the new high school facility. These components were requested by an engaged voting public, such as the diving coach example listed above. This phenomenon may partly explain the disconnect between the local agenda of building large amenity filled high schools and one of the national educational

dialogues, which is calling for a change in the size of high schools to smaller facilities where students can connect with classmates and faculty.

Sited earlier, the February 2005 National Governors' Conference called for smaller high schools. Cotton's 1996 study developed an ideal high school size of fewer than one thousand students, and suggests that larger schools are "impersonal," which he considers harmful to students (Cotton, 1996). Other research suggests that small schools will improve education by creating a smaller, more intimate learning community. Wasley et al. (2000) argues that the smaller school reduces the often harmful effect of student isolation, encourages parent participation, and reports fewer disciplinary issues and fewer instances of violence. However, in the four districts examined, the trend appeared to build large high schools, as school administrators were providing the voting public what they want in a school building in order to garner sufficient votes to pass the bond. Downs' argument that the citizens are likely to support the action if they see it in terms of their personal interests was evident in the data.

The research data also demonstrates that in the process of building a school, some will join others within coalitions and attempt to influence the building in ways that satisfy their needs. Or, in the economic terms Downs uses, coalitions will be attempting to obtain "utility income" from the generalized effort to create a new school (Downs, 1957, p. 37). The study considers Downs' theory to be the most

important as the other behaviors emanate from Downs' thinking. The data demonstrates that when people act in their best interest, they may also be motivated by a secondary method of action, which the other two theories will attempt to explain.

Aside from satisfying personal needs, such as building a coalition to construct an auditorium because a sibling is in the orchestra, there are other motivations such as civic pride or "keeping up with the Joneses" (Duesenberry, 1949.) The second theory presented is the social comparison theory and its manifestation of the need to "keep up." This concept was developed by Juliet Schor, a Boston College economist whose term for "keeping up" is "competitive consumption," the idea that spending is in large part driven by a comparative or competitive process in which school districts try to keep up with the building norms established by other districts who have built new high school facilities near them or with whom they identify. She refers to these rivals as "reference group" (Schor, 1999).

My data indicates that districts acted competitively with neighboring schools and that competition is often to compete for students. The "competitive consumption" theory becomes increasingly important when Michigan's school of choice program is factored into the process. The Michigan schools of choice plan forces schools to compete with neighboring districts and they often do so by building new amenity filled high schools to attract and retain students. Districts must "Keep up with the Joneses," and to do so, they often build trophy high schools or potentially

risk losing students to neighboring districts as funding in Michigan follows the student to the new school.

The third theory explored in this study is the concept of "clinical authority" (Lukes, 1974; Stone, 1988, p. 46), which is a method of thinking where practitioners, or those within a particular field, have greater knowledge about a discipline than the general population. The term "clinical authority" emanates from the medical community where physicians are viewed as having a specific knowledge and subsequently the "clinical authority" to diagnose an illness. The concept of "clinical authority" is also a factor in education as district administrators, boards of education, and other school decision makers are viewed as having a specific knowledge about education and subsequently the ability to influence or persuade their constituents. School officials are granted this authority by the community as a result of their perceived expertise.

School officials, given Downs' theory of utility, presuppose that decision makers will make choices in their best interest. The data demonstrates that school officials make decisions based on their interest. For instance, a high school principal who was a former science teacher convinced the facilities planning committee of the need for additional labs next to the science classrooms. Since he is viewed by the voting public as an expert or possessing "clinical authority" (Lukes, 1974; Stone, 1988, p. 46) on educational matters, the community considered his recommendation to be a

sound educational practice due to his perceived expertise in the area of education.

While the theorists Downs, Schor, Lukes, and Stone help explain the some of the actions of those involved in building a new high school, the data also produce a notable conclusion about the current process of building a new high school. The procedure involved in initiating a bond campaign to build a new high school includes an architect's rendering of what the building will probably look like without specifics of the building included. In essence, the bond proposal is presented to the voting public without specificity of the building.

The architect will provide footprint drawings and an artist's rendering of the building that are subject to change after the bond vote as school districts do not want to expend the funds to create detailed drawings. Architects are also unwilling to spend the money to provide comprehensive drawings prior to a successful bond vote. The detailed drawings will be developed after the voting public approves a bond proposal and a specific dollar amount. As a result, the community votes on a limited set of information about the building.

Once a bond proposal has been approved by the voters, the architectural firm begins a series of meetings with the occupants of the building to determine precisely what components of the new facility they would like included in the complex. The specific components of the building are determined by the district administrators,

teachers, and often a community building committee. The data produced notable results of spending by district administrators and the building committee as they are allowed to build the type of facilities they choose in the building, providing they stay within budget.

There is one safeguard to excessive spending, but it occurs prior to the bond vote when a district secures permission from the State Department of Treasury to build a new school building. To obtain treasury approval, the district and their architects must submit student demographic data, projected growth data, and current district facilities data. This information is used by Treasury to determine a need within the district to build a new school. The Department of Treasury will count the number of current students, projected student growth, and compare it to existing classroom space. The Department of Treasury's only function is to safeguard taxpayers from districts overbuilding classroom space and not the other amenities often associated with a new high school. Treasury assure that the students are present in the district to necessitate the new construction. The Department of Treasury does not check into the amenities associated with the new building. Districts may build elaborate high schools, filled with amenities, providing the number of new classrooms correspond with current and projected pupil counts and they stay within budget.

Once the Department of Treasury determines the need for a new building it

does not check further on the design or construction process. This enables those involved in designing the building to build and equip the new high school with the components they choose. Downs reminds us that it is during this process where school officials and other decision makers will act to meet their personal needs. This is a notable flaw within the system as there is no check other than the district building committee to prevent individuals and coalitions from building amenity filled high schools. My data shows where on numerous occasions; those with a personal interest were able to have a particular component of the building added because of a persuasive argument or they were part of an influential coalition endorsing a particular component of the facility.

Analysis of Data

Utility Interest, Downs

As stated earlier, Downs' theory that rational people will act in their best interest is the primary premise of this study. Downs refers to this behavior as "utility" or acting in their own interest, and he states that utility is often motivated by a need to "satisfy their own needs" (Downs, 1957, p. 27). There are numerous examples of utility, within the study.

In school district A, the facility committee believed they would have a much better opportunity to "sell" the bond proposal if they "appealed to a broad base of

community interest or something for everyone." District A, when attempting to gain support for the bond proposal felt compelled to "add a pool for senior swims and athletic fields, technology, and entertainment facilities" to meet the needs of the community. By district A including the additional facilities, I witnessed Downs's "utility" argument.

Another example in district A of "utility" occurred when the architects met with the coaching staff. The athletic director explained that "whatever they wanted, the architects gave it to them." He went on to say, "Every group was thinking for [their] own area and that's how it [athletic area] was put together." Additionally, he stated that there was a sense that everyone was supportive of each other, "but when everyone gets what [they] want, sure [they] are going to get along."

A member of district A's board of education confirmed that there was something for everyone as he stated, "We not only replaced the old high school and the old sports facilities, we added something for everyone." He continued stating that only 25% of the district voters are parents so the board and administration had to appeal to and "sell to everyone and we did." Continuing, he stated that the board discussed identifying groups who would support the project and the incentives that would entice them to do so.

