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The new middle school: Participatory design and outcomes

Tina Wichmann
University of Nevada, Las Vegas

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THE NEW MIDDLE SCHOOL:
PARTICIPATORY DESIGN
AND OUTCOMES

by

Tina Wichmann
Bachelor of Arts
University of California, Los Angeles
1996

A thesis submitted in partial fulfillment
of the requirements for the

Master of Architecture Degree
School of Architecture
College of Fine Arts

Graduate College
University of Nevada, Las Vegas
May 2007
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Entitled

The New Middle School: Participatory Design and Outcomes

is approved in partial fulfillment of the requirements for the degree of

Master of Architecture

Examination Committee Chair

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ABSTRACT

The New Middle School: Participatory Design and Outcomes

by

Tina Wichmann

Michael Alcorn, BS, MS, MFA, AIA, Examination Committee Chair
Associate Professor
University of Nevada, Las Vegas

Effective school design is a multi-faceted endeavor that involves an assessment of academic goals, an evaluation of architectural factors, a survey of current research and trends, and an understanding of past precedent. However, despite these efforts, the specific sociological needs of the occupants that use the school facilities are often overlooked. This thesis explores student and faculty opinions on the predominant trends in educational architecture as they pertain to the “social” spaces of the current CCSD middle school prototype.

The primary purpose of this thesis is to explore the attitudes of students and faculty with respect to their current middle school design in order to contribute to the conception of a new middle school prototype for the Clark County School District. The secondary purpose is to determine whether participation in the design of their middle school environment will establish a connection among student, faculty, and facility that will serve to enhance interest, motivation, and relationships.
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Finally, I would like to recognize William E. Snyder, whose dedication and passion for education and architecture inspires the development of schools that benefit students, faculty, and the community.
CHAPTER 1

INTRODUCTION

School design in the twenty-first century poses increasing challenges to architects and educators, especially in light of recent research involving flexibility, size, identity, technology, safety, and sustainability/environmental quality. The goal of simply providing spaces that support learning is no longer sufficient. Schools today need to be stimulating, enriching, and motivating.

Current research on educational architecture focuses on two primary agents as catalysts for design decisions. The first involves utilizing the school’s or administration’s mission statement, or academic value system, as a basis for design planning. The second considers the impact of architectural factors, such as natural lighting, on student performance. In general, it appears that school design is primarily composed of administration goals and architectural applications, without significant consideration of occupant participation, satisfaction, and enrichment.

The players that have historically been involved in school design, architects and administrators, are beginning to look toward new sources for ideas and information, including the community, parents, faculty, and students. Outreach meetings have shown to be fairly effective, especially in garnering suggestions from the community, parents, and faculty. Unfortunately, these charettes tend to overwhelm the less vocal, but perhaps
more important attendee: the student. In order to fully understand the design problems that face architects and educators, the opinions of this critical population must be tapped.

Purpose of the Research

The primary purpose of this thesis is to explore the attitudes and opinions of students and faculty with respect to their current middle school design, in order to contribute to the conception of a new middle school prototype for the Clark County School District.

The secondary purpose of this thesis is to determine whether participation in the design of their middle school environment will establish a connection among student, faculty, and facility that will serve to enhance interest, motivation, and relationships.

Research Questions

The objectives of this thesis include evaluation of current scholarship on school design as it pertains to sociological/psychological dynamics, field study analysis of student and faculty reported opinions on their prototype middle school design, and determination whether participation in the design of their environment has the potential to improve relationships and encourage and motivate students and faculty.

The thesis focuses primarily on the predominant trends in educational architecture: flexibility, size, identity, technology, safety, and sustainability/environmental quality. These factors are examined as they pertain to the “social” (non-classroom) spaces of the school, such as house/pod areas, lockers/corridors, outdoor commons, cafeteria, and library, where students and faculty intermingle and socialize.
Significance of the Research

It is anticipated that occupant participation in the design of the new middle school facilities will not only promote better functioning schools, but also establish a connection among student, faculty, and facility. It is expected that participation in the design of their middle school environment can strengthen relationships and encourage and motivate students and faculty on an intrinsic level, such that interest and ownership of their school design promotes a better atmosphere for social and intellectual development.

It is expected that this trend will become increasingly important in the design of educational environments, as interest and ownership in community projects can produce great rewards.

This thesis was performed in conjunction with Tate Snyder Kimsey Architects. Tate Snyder Kimsey Architects is involved in the development of a new middle school prototype for the Clark County School District.
CHAPTER 2

REVIEW OF RELEVANT SCHOLARSHIP

Several key disciplines are relevant to school design, including architecture, education, sociology, and psychology. Perhaps in school design more than any other architectural building type, sociology and psychology are integral to program development. The current middle school model attempts to promote learning and achievement in a stimulating and enriching environment. However, the school environment cannot just be a housing for intellectual growth, it must be a place that fosters social development and drives intrinsic motivation in students and faculty. The challenge then, is to incorporate architectural research (on design techniques), educational research (to create an environment that serves the educational goals of the administration and faculty), and sociological and psychological research (on relationships and motivation) to create a middle school design that successfully serves the occupants on multiple levels.

Middle Schools Today

Middle schools comprise approximately one-eighth of all public schools in the United States. The National Center for Education Statistics (NCES) defines “middle school” as schools with grade spans beginning with 4, 5, or 6 and ending with grade 6, 7, or 8. According to NCES, “middle school” essentially refers to the intermediary phase of
schooling between elementary school and high school; as such, the grade ranges they include in their definition allow for flexibility among school districts to define when this intermediary phase should occur. The majority of the middle schools in the United States start with the sixth grade and end with the eighth grade; therefore, the two middle schools selected for this thesis mirror this configuration.

Although the scope of this thesis is confined to middle school facility design, it is worthwhile to briefly explore the major academic and social issues that plague middle schools today to establish a context for the analysis of middle school architecture in light of sociological/psychological dynamics.

The role of the middle school is twofold. First, middle schools ease the transition from elementary education to secondary education, as sixth, seventh, and eighth grade students do not fit well with elementary or high school students due to differences in maturity and development. Second, middle schools promote college preparation at an earlier age.

Although the middle school is considered necessary and important, the construct of the middle school introduces a number of issues. For example, students at middle school age (11-14) undergo multiple intellectual, social, emotional, and physical changes during this time, more so than seen in elementary or high school students. This transitional phase in social and physical maturity poses special challenges, which often lead to strained relationships between faculty and students. There is also a larger discrepancy in maturity between entering and exiting middle school students than, for example, entering

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and exiting high school students, thereby increasing concerns about compatibility and safety among students. These issues, coupled with ambiguous academic goals for this educational phase, create a schooling atmosphere that is challenging and often criticized.  

Juvonen et al., in a cooperative study with the RAND Corporation called *Focus on the Wonder Years: Challenges Facing the American Middle School*, states "Middle schools have been called the Bermuda Triangle of education and have been blamed for increases in behavior problems, teen alienation, disengagement from school, and low achievement." A study by the Carnegie Council on Adolescent Development, called *Turning Points: Preparing American Youth for the 21st Century*, concludes with the following statement:

> Middle grade schools – junior high, intermediate, or middle schools – are potentially society’s most powerful force to recapture millions of youth adrift. Yet too often they exacerbate the problems the youth face. A volatile mismatch exists between the organization and curriculum of middle grades schools, and the intellectual, emotional, and interpersonal needs of young adolescents.  

Although the success of middle schools has been heavily debated, educators generally believe that middle schools have the potential to provide a supportive,  

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3 Jaana Juvonen, Vi-Nhuan Li, Tessa Kaganoff, Catherine Augustine, Louay Constant, *Focus on the Wonder Years: Challenges Facing the American Middle School* (Santa Monica, CA: RAND Corporation, 2004) xvi.  

nurturing, and effectual environment for this transitional phase. In addition to extensive research and dialogue concerning academic achievement, educators are also looking at conditions that affect learning. These include factors that can enhance or diminish a student’s ability to learn, such as sociological/psychological dynamics of the age group, motivational factors, and school facility environment. It is here where architects and sociologists/psychologists are collaborating with educators to create a middle school environment that promotes the interdependency between intellectual and social development.

Predominant Trends

There are a few salient issues and trends that have been the focus of recent studies. The major “hot topics” that architects and educators must address in school design include flexibility, size, identity, technology, safety, and sustainability/environmental quality. These issues are pertinent to all school levels, including middle schools.