According to this board member, they identified groups such as the Lions, the

Business Auxiliary, the building trades' people, board members, and promised them something. "If you have 300 band members, you have 600 positive parents," the board member stated. He continued to stress there was something for everyone as the bricklayers, teachers, and contractors, who all live in the district, took a personal interest in the building project as there was something in it for them, which endorses Downs' utility theory.

District A used Downs' theory as a campaign strategy, providing something for everyone, which was to their benefit as the bond proposal passed by just 7 votes out of 16,256 registered voters. Their process fits with Downs' theory as a small group of supporters "sell" their thinking to another like thinking faction, who begins to build coalitions of people who want something from the proposal. The coalitions within the community that are in favor of the proposal gather support. The vice president of the board phrased their campaign most succinctly when she said, "They went to people who wanted something from the school."

In school district B, Downs' utility theory became apparent after the successful bond vote when the architects met with the teaching and coaching staffs. "The fine arts people and the athletic people took over" stated the high school principal, speaking of the planning process to identify the specifics of the building. The coaching staff was able to convince the designers to build an expansive indoor athletic/physical education facility as that component of the building required 20% of

the available square footage of the entire project. The coaches had an ally in the process, as the high school principal was a former athlete and a former coach who took great pride in the elaborate features within the facility. He indicated that the gym was constructed based on specifications for a 1,500 student population and has seating for 4,000 spectators while the school currently houses 1,100 students.

The high school principal continued, stating that the performance gym also had the assistant principal's "footprint" on the facility as he was also a former coach and athlete and currently works part-time as a basketball official. Just off the new gym is a new basketball official's locker room with two reclining chairs, a television, refrigerator, and a bathroom equipped with a shower. The assistant principal's priority, as he mentioned, was to assure that visiting officials had a locker area with appropriate amenities.

The year prior to construction of the new high school, the orchestra director in district B was named "Orchestra Director of the Year" in the State of Michigan, and according to the principal, he had considerable influence with the design committee. He wanted the design team to create a separate entrance and a separate parking facility for the fine arts portion of the facility as they did not want to share an entrance or share parking with athletics. The chief architect explained that the band director was intensely opposed to sharing an entrance and a parking lot with the "athletic people." The new auditorium has a separate performing art center parking

area with a separate two story glass entrance that cost the taxpayers $11 million to build.

The $11 million dollar auditorium is equipped with acoustically refined equipment, a full-fly stage area, and a lockable band shell that drops from the ceiling. The auditorium seats are plush with custom designed fabric. The space has a set building room, dressing rooms for the actors, and a black teak stage; the facility is touted by the principal as one of the finest high school performing arts centers in the United States.

It could be argued that Downs' theory of utility was evident in district B as the principal stated very poignantly, "The fine arts people and the athletic people took over" as they were able to obtain the type of facilities they wanted, primarily because they were able to provide strong coalitions and present the most compelling argument. Those involved in the design decisions were acting in their personal interest as they were able to convince the decision makers to build the type of facilities they wanted. Power played a role in the decision making as well. The principal, a former coach, wanted an elaborate athletic facility, and the Orchestra Director of the Year was able to exert considerable influence on the design team as a consequence of his most recent accomplishment.

On the converse side of the power perspective is the media specialist in

district B, who has little influence with the administration, staff, or the community. The media center is 4,750 square feet or approximately 1.4% of the school's total square footage. According to the high school principal, the space is comparatively small. He indicated that the media specialists has been in the district for over twenty years and formerly "directed a 1950's style library in the original high school." According to the principal, she lacked the political clout of the principal or the orchestra director to contend for additional square footage during the design phase of the project.

I will present data that people in school district C also exhibited Downs' theory of utility during the design phase of their building project; however, their results were considerably different. The fine arts and athletic people were not the clear winners in district C as they were in district B. The industrial arts and science departments were able to create the most compelling arguments; subsequently they were able to design the facility they wanted.

The procedure district C used was a task force, made up of approximately twenty-five interested community members, staff, coaches, band and athletic booster representatives as well as parents with an interest in the proposal. Many of the community members on this task force served to see particular venues added to the project, according to the superintendent. The wood and metal shop teacher joined the task force to have input on the new industrial arts facility. In doing so, they were able

to successfully build one of the largest and well-equipped woods and metals facilities in the state. According to the superintendent, "The woods and metals facility is larger and better equipped than many industry sites or community colleges."

The industrial arts teachers had the political power to persuade the task force as he developed a community-based, industrial arts committee composed of business and woodshop owners telling the task force what needed to happen within the industrial arts department in order to meet the needs of the students. The industrial arts instructors were working in their best interest as they wanted to build the best high school industrial arts facilities in the state and equip it with machinery that is found in industry, not in a typical high school wood shop. "They told us to put together a wish list of the equipment we wanted, and we thought we would get about half of it" an industrial arts teacher stated.

The industrial arts teacher assembled a very comprehensive list of equipment totaling about $700,000 in machinery to equip the facility. "As I mentioned, we thought we would get about half of what we requested, but the cut list came back, and they asked us to trim it by just $30,000 so we were very pleased with what we received," stated the woods instructor. The same was true of the metals shop, "They said, 'Dream for the Cadillac,' so we did and they only scaled us back a little. We wanted each shop to be the size of a gym." Each industrial arts facility has 5,400 square feet of floor space and an additional 2,000 square feet of storage.

A very similar experience occurred in district C's science department. "The science teachers were drawing labs" according to the superintendent who believes that stronger teachers were interested in the project and were able to have their portion of the building design come to fruition. She contends that strong programs attract students and are driven by strong people who want to have the best facilities. According to the superintendent, when the stronger teachers were asked by the design team what should be included, "the people with the most passion and most compelling arguments were listened to," and they subsequently received the type of space within the new high school they wanted.

The science department had a powerful supporter on the administrative team. "There were six science labs in the original design," according to the high school principal, who recognized a need for additional lab space, "Being a former science teacher, I knew that we needed at least ten labs; we ended up with nine." His interest area was clearly in the sciences, which did not go unnoticed. The science department head stated, "We had a tremendous ally in our former science guy, now principal of the school. The original design called for six science labs and we were able to add three." The principal mentioned that the science department head designed exactly how the science wanted the rooms to be furnished and equipped, and stated, "We put a lot of time in to get things the way we wanted them."

Utility was clearly evident in district C as the superintendent helped facilitate the process by allowing those with the "most compelling argument" to build the facilities they felt they needed. Power also was at play in district C. The principal, who was a former science teacher, was able to convince the task force of the need for specialized science rooms as well as additional space in the science department.

"Utility" interest became evident in district D when the architects presented the building committee with four variations of plans to consider. They submitted the plans to the teaching staff and held hearings to determine what the staff wanted in the new building. The teaching staff all had requests: they wanted quiet classrooms, air conditioning, and more storage space. The fine arts supporters wanted a bigger, better auditorium and more musical practice rooms, and the science teachers wanted larger labs adjacent to their classrooms. The athletic coaches wanted a pool with a diving tank and a practice football field.

The teachers wanted larger classrooms, and the administration wanted to increase the size of their rooms as well. Administration believed that students should move around and participate in projects and have teachers move away from the "sage on the stage" form of teaching. The administration believes that the teacher's role is to engage kids in projects, groups, and opportunities for active learning. Each division of the design team wanted various items included in the new building for its own reasons, which is as Downs' theory predicts.

Downs' theory of "utility," or the concept that people will act in their best interest, is evident in district D as the superintendent and the building committee provided people and groups with what they requested in the building project. The bond campaign and design process was reminiscent of a quid-pro-quo as the district received what it wanted in a positive vote, and the people involved in the decision making process received what they wanted in terms of desired facilities.

Competitive Consumption, Schor

The second theory discussed is Juliet Schor's concept of "social comparison" where people, and for purposes of this study, school districts, have a manifestation to "keep up" with neighboring districts. She refers to the need to "keep up" as "competitive consumption," which is the idea that spending is driven by a comparative or competitive process where individuals or in this instance, school districts try to keep up with neighboring districts who have built new facilities near their school district.

As stated earlier, the "competitive consumption" theory may play a more important role in Michigan when the school of choice program is factored. The sense among some superintendents is that the schools of choice plan forces schools to build new high schools to attract and retain students. This phenomenon was referred to earlier as the "arms race" where each district seems compelled to build increasingly more expansive buildings, often to compete for students. Districts feel the need to

"Keep up with the Joneses" by building these new high schools or risk losing students to neighboring districts as funding in Michigan follows the student to the new school. One superintendent referred to the "arms race" as where districts are attempting to "keep up" with neighboring districts to recruit students. The following are examples of school districts engaging in the construction process from a "competitive consumption" perspective.

The athletic director in district A stated that 60% of the fourteen hundred students participate in athletics and that the athletic facilities in the new building program had to "be there to do it right." He compared what district A did with the athletic facilities to a neighboring school system that recently built a new athletic complex. These districts were similar in size and participate in the same athletic conference, which enabled the residents of district A an opportunity to view their facilities. As a result, the community wanted the district to build an athletic center that would rival their neighboring districts.

The vice president of the board of education was encouraged that the supporters of athletics were actively engaged in the bond campaign, stating "They have been visiting neighboring schools for years, and they know the type of facilities their kids get to play on." She went on to say that the athletic people really helped to get the vote out, and a big reason is that district A would move all of their athletic fields to one location, which meant parents do not have to drive to different athletic venues within the school system. District A's athletic parents were aware of the type

of facilities that are available to schools as they have been visiting neighboring districts for years, and knew the type of facilities that existed and wanted them for their children. This behavior may be classified as "competitive consumption" as the parents want what the other schools in their athletic conference have regarding sports complexes.

A primary focus in district B was in the performing arts area. The district erected a one thousand seat, $11 million dollar auditorium containing the most contemporary equipment. The people in district B believe that it is one of the finest high school performing arts centers in the United States. The fine arts supporters in this district are competing with neighboring school districts and with the remainder of the country regarding their auditorium.

District B also wanted to have an indoor athletic facility that would rival the best in the area. The district, in an attempt to build such a complex, hired the athletic director from a rival district as the new assistant principal. The new assistant principal's former school had the most comprehensive and complete gymnasium in the area, and he became instrumentally involved in the design and construction of the new performance gym, which mirrored the new assistant principal's former district. Some within the school system believe he was hired in the fall of 2000 for the express purpose of bringing a construction expertise to district B's bond proposal process.

"Keeping up" or "competitive consumption" is a focus in district B as they want their school system to have the best performing arts center in the country as well as the premier performance gymnasium in the area. The district deliberately hired a former athletic director to assist with gym construction in an attempt to build the most impressive gym in the region.

The input from the community was similar in that they wanted a "showplace" and would be unhappy if the building did not have "curb appeal" according to the assistant-principal. The bond proposal passed and the public received the curb appeal they requested prior to the election. "Competitive consumption" or the need to compete with neighboring districts was present within district B's data as they wanted to have the best musical and indoor athletic facility in the area.

The need to compete does not strictly emanate from neighboring or rival school districts, as the citizens committee in district B were influenced by the high-tech business location where they met to plan the new school design. The location influenced their decision making as the multi-national high-tech business contained the latest technology and furnishings. According to a community member, the committee was able to see precisely what would be available if they voted for a new school with a contemporary design. As a result of their new perspective provided by the high-tech business, the committee began to talk with members of the community to promote the possibilities for their children should they build a new high school.

They presented the new design as a "showplace" that the community could be proud of. "The vote passed 3 to 1 and the community got a showplace," stated the assistant-principal.

School district C built two smaller high schools, very similar to the school system neighboring them on the southeast portion of their district. District C was interested in the building concepts the neighboring district used when they built their second high school. District C's superintendent and the assistant for finance were both fascinated by the environmentally friendly building concept, so much so, they visited the neighboring school to gather information.

The neighboring district built a "Green" school that does not have a gas boiler; rather, they heat and cool the building by using a geothermal system that extracts heat from ground water by using miles of pipe and hundreds of water wells. The "environmentally friendly concepts" were so appealing to district C's superintendent they decided to build a "Green" building, only better.

When district C began designing the new high school, they incorporated environmentally sound theories, but did not want to simply copy the neighboring school district's design. The superintendent felt they needed an advantage over the neighboring district, so they incorporated more stringent environmental concepts and worked to become a "Green certified building." The design work incorporated the

LEED (Leadership in Energy and Environmental Design) Certification concept, and as stated earlier, to become LEED certified, the design engineers must adhere to the LEED standards throughout the design and construction process. The LEED certification enabled district C to follow more rigorous standards than their neighboring district. Schor's (1999) concept of "competitive consumption" is evident in the district C construction project as they wanted to build a more energy efficient building.

The athletic department in district C also felt pressure to compete with neighboring districts. When designing the weight room, the football coach and athletic director felt compelled to enhance the facility as there were schools within their athletic conference with outstanding weight and conditioning facilities. The head football coach was most impressed with the results of the new weight room, "I told the athletic director that we had but one chance in our lifetimes to do this right, and I think we did." The coach mentioned that they visited other schools to see what building a great weight room entailed. The coach felt the pressure to compete in a highly competitive athletic conference and felt the new weight room would provide the necessary edge. The coach stated, "We took three kids to a college tryout and (conference school) had seven players there, and they were all strong kids." The athletic arena seems to produce the most competitive rivalries as schools look to build and surpass their neighbors in athletic facilities.

Another competitive area unique to district C is in the industrial arts department. According to the superintendent, the woods and metals teachers presented "compelling arguments" why they needed over 14,000 square feet of classroom space and over $1.2 million in equipment to outfit the two labs. As a result of their contemporary industrial arts program, they are attracting new students through the Schools of choice program.

When asked if students are transferring to district C as a result of the industrial arts program the industrial arts teacher indicated, "Yes, we just had three kids transfer from (school name) because they don't have a woods program at that school." He believes that once students and parents become aware of the type of certificated, industry-based program that they offer in district C, students will begin transferring under the schools of choice transfer program. He went on to say, "Our program is only a year old now, once the word gets out, we'll have kids transfer."