Middle school design, in particular, presents a unique set of challenges because of the intellectual, social, emotional, and physical changes that students undergo during their tenure. Additionally, teachers are an important factor since student-teacher relationships that are developed within this context are often difficult and strained. Therefore it is important that sociological and psychological considerations are made when exploring design problems and proposing solutions. For each architectural topic discussed below, the sociological and psychological implications for students and faculty are addressed so as to provide a basis for the issues that will be investigated by this thesis.
Flexibility

According to C. William Brubaker, author of *Planning and Designing Schools*, flexibility is a primary concern, since schools must be designed and built to endure several generations of students and sustain motivation among resident teachers. Recently, there has been a general increase in student body size, changes and updates in educational goals and direction, increased maturity of students, and integration of ever-advancing technology. External factors also play a role, such as violence, disease, and economic hardship. These changes require school environments that can adapt to new situations on a regular basis. Brubaker contends, “the key words are *flexibility and adaptability.*”^5

In order to create environments that evolve with the occupants, society, and technology, it is imperative that designers are aware of the sociological and psychological dynamics that occur among students and teachers. *Democracy, Chaos, and the New School Order*, written by Spencer Maxcy, addresses many of these issues. Maxcy describes the current and changing social forces that impact schools today, such as congestion, reformation of school goals, student maturity/exposure to adult issues, crime, AIDS, and poverty. He contends that younger students are particularly susceptible to these elements, since they are often too intellectually inexperienced to fully comprehend the issues, but certainly cognizant enough to notice their influence.^6

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Although Maxcy’s work elucidates numerous sociological issues that plague today’s schools, it is almost exclusively derived from an analysis of research by adult interest parties. He states in his introduction that “this text has been formed to help the participants and interested observers of the school restructuring controversy to understand both the nature of school reform and the intelligent means available for guiding changes leading to better schools for our children and our youth.” What is notably absent are the opinions and concerns of the students and teachers, which may be out of line with the issues that the administrators and other “interested” parties believe are fundamental.

Size

In addition to flexibility and adaptation, schools should be generally smaller, consisting of intimate environments that are specialized to small group social needs and individual learning styles. The Cunningham Group, an architectural firm specializing in educational architecture, reports that smaller schools deliver better student achievement than larger schools, and also promote improved behavior and student-teacher relations. Research sponsored by the Association for Supervision and Curriculum Development (ASCD) and the Council of Educational Facility Planners, International (CEFPI) concurs. In their publication on school design, Designing Places for Learning, they emphasize that architects and educators should be thinking small in terms of spatial planning. Their

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7 Maxcy xv.

8 Cunningham Group, Schools that Fit: Aligning Architecture and Education 2nd ed. (Minneapolis: Cunningham Group, 2003) 9-22.

research shows that superior student performance is linked to schools that provide areas for students to congregate and work in smaller groups and that allocate spaces for individual students to engage in varied learning activities.

One result of this research is a new prototype design for middle schools and high schools that involves smaller “houses,” “clusters,” or “pods,” each with their own identity, faculty, and resources. Kevin Sullivan, architect and author of “Middle School Program and Participatory Planning Drive School Design,” summarizes this subdivision design:

The house concept . . . literally dissolves the arbitrary boundaries used to divide information into academic subjects. [Houses are] small collections of flexible classrooms and support spaces which can accommodate virtually any type of subject matter and any form of instruction. The house concept allows students to remain within the house and have information travel to them. The key to this, architecturally speaking, is to design instructional spaces within the house to be function-specific rather than subject-specific. ¹⁰

According to ASCD and CEFPI, this subdivision of the larger institution has proven to be effective, especially at the educational levels where transition is especially stressful, such as in middle schools.

The implementation of smaller “houses” in school design has provided a strong positive impact on the sociological and psychological development of students, especially

in the transitional stages such as middle school. Juvonen et al.'s study contends that the major criterion for effective middle school design involves "the need for middle schools to ease the transition from elementary school, with an emphasis on the developmental needs of young teens, versus the need to facilitate the transition to high school, with an emphasis on academic rigor." Their research indicates that the "house" system is a positive solution in a nation where middle school students do not feel that their schools are pleasant places where they can develop and establish belonging.