The Michigan Schools of choice program seems to be an aspect as Schor's (1999) theory of "competitive consumption." District C believed that facilities and programs offered within a newly constructed high school would attract students. In Michigan, the student's foundation grant of approximately $7,000 transfers to the student's new school, making new facilities that attract students all the more important.

School district "D" is also under pressure to compete for students as their

pupil count has steadily declined moving from 1,800 students in 1996 to 1,200 students in 2006. District D's previous high school facility was built in 1957 and school officials, fearing continued declining enrollment, felt they needed to upgrade their high school facility to compete with two neighboring suburban districts that recently built multi-million dollar high schools. District D, like the other school systems, are competing by utilizing a new facility to keep and attract new students. The district's superintendent asked the people to support a high school renovation, and the community agreed that the high school needed extensive work. The superintendent openly stated, "The need to compete with the neighboring districts for choice students."

Attracting students with a new facility also has a downside as the teachers were concerned about the continuation of the school's academic reputation. The schools of choice students do not have the same academic ability or social capital as district D students. As one teacher stated, "The choice kids are not up to the (school name) kids." The superintendent is of the opinion that the district needs to attract students to help bolster the system's operational budget. He believes choice students will be attracted by a new facility, and not the excellent academic record of district D. Last year, the high school in district D, produced 22 National Merit Scholars, which is among the highest in the state, but district D was not attracting school of choice students solely with a good academic program. School officials are of the opinion that new facilities are more effective when attracting students, than an excellent

academic reputation.

Clinical Authority: Stone

Clinical Authority emanates from the medical field and refers to the ability of one to influence others. Doctors in the practice of medicine are granted the authority to make decisions on behalf of those they are treating, as doctors have the clinical knowledge to make those decisions, and therefore we give them the power to do so. The same holds true in the academic setting as educators are also viewed as experts in education and can influence how citizens think and vote based on their perceived authority granted to them by the community. This concept of "clinical authority" (Lukes, 1974; Stone, 1988, p. 46) is a factor in political decision making as it is a method of thinking where practitioners can influence decisions. This study will attempt to substantiate that district administrators, boards of education, and school designers often attempt to use their knowledge and influence to persuade the thinking of the community.

Downs' theory of utility assumes that decision makers will act in their best interest. Subsequently, school officials who are perceived as experts in education have the ability to influence the voting public, often with concepts they endorse. This is exhibited in the data within this study as school officials in the four schools exhibited this type of behavior.

Those involved in the marketing of the bond proposal in district A "sold" the new school on the concept of appealing to a broad base of community interests or "something for everyone." The school officials were appealing to the utility interest of the voting public as the bond proposal included components for the entire community. District A officials possessed the ability to "sell" the proposal to the community perhaps as they were viewed as the local experts in the field of education.

The campaign process in district A included the superintendent, in conjunction with the architect, leading discussions with supporters of the proposal. The superintendent's group concluded that they wanted a school that "looked like a school." The superintendent stated "They wanted something that would help the kids' future, technology, flexibility, and durability." The message that preparing students for the future is best accomplished in a new high school facility quickly became part of the bond campaign. The thinking originated from the school officials who wanted to see the new facility come to fruition, "So the process of studying, learning, planning, convincing, selling, and building began," according to the superintendent as school officials used their "clinical authority" to promote the campaign.

District A officials discussed the educational benefits of a new school, such as providing their students with the opportunity to compete in the new "global

economy." This type of dialogue enabled district A's school officials to maintain their perceived expertise because their message is that they are best able to prepare students for the new global economy in a new facility.

The findings in this study indicate that school officials created a sense that students must prepare for a world that is technologically different from their current reality. Community members involved in the design of district A's new high school felt compelled to build a contemporary facility and equip it with sufficient technology to prepare students for the rapidly changing "global economy." Whether real or perceived, the community is of the assumption that a new school, with appropriate technology, will prepare their students for the 21st century, so this became a campaign theme for the community within district A.

The teachers liked the new building, and one teacher believed the increased technology changed the way some teachers taught as the "kids are doing more projects." "Everything is DVD or online or on a computer, or the Internet with wireless hook-ups" according to one teacher who also said "the kids don't know what a book is." In his view, the latest technology has become the way teachers teach and the way kids learn. When asked if the new building helps with student learning, he responded by saying, "the new school provides the necessary stimulation, and they need the technology and the good teaching to learn." The campaign of increasing technology within the classroom has become a reality in district A.

While school officials may be perceived as educational experts and are potentially capable of influencing the community, school designers and building engineers also have the apparent ability to exert "clinical authority" within the community. The engineer in district A had some initial anxiety about the rising cost of building material, so he and his colleagues were able to convince the district to move forward with the project while supplies were still competitive. Few within the community would have the knowledge of the increased cost of building supplies. The designer may have influenced the decision of the school officials as he had the "clinical authority" to persuade them to move forward.

In district B, the community was shown a blueprint of the facility, but had little knowledge of the details within the new high school. The voting public knew how many square feet would be in the building, how many students it would accommodate, how much it would cost, as well as the basic components of the building. According to the present design/construction process, the community is unaware of the details as those are determined by school officials and the instructional staff after the positive bond vote. The procedure for determining the details within a school building are determined by school officials.

Administrators, members of the board of education, and design engineers may

be perceived as having the ability to influence the community. It could also be argued that members of the board of education also have an apparent ability to persuade the voters. A board of education member in district B, who worked for an information technology firm, insisted the building committee include current technology in the new facility. "These kids, including my daughters, will have to enter a world, where if they are not prepared to face the challenges of technology, they will fail" she stated. "I lobbied very hard to have that committee include as much current technology as we could afford, and if we couldn't afford it, I encouraged them to cut elsewhere, because it was just too important" she stated.

School officials and design engineers are given the authority to create the details of the facility as well as the image of the new complex. In district B the design for the original community group to consider was a box design, which was quickly abandoned by the new committee in favor of a more contemporary drawing. The new committee, composed of school officials, members of the board, and influential community members created a vision for the new building that included educating the body, mind, and soul of district B students. This vision for the new high school translated into their campaign slogan, which was, "Teach the mind, train the body and touch the soul."

The committee of fifty began to "sell" this concept of the three-pronged building within the community, and according to the assistant principal, the

community viewed it as a vast improvement over the rectangle box presented during the first bond campaign. The significant issue was the authority of the committee as they were granted the ability to redesign the building and create a new vision for the community and the district.

District C used research to enhance their "clinical authority" within the community as the school design they sanctioned is unique in that it involves two smaller high schools functioning as one. School officials and board members endorsed the small school research of creating a small, intimate learning community; however, they wanted to maintain multiple options found only in large high schools. Cotton's research suggested that larger schools are "impersonal to students" (Cotton, 1996). School officials offered a body of research that suggested small schools, will improve education by creating a smaller, more intimate learning community. As stated earlier, students may take classes on both campuses, which increases potential offerings for students while attending one of the smaller high schools where staff and administration are familiar with the student.

District C's school officials presented the bond Task force with research on small schools, which eventually created their bond campaign theme of curricular flexibility and safety in the smaller school. What the task force heard was that small schools have higher attendance rates, lower dropout rates, and their students have higher grade point averages. One reason for this difference is that in smaller schools,

the conversation is not about controlling the large population of students, but rather on the education that they are getting (Vander Ark, 2002). District C officials, armed with this information, were able to present persuasive arguments to the Task force and to the community of the merit of their school concept.

Safety in schools was not a sufficient bond campaign theme for district C as they also wanted to maintain the expansive curriculum that was currently in place with one larger high school. The task force embraced the smaller school research, but still wanted to offer its students multiple options within the curriculum. The citizen task force felt this could be accomplished by building new smaller high schools on the same campus as the existing middle school. The middle school was converted during the bond campaign into a second small high school. The principal stated, "The committee was very clear that they wanted students to have the ability to take classes in both buildings and that a wide array of course offerings would be available to students." In district C, school officials presented research to enhance their ability to influence the task force and the voting public. The concept of "clinical authority" was enhanced by presenting current educational research that few within the community could contest.

School officials also used their "clinical authority" to influence the task force and the community as they enjoyed competing athletically with the state's largest schools. According to the superintendent, the thought of loosing those long standing

rivalries and competing against much smaller schools was not appealing to her or to the district. Subsequently, the district sold the bond campaign on the small school concept while maintaining a single, large athletic program. Students who attend both schools will compete on one basketball team, or one football team, as they have one athletic program. As the superintendent stated, "I think our kids like to be (school mascot)", further endorsing the concept of one athletic program and adding strength to their school design plan.

Another example of exerting influence in district C was the superintendent's desire to build a "Green" school using the LEED (Leadership in Energy and Environmental Design) certification concepts, the national standard for developing environmentally friendly buildings. This originated with the superintendent's desire to compete with a neighboring school district that built a "Green" building when erecting their second high school. District C did not want to simply copy their design, so they incorporated more stringent environmental concepts to become LEED certified. Using the "clinical authority" granted to them by the community, the superintendent was able to convince the task force, and eventually the community, of the benefits of an environmentally friendly school.

District D's superintendent brought "clinical authority" to bear by influencing the board of education to address the district's declining enrollment issues. School district D's high school was fifty years old and in need of upgrading. He convinced

the board of education that the old high school was physically unattractive, and staffed by too many old and expensive teachers. The board of education responded, referring to him as "a visionary leader." He identified the issues, in his words as "people, plant, and program." Because the district moved forward with the bond and building program he was able to convince the board and the community of the need for a new high school. He potentially was able to accomplish this because of his perceived expertise in the field of education as the board and the community granted him the "clinical authority" to move the project forward.

The community agreed that the high school needed extensive work to compete with the neighboring suburban districts, so they supported a renovation of the old school. After considerable discussion and extensive persuasion by the superintendent, another bond proposal was placed on the ballot for $66 million, which was approved by the community.

The superintendent continued using his perceived expertise to influence the building committee and the board as he favored a number of concepts such as the "zoo house." The zoo house is a city high school near the zoo in Minneapolis that built flexible classrooms where the walls could open and close to accommodate small teams or groups up to 100 students. He was able to convince the design team to make the rooms bigger to accommodate the type of flexible rooms he described in the zoo school. The superintendent and the building committee encouraged the architectural

team to make the spaces larger as "Big kids, flexible space, and technology all take space."

The use of influence to persuade communities was evident in the four school districts as the perception of "clinical authority" enabled school officials and boards of education to present concepts to the voting public as perceived experts. As mentioned earlier, Downs' theory of utility assumes that decision makers will act in their best interest. The concept of "clinical authority" coupled with the concept of utility potentially provides school officials' with the ability to influence the voting public on issues they endorse.

Check and Balance

The data derived from the fourth concept discussed in this study will draw attention to the lack of check and balance in the current process of building new high schools. This becomes a factor as the community is not provided specificity about components of the building prior to the bond vote. The community is aware of an architect's rendering of what the building will probably look like but the specifics of the building are not included. The bond proposal is presented to the community without the interior details incorporated into the design. Detailed drawings are developed after the community approves a bond proposal as the community approves a basic concept and a specific dollar amount.

Also, for various reasons there are often additional dollars left over from a high school building project. These funds may become available due to low construction bids, earned interest, or favorable bond rates. There are no checks on how these funds are disbursed as local school officials have the authority to spend the money where they would like, providing it is spent at the location, where the bond proposal was approved. Listed below are examples of this concept as data from each district validates the claim of few checks on the unencumbered funds.

In school district A, when the architects met with the coaches to discuss the components of the building, the design team listened to the coaching staff and ended up granting them "whatever they wanted" according to the athletic director. The architects explained to the coaches that the district had additional funds to add to the project because the "district made out on bond rates and on labor costs."

The vice president of the board in district A, when asked about the bond campaign stated, "They went to people who wanted something from the school." She stated that the district's interest rates to fund the project were low and construction bids also came in much lower than expected. This enabled the district to offer something to individuals within the community in exchange for their positive vote.

District A officials were able to add an Olympic size swimming pool with a

diving tank, an elevated indoor track, and they had the additional funding to purchase extras such as burnished blocks, 950 square foot classrooms, and flex rooms for large group meetings and speakers. The vice president of the board found the process that the architects used to develop the new school to be "interesting, the architects went to the teachers and asked them about their ideal situation, so they told them what they wanted and the architects included it in the design."

School district B had a very similar situation as they received an additional $9 million in unused funds and interest revenue that the assistant principal indicated was spent on upgrades to the building and on buildings throughout the district. "I was like Santa" stated the assistant principal who also functioned as the district technology director, "I purchased laptops and PDA's for all the administrators." He continued, "We were looking for places to spend the money, so much so, we built a split-face block concession stand with restrooms for the tennis court area and a $785,000 alternative school off campus, it was an ungodly budget."

District B's thinking was, "We had to spend the money at the end of the bond or lose it." "The department heads upgraded the technology for their department, their furniture, and the cabinets in their rooms" according to the assistant principal. The administrative team was told to itemize the list into four categories to spend the excess funds. The categories included items they: must have, should have, would like to have, and Christmas gift. From that list, the administrative team determined how

the additional dollars were spent. Leadership in district B spent the money how they wanted as there are no checks on the spending of excess funds from a bond proposal.

District C built one of the largest, well-equipped woods and metals facilities in the state, which according to the industrial arts teacher, is larger and better equipped than many community colleges. They were able to do so because district C also received favorable construction bids and bonding rates. The business manager indicated that the school bids came in very favorable stating, "We hit the bond market at the right time." The combination of paying less for school bonds and favorable construction bids resulted in the project having additional funds to spend on upgrades. The district administration provided teachers and coaches with additional dollars providing they presented the "most compelling" reasons to upgrade their portion of the building.