Juvonen et al.'s research shows that the establishment of a sense of community in an intimate and supportive climate generally relates to more positive outcomes, including increased motivation and reduced behavioral problems. However, the "house" system has really only been explored as it pertains to classrooms and support spaces. It is speculated that the concept can be further refined to create "social" environments that are communal, motivating, and conducive to student interests. The primary resource on this type of upgrade will be the students and teachers, who spend their learning and leisure time in these spaces.

Identity

Another important design goal for schools is the promotion of identity and school pride, such that the school environment becomes a place that students and teachers want to be. Design for identity is by no means a universal application, as each community, age level, and academic agenda is different. It is critical then, that architects engage the

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11 Juvonen xvi.

12 Juvonen 49-50.
community, parents, faculty, and especially students in creating a school that fits their collective personality. An additional challenge of promoting an appropriate school culture is the issue of addressing the identities of the individual groups: a teacher-oriented school may not be fun for students and a student-oriented school may not be productive for teachers.

According to Terrence Deal and Kent Peterson, authors of *Shaping School Culture: The Heart of Leadership*, the potency of school culture in producing pride and identity cannot be underestimated.\(^\text{13}\) Culture, in this sense, represents the rituals and relationships that are special and integral to a positive school atmosphere. As it pertains to architecture, identity is often comprised of symbols and signs, such as the school mascot or school colors, that become tangible translations of culture. Deal and Peterson attest:

Symbols are cultural rallying points. They represent those intangible values that are difficult to express. Architectural forms convey values, as do the symbols and signs that adorn walls. And leaders are living logos; through their words and deeds they signal what is really important.\(^\text{14}\)

It has been acknowledged that architecture can motivate students and teachers by forging pride in their school. Could architecture motivate students and teachers further if they had input on the symbols and signs that are to convey their identity and culture? Would this involvement be even more salient if they actually participated in the decoration of their school environment?


\(^{14}\) Deal 60.
Safety

Security and safety are of primary importance in school design, and pose their own set of challenges. The benefits of community-based school design are significant, where schools become an open and welcome place for both students and community members. According to Brubaker, however, there is increasing concern about child security and safety in the school environment, and many educators and parents have expressed concerns about allowing “outsiders” into schools that can potentially steal from the school, vandalize school property, or harm children. Matters have worsened since the recent exhibition of student-to-student violence such as the events in Columbine, Colorado and several other schools in the United States and abroad. Architectural solutions to these issues include limited access to school buildings, metal detectors, access cards for students and teachers, closed campuses, and fencing around school grounds and parking lots. Although these measures will likely reduce security problems, how do they influence a student’s perception of safety?

From a sociological and psychological standpoint, these types of security measures can prove frightening to middle school students, who would like to view school as a safe haven in their community. When a young person must go through a metal detector to enter their school, their own sense of vulnerability is often heightened, not mitigated. The National Center for Education Statistics (NCES) reports that “students who must think about avoiding harm at school are diverting energy that should be expended on

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15 Brubaker 51.
learning." Is there perhaps a way to design safe schools without reminding students of impending danger?

**Technology**

The technological revolution in schools is a major factor in how educational spaces are designed and defined. School environments often include technology such as computers, electronic notebooks, and video terminals to assist in teaching. These methods will continue to evolve over time as technology changes and becomes more pervasive. Furthermore, students are more attuned to technology than ever, with the predominance of after school hobbies that revolve around media, such as video games and internet browsing.

Often, administrators are concerned that the increase in technology will increase cost, not just in purchasing technological hardware but in providing space for the equipment. On the latter issue, Merritt et al, authors of *The Middle School of the Future: A Focus on Exploration*, disagree, explaining that technology can save space. Historically, technology has required an increase in classroom and library size to accommodate computer and video stations. According to Merritt et al., the schools of the future can use technology to reduce space by utilizing the internet and electronic books to replace some of the square footage dedicated to book stacks. Although this idea has met some resistance by teachers and school librarians, Merritt et al. contend that as electronic resources become more prevalent, printed books will become less and less critical.

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The influence of technology in school design is still fairly recent, and there is little formal research on the position of students and teachers on the subject. Although it is speculated that most would agree to the convenience of technology, are there other issues that are important to students and teachers when designing technological spaces?