When the construction project was completed, and the upgrades were added to the buildings, district C reported a construction fund balance of $3,000,000. Unlike the other districts in the study, district C returned the additional money to taxpayers by applying the balance towards repayment of the bond debt. However, prior to returning the money, building upgrades were completed and awarded to the individuals that provided the administration with the "most compelling" arguments. The public or governmental agencies do not determine how those funds are spent as district officials decide the use of those dollars.

District D also had the luxury of additional funding as teachers' wish lists were incorporated into the design of the building. "What the teachers and interest groups wanted they received" stated the language arts teacher. The building ended up with three music rooms, a large auditorium with an additional "practice auditorium", an Olympic size swimming pool with a diving facility, a professional size basketball gym, an indoor track, an auxiliary gym, and the latest technology. Those involved in the process stated that "the money was there." The committee was able to do what the various interest groups wanted, and the superintendent and the architects would figured out how to make the various requests from the interest groups happen, according to the language arts teacher.

All four school districts in the study passed a bond proposal shortly after the September 11, 2001 attacks on the United States. At that time, there were few construction projects, and the contractors, eager for work, submitted bids considerably lower than during a time of prosperity. The same is true of the bond market, with fewer construction projects to fund; the rates of borrowing the money to fund the project were also reduced. These events created the excess funds for the four districts within this study. The surplus funds provided school officials with the ability to upgrade and add components to the building project. These upgrades can be added to the project unchecked by a governmental agency. The local school board and school officials have the ability to spend unencumbered dollars on the facilities that they prefer.

Significance of the Findings

The data within the study suggests a separation between one of the national educational agendas of building smaller high schools, to create a more personal setting for students, and what actually occurred in the four communities studied is that they all built large, amenity filled high schools. Upon examination of the data, there appeared to be four reasons for this separation of agendas. Downs (1957) is paramount in this thinking as he reminds his readers that it is rational for people to act in their best interest, and when this does occur, local agendas appear not to be in harmony with the national research of building smaller, more intimate high schools.

The conclusions of studying these four school districts suggest that amenities are appealing to communities, and school officials. The reasons these amenities were added to the four high school construction projects appear to be as a result of the following: First, if the school district next door built a performance gym with an indoor track and connected fitness center, then community members and school officials lobbied to have those facilities included as part of their building project. As Schor (1999) reminds us, "competitive consumption" or "keeping-up" with our neighbors is an observable fact.

Second, as Lukes (1974) and Stone (1988) reminds us, school officials are

often viewed by the voting public as "experts" in the area of education and will use their expertise or "clinical authority" to persuade the community to include certain amenities in the building project. Third, Downs (1957) states that it is rational for people to act "selfishly" and if a school official or community member would like a particular facility included, he or she will petition to have it incorporated in the project. And fourth, there is also an economy of scale involved in local decisions as it is expensive for local taxpayers to build multiple high schools with multiple amenities. If a school district wanted to follow the national agenda of building smaller high schools, for example, three schools of 900 students each, as opposed to one larger school of 2,700 students, the cost of adding multiple athletic and musical facilities would be prohibitive.

Additionally in summary, there is the "arms race" in Michigan where districts feel compelled to build large, amenity-filled high schools to attract schools of choice students and retain the students they currently have in their district. Since the schools of choice program has been in existence, the state allocated money ($7,000) follows the students to whatever school they attend. As a result, some schools seemed obligated to compete for students or loose funding from their operational budget, and according to the data within this study, a new high school facility can attract students.

Aside from the events within this study of what appears to be the local interest of creating large, amenity-filled schools and one of the national educational agendas of

building smaller, more intimate high schools, there is another conclusion within the data. There was little conversation about the educational benefit of a new facility. The four school districts within this study seem to value athletic and musical amenities as the majority of the bond dollars were spent in these areas. John Rohr (1978) defines values as "beliefs, passions, and principles that are held by the overwhelming majority." A new high school building represents a way of thinking about what is educationally important to the community and to the board of education, as the citizens of the community are encouraged to place their dollars into the type of structure being offered by the board. The data demonstrates that the four districts value and placed considerable financial resources into the athletic and musical amenities of their new high schools, which according to Rohr, is where they place significant value.

The underlying principles of the national versus local school building agendas are evident within the data of this study as school officials, who are often preserved as exerts, can often influence the voting public. As demonstrated within the study, school officials may be motivated by a desire to "keep-up" with neighboring districts. Subsequently, Schor's concept of "competitive consumption" or keeping-up with neighboring districts was present within the data as new high schools continue to establish new construction norms as designers continue to add more elaborate components to high school facilities. The study summarizes these concepts by using Downs' suggestion that rational people do act in their best interest, which may imply

that school administrators, who were able to influence the public in these four school districts, have acted in their best interest as initially suggested by Downs.

As demonstrated in the study of the four districts, contemporary high school facilities may be a factor in attracting and retaining students. This study suggests that one of the national educational agendas of creating small intimate schools and the agendas of these four districts of building large amenity-filled schools suggests a separation in thinking. These four districts decided to build large, amenity filled facilities as often stated, to attract students, which is contrary to the national agenda. The expense would have been too great for these four school districts to add athletic and musical facilities, which are valued by school officials and the community alike, to multiple smaller high schools.

Closing

This study does not intend to generalize that all school officials, when given the opportunity to construct a new high school, will act in their best interest. The action of "utility interest" was evident within this study, but the study sampling was too small to suggest generalization of "utility" in all construction ventures in Michigan. Nor does the study suggest that communities build new high schools exclusively to compete with the neighboring school that recently built a new amenity filled high school. Although "competitive consumption" was discovered within the data, again the sampling was too narrow to suggest generalization.

This study does not suggest that the lone reason a community would build a new high school is to attract new school of choice students. School of choice students were mentioned as a reason to build a new school in all four districts; however the study does not suggest choice students as an exclusive motivation to build a new facility.

It should also be noted that while some school officials do have the ability to influence a voting constituency, not all communities view school officials as "experts" in the field of education. That being said, there was evidence within the data to propose that district officials, design engineers, and school board members were able to convince others within the community to build the type of facility suggested. This study examined four suburban school districts, which is not a sufficient sample to suggest generality.

While the four communities involved in the study appeared to value musical and athletic amenities in their new buildings, the data does not propose that all communities will see value in those facilities. The four districts examined all placed over half of their available funds into the physical education/athletic and musical components of the building. This does not insinuate that all communities in Michigan will do likewise.

Evidence of "utility," "competitive consumption," "clinical authority," and community "values" did occur within the four school districts involved with the study. The research, however, was limited to four suburban school districts and fifty-four interviews; subsequently the study does not imply that these occurrences will materialize in every community in Michigan.

The study attempted to look at the process of school construction within the framework of "utility," "competitive consumption," "clinical authority," and community "values." This research did not attempt to address the issue of urban high school construction and the system of property taxes to fund building projects. An additional study may inquire about the inequities in property values and the abilities or inabilities of communities to build new school buildings based on taxable values within a community.

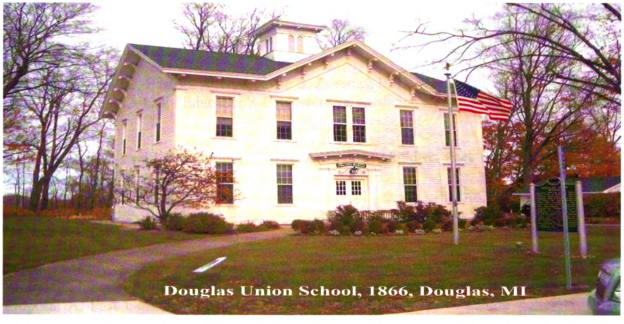
This study examined only suburban communities with a fairly high taxable value that would enable the community to support a $60 million bond campaign. Another possible study would be to examine urban school districts building projects. The proposed research would determine if the same community values existed in the urban communities as well as the school board's and school officials' approach to the bond campaign and design phase of the building project.

Appendix

School construction has progressed from this 1846 school building;

to this 2005 high school building.

And, from this 1866 school;



to this 2006 high school.

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References:

Abramson, Paul, (2003), p. 2 *School Planning and Management*, 2003 Construction Report, www.webspm.com

Achilles, Charles M., Barbara A. Nye, Jayne B. Zaharias, B. DeWayne Fulton, and C. Cain (1996), p. 113-127, "Education's Equivalent of Medicine's Framingham Heart Study"

ALA (American Lung Association) (2002), Asthma in Children Fact Sheet, New York, NY, www.lungsusa.org

Barker, R. & Gump, P.V. (1964) Big school, small school, Palo Alto, CA: Stanford University Press

Arsen, D., Clay, T., Davis, T., Devaney, T., Fulcher-Dawson, R. (2005), *Adequacy, equity, and capital spending in Michigan schools*: The unfinished business of Proposal A. East Lansing, Michigan: Michigan State University, Education Policy Center.

Bowers, J. H. & C. W. Burkett, (1987), Relationship of Student Achievement and Characteristics in Two Facility Environmental Settings, Edmonton, Alberta, Canada. (ED286278)

Brandt, Patti, (2006), The Bay City Times, *School of Choice Legislation has Forced Districts to Compete for Students.* www.mlive.com/printer/printer/.ssf/base/news

Brantingham, P. J. and F. L. Faust, (1976), p. 285, A conceptual model of crime prevention Crime and Delinquency

Brown, Gordon, (2000), p. 90, Lecture to the Royal Economic Society, July 13, 2000 www.hm-treasury.gov.uk/press/2000/p90.html

Chan, T. (1979), The Impact of School Building Age on Pupil Achievement, Greenville, SC, Greenville School District (ED191138)

Clarke, R. V., (1995), p. 8, CPTED and situational crime prevention in public housing. Paper presented to the Technical Assistance Workshop on CPTED organized by the U.S. Department of Housing and Urban Development

Clarke, R. V., (1992), p. 3, Situational Crime Prevention: Successful Case Studies.

Albany, NY: Harrow and Heston

Clarke, R. V., (1995), p. 95, Situational crime prevention. In Building a Safer Society: Strategic Approaches to Crime Prevention, Crime and Justice, Vol. 19, edited by M. Tonry and D. Farrington, Chicago: University of Chicago Press

Cohen, S. & Weinstein, N., (1981), p. 36-70, Non-auditory effects of noise on behavior and health Journal of Social Issues

Cohen, S., Evans, G.W., Stokols, D., & Krantz D.S., (1986), Behavior, health, and environmental stress New York: Plenum

Coleman, James, August/September, (1987), p. 50, *Families and Schools*, Educational Researcher

Conant, J. (1959). *The American High School Today: A report to Interested Citizens.* New York, NY: McGraw- Hill.

Cotton, J. (1996). School Size, School Climate, and Student Performance, Portland OR: Northwest Regional Educational Laboratory, www.nwrel.org/scpd/sirs/10/c020.html

Crook, M.A. & Langdon, F.J., (1974), p. 221-232, p. 221-232, The effects of aircraft noise in schools around London Airport. Sound and Vibration

Crumpacker, S. S., (1995), p. 36 "Using Cultural Information to Create Schools that Work," A. Meek (Ed.), Designing Places for Learning (Alexandria, VA: Association for Supervision and Curriculum Development)

Cummings, W., Altbach, P. (Eds.) (1999) *The challenge of Eastern Asian education: Implications for America. Electronic data* Boulder, Colorado: NetLibrary.

Cushman, Kathleen. "Why Small Schools are Essential." Horace (January, 1997).

Cusick, Philip A., (1993), p. 210, The Educational System: Its Nature and Logic, McGraw Hill

Downs, Anthony, (1957), p36, 37, *An Economic Theory of Democracy*, Addison Wesley

Duke, D. L., (1998), May, *Challenges of Designing the Next Generation of America's Schools, PHI DELTA KAPPA,* p. 688-693

Duke, Daniel L., (1999), *The Future of High Schools: What Will Secondary Education Look Like in the Next Century?* The Thomas Jefferson Center for Educational Design, University of Virginia

Duesenberry, James S. (1949), *Income, Saving, and the Theory of Consumer Behavior*, Harvard University Press, Cambridge, Massachusetts

Dunn, R., J. S. Krimsky, J. B. Murray, & P. J. Quinn, (1985), p. 863-869, Light-up Their Lives: A Review of Research on the Effects of Lighting on Children Achievement and Behavior. Reading Teacher

Eberts, Randall, Schwartz, Ellen, Stone, Joe. (1990). School Reform, School Size, and Student Achievement. *Economic Review* (26, 2, 2)

EPA (Environmental Protection Agency) (2000), Indoor Air Quality and Student Performance, EPA Report #402-F-00-009, Washington DC: EPA www.epa.gov/iaq/schools/performance.html

Evans, G.W., Kliewer, W. & Martin, J., (1991), p. 127-157, The role of the physical environment in the health and well-being of children. In H.E. Schroeder, New Directions in Health Psychology Assessment, New York: Hemisphere

Ferguson, Ronald F. (1991). "Paying for public education: New evidence on how and why money matters" *Harvard Journal on Legislation* 28 (2): 465-498.

Fielding, R., (1999), August, Planning the Learning Community: An interview with Concordia's Steven Bingler Concordia Architects, New Orleans, LA 70170, www.concordia.com.www.designshare.com/Research/Bingler/LearningCommunity1.htm

Finn (1998) Nye, Barbara, B. DeWayne Fulton, Jayne Boyd-Zaharias, and Van A. Cain 1995, *The Lasting Benefits Study, Eighth Grade Technical Report.* Nashville, TN: Center of Excellence for Research in Basic Skills, Tennessee State University

Foucault, Michel, (1973), *The Birth of the Clinic: An Archeology of Medical Perceptions*, translated by A. M. Sheridan Smith, Vintage Books

Fowler, W. J. Jr. & H. J. Walberg, (1991), p.189-202, School Size, Characteristics, and Outcomes, Educational Evaluation and Policy Analysis 13 (2)

Fox, Anne W., (2001), *Schools of the Future and Sustainable Design*, http://www.pprc.org/pubs/schools/index.cfm

Funk, P., & Bailey, J. (1999) *Small schools, big results*: Nebraska high school completion and post-secondary enrollment rates by size of school district. Lincoln: Nebraska Alliance for Rural Education

Hansen, Heidi, (2004), November 4, p. 1-27, *Governor Granholm Says New Data on High School Performance Demands Bold Solutions*, Office of the Governor Press Release

Harvey, James, (2004), Superintendent of Mason Public Schools, Mason Public Schools, 118 W. Oak St., Mason, Michigan 48854, http://mason.k12.mi.us

Hathaway, W.E. & Fielder, D.R., (1986), A window on the future: A view of education and educational facilities. Columbus, Ohio: Paper presented at the meeting of the Council of Educational Facility Planners

Hawkins, W.E. & Lilley, H.E., (1992), CEFPI's guide for school facility appraisal. Columbus, Ohio: The Council of Educational Facility Planners International.