**Sustainability and Environmental Quality**

The final area of educational facilities design that is addressed in this thesis involves a recent trend toward sustainable design and environmental quality. According to Ben Graves, author of *School Ways: The Planning and Design of America’s Schools*, “As it turns out, architecture thoughtfully attuned to nature holds the promise of better learning environments at the lowest costs.” The research review of numerous sources concur: natural lighting and proper indoor air quality lead to better performance and productivity, as well as teacher and student well-being.

Although there is a general consensus that natural lighting has environmental benefits, not everyone agrees on how daylight should be brought indoors. Brubaker explores the use of windows as they pertain to light, views, and energy conservation. Although these all appear to be positive attributes, he notes that the use of windows is a point of contention for many educators and parents because they can potentially cause distraction and safety issues. It is worthwhile to evaluate environmental design with both the positive and negative results in mind; it should promote learning and comfort, while also providing focus and security.

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Participatory Outcomes

In addition to researching student and faculty opinions on school design as it pertains to the predominant trends in educational architecture, a secondary purpose of this thesis is to determine whether participation in school design can strengthen student and faculty relationships and enhance motivation through ownership and involvement. There is minimal official research in this area, other than the acknowledgement that pride and ownership of schools leads to a higher valuation of learning.

A study in Europe called the Euridem Project focuses on student opinions and views as they relate to school environments. Their findings are revolutionary, although most likely not unexpected. According to Reva Klein, author of *We Want Our Say: Children as Active Participants in their Education*, “my own and others’ research in the UK and the United States has shown time and again that children and young people who are on the margins of the education system or who have left it altogether speak of the lack of respect for students in their schools and the negative impact it has had on them.”^{19} Klein acknowledges the lack of research in this area, noting that there is virtually no scholarly literature that indicates that student participation in their educational experience promotes motivation and achievement. However, she contends that surveys and anecdotal evidence strongly suggests that this is the case.

Klein references a study by Derry Hannam (currently unpublished) which presents the following conclusions: participative schools had significantly lower drop-out rates than non-participatory schools, attendance was slightly higher in participatory schools,

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and academic results were higher than in non-participatory schools. Klein's summary is poignant, "The substance of it is that they [students] respond with maturity and responsibility to being listened to, seeing their suggestions and recommendations being acted upon and having a part in running their schools."^{20}

The Euridem Project and Klein's research is not particular to school design; rather, it explores the general involvement of students in matters such as curriculum, scheduling, and school attire/lunches/facilities. The research for this thesis intends to evaluate the impact of student participation on the design of their school environment, as well as faculty involvement in the design of their workplace.

\(^{20}\) Klein 12.
CHAPTER 3

METHODOLOGY

Two major resources were employed to address and answer the questions proposed in this thesis. Review of published research in the form of books, studies, reports, and journal articles formed the contextual basis for the thesis. The topics discussed in Chapter 1 and Chapter 2 were explored utilizing the research that can be found at University of Nevada, Las Vegas (UNLV) and through other academic resources. Organizations such as the Association for Supervision and Curriculum Development (ASCD), the Council of Educational Facility Planners, International (CEFPI), and the National Middle School Association (NMSA) provided additional relevant information. Bibliographical information found in the resources served as a starting point for additional exploration.

The second approach to this thesis involved a field study on middle school design, especially in areas where published research was limited. Various methods of data collection were employed, including questionnaires, a focus group session, and a photographic survey. The paper questionnaires and the photographic survey enabled students and faculty to express their opinions privately. Since students at middle school age may have some difficulty verbally expressing their opinions on design topics, photography was encouraged so that they could provide images of elements that they liked and disliked. Focus group sessions provided a collaborative environment for
discussion of the research topics. It was critical to the integrity of the data that all parties felt as if they could speak freely during the focus group sessions in the exploration of design problems and solutions. The researcher provided structure and guidance so that the focus group sessions aligned with the study objectives. Although the suggestions of students and faculty were not actually employed in a physical middle school, a post-involvement evaluation was conducted to determine whether participation in their school design influenced interest, motivation, and relationships.

Since the field study employed sociological research with students and faculty, proper institutional review board approvals were obtained before commencement. A research study protocol, informed consent documents, and recruitment documents were prepared and submitted to the University of Nevada, Las Vegas Office for the Protection of Research Subjects (OPRS) in compliance with federal, state, and university guidelines (Appendix I). In August 2006, institutional review board approval was received from the OPRS to proceed with the field study.