Hemmes, Brad, (2004), Architect/Engineer with GMB Architects – Engineers, Holland, MI, www.gmb.com, recorded at the Educational Facilities Planning Conference in Bellaire, MI, October 14, 2004

Herbold, Robert J., February, (2005), *K-12 Establishment is Putting America's Industrial Leadership at Risk*, Imprimis, V.34, N. 2, www.hillsdale.edu

Herman, Alexis M., (1999), *Report on the American Workforce*, Washington, U.S. Department of Labor Report

Heschong Mahone Group. (1999). Day lighting in Schools: An Investigation into the Relationship Between Daylight and Human Performance. San Francisco, CA, Pacific Gas & Electric Company. www.pge.com/003_energy/003c_edu_train/pec/daylight/di_pubs/SchoolDetailing820App.PDF

High School Size, Ed.gov, U.S. Department Education, http://www.ed.gov/index

International Association for the Evaluation of Educational Achievement (2003) *Trends in International Science Study* www.timss.org

Jacobs, J., (1961) The Life and Death of Great American Cities New York: Random House

Kennedy, Mike, June, (2006), p.20, *The Green Movement* published in *American School and University Magazine*, Prism Business Media Publication.

King, J. & Marans, R.W., (1979), The physical environment and learning process, Report No. 320-ST2, Ann Arbor: University of Michigan Architectural Research Laboratory

Klonsky, Michael. (1998). *Small Schools: The Numbers Tell a Story.* Chicago, Ill.: University of Illinois at Chicago, Small Schools Workshop.

Knirck, F.G., (1970), p. 34-35, Acoustical and visual environments affect learning. Audiovisual Instruction, 15(1)

GAO (General Accounting Office). (1996). School Facilities: America's Schools Report Differing Conditions. GAO #HEHA-96-103, Washington DC: GAO (ED383056)

Gates, Bill, (2005) Remarks at the National Governors Association National Meeting in Washington DC in February, 26, 2005, office@macae.org

Grimsley, Kristin Downey and Salmon, Jacqueline L., (1999), p. A8, *For Working Parents, Mixed News at Home*, September 27, 1999, The Washington Post

Keller, B. (2000), p.6 Small Schools Font to Cut Price of Poverty, *Education Week* 19 (22): www.ed9week.com/ew/ewstory.cfm?slug=22size.h19

Kennedy, M. (2001), p.32, Into Thin Air, *American School & University* 73 (6):

Lackney, Jeffery A., Ph.D., A.I.A., R.E.F.P., February (2003), p. 1, *National Clearinghouse for Educational Facilities*, U.S. Department of Education, http://www.edfacilities.org

Lukes, Steven (1974), *Power a Radical View*, Macmillan

Luckiesh, M. & Moss, F.K., (1940), p. 915-938, Effects of classroom lighting upon the educational progress and visual welfare of school children. Illuminating Engineering

Mosteller, Frederick. (1995), Washington, DC: ERIC Clearinghouse. ED 402677, "The Tennessee Study of Class Size in the Early School Grades." *The Future of Children*

Muir, Ed; Schneider, Krista; Direct Democracy and Education Funding in the States:

A Comparative Analysis of Bond Initiatives, AFT (American Federation of Teachers) Department of Research, (1997), p. 1

Myrdal, Gunnar, (1978), pp 771-783 Institutional Economics, *Journal of Economic Issues*

National Crime Prevention Institute, (1986), p. 118, Understanding Crime Prevention. Louisville, KY: National Crime Prevention Institute, School of Justice Administration, University of Louisville

Olson, Lynn. (2003). Students: Small schools challenging, *Education Week* (22, 32, 17) Washington

Phillips, R. W., (1997), Educational Facility Age and the Academic Achievement of Upper Elementary School Students Unpublished Doctoral Dissertation. University of Georgia

Raywid, Mary Anne, (2000), "Taking Stock: The Movement to Create Mini-Schools, Schools-Within-Schools, and Separate Small Schools," *Urban Diversity Series*, No. 108, New York: N.Y.: Hofstra University

Rohr, John, (1978), p. 65, Ethics for Bureaucrats, an Essay on Law and Values, New York: Dekker

Schlesinger, Arthur, Jr., (2000), p. 5-6, *Has Democracy a Future,* Foreign Affairs

Schneider, Mark, November (2002), p. 1-24, National Clearing House for Educational Facilities, Washington DC, www.edfacilities.org

Schor, Juliet, (summer 1999), The New Politics of Consumption – Why Americans Want So Much More Than They Need, Boston Review – Political and Literary Forum

Simon, Herbert A. (1997). *Administrative Behavior: A Study of Decision-Making Processes in Administrative Organizations,* 4th ed. New York: The Free Press.

State Survey of School-Based Health Center Initiatives, (2002), www.healthinschools.org/survey2002

Stone, Deborah A. (1988), p.45-47, *Clinical Authority in the Construction of Citizenship* Public Policy for Democracy, Washington D.C.: Brookings

Taylor, R. B. and A. V. Harrell, (1996), p. 2, Physical Environment and Crime National Institute of Justice Research Report Washington, D.C.: U.S. Department of

Justice.

Taylor, Anne, (2000), p. 1, Director of The Institute for Environmental Education, University of New Mexico, Stein Lecture Series: Cornell University, Ithaca, New York Policy, Planning and Design for a 21st Century Public Education System

Uchitelle, Louis (May 3, 1998) *Keeping Up With the Gateses*? The New York Times on the Web, Business

Vander Ark, Thomas, February, (2002), Executive Director of Education for the Bill & Melinda Gates Foundation, Seattle, Washington, *The Case for Small High Schools*, Educational Leadership, 59 (5), 55-59.

Warner, Mark R., (2005) Remarks at the National Governors Association National Meeting in Washington DC in February, 26, 2005, office@macae.org

Washor Elliot, (2002). *Dollars & SENSE: The Cost Effectiveness of Small Schools*. Copyright © by Knowledge Works

Wasley, P., Fine, M., Gladden, M., Holland, N. E., King, S. P., Mosak, E., & Powell, L. C. (2000, June 20). Small schools: Great strides: A study of new small schools in Chicago. New York: Bank Street College of Education. Available: www.bankstreet.edu/html/news/SmallSchools.pdf

Wenglinsky, Harold. (1997). *When money matters: How educational expenditures improve student performance and how they don't.* Princeton, NJ: The Educational Testing Service, Policy Information Center.