Additionally, the research protocol and related documents were submitted to the Clark County School District Research Review Board for review and approval (Appendix I). Sponsorship from the Clark County School District was garnered to facilitate this process.

Field Study Protocol

A research study protocol was developed to provide the parameters of the field study research, including the research problem, scope of research, research subject demographics, location of study, recruitment practices, informed consent procedures,
research activities, privacy and confidentiality considerations, and risks/benefits. The protocol served as the primary reference document for all study-related procedures.

**Research Problem**

It is believed that the participation of students and faculty in the evaluation and critique of their current school design could provide architects with important insight in the creation of better schools for learning and social development. Current research on educational architecture focuses on two primary agents that influence school design. The first involves utilizing the school’s or administration’s mission statement, or academic value system, as a basis for design planning. The second considers the impact of architectural factors, such as natural lighting, on student performance. In general, however, student and faculty participation, satisfaction, and enrichment have not been formally explored. This study intends to gather information from students and faculty that can potentially be used in the design of the new middle school prototype for the Clark County School District (CCSD).

Additionally, it is anticipated that occupant participation in the design of the new middle school facilities will not only promote better functioning schools, but also establish a connection among student, faculty, and facility that will serve to enhance interest, motivation, and relationships.

**Scope of Research**

The scope of research was confined to middle school design as it pertains to sociological/psychological dynamics, analysis of student and faculty reported opinions on school design, and determination whether participation in the design of their middle school environment has the potential to encourage and motivate students and faculty.
The research focused on flexibility, size, identity, technology, safety, and sustainability/environmental quality, since these are the predominant trends in architectural and educational research as they pertain to school design. For each of these categories, problems and solutions for each “social” space, including house/pod areas, lockers/corridors, outdoor commons, cafeteria, and library, were identified.

**Research Subject Demographics**

A total of 65 research subjects, 59 students and 6 faculty members (administration and teachers), were recruited to participate in this research study. The participant population included 20 sixth-grade students, 19 seventh-grade students, 20 eighth-grade students, and 6 faculty members. Demographic data were gathered, including age and ethnic background, to help assess whether there were major differences among responses from different age or ethnic groups. In the student group, there were 18 eleven-year-old students, 16 twelve-year-old students, 20 thirteen-year-old students, one fourteen-year-old student, and four students who did not indicate their age. In the faculty group, the age range was between 23 and 34. Ethnic data indicated that there were 16.92% Hispanic participants, 9.23% African American participants, 3.08% Asian participants, 50.77% White participants, 15.38% Other participants, and 4.62% participants who did not indicate their ethnicity (Figure 1).
Location of Study

Two middle schools were selected to participate in this research study, Del E. Webb Middle School and Jerome D. Mack Middle School. Selection of the two middle schools was determined by their date of opening and demographic profile.

Middle school design in the Clark County School District is a prototype design, where one design is established and used repeatedly throughout the school district as new schools are built. Although the primary intent of the prototype method is to maintain cost effectiveness via duplication of an approved design, the prototype model does undergo some evolution over time as issues are raised from previously built schools. As a result, the most recently built middle schools are slightly different from the previous generation. Based on the foregoing, the middle schools that were selected were from the newest generation of the middle school prototype, having opened in Fall 2005.

The two middle schools that were selected vary in their student demographics, which provided a broad-spectrum of potential participants from various ethnic backgrounds.
Combined, their demographic profile closely reflects that of the Clark County School District. According to the 2005-2006 CCSD Region Accountability Report, the overall demographic profile for the district was 36.8% Hispanic, 14.4% African American, 8.5% Asian, and 39.5% White. Del E. Webb’s demographic breakdown for 2005-2006 was 15.0% Hispanic, 6.4% African American, 17.2% Asian, and 60.7% White, while Jerome D. Mack Middle School’s demographic breakdown for 2005-2006 was 61.3% Hispanic, 14.0% African American, 4.6% Asian, and 19.7% White. Their averaged demographic profile is 38.2% Hispanic, 10.2% African American, 10.9% Asian, and 40.2% White, which approximates the overall school district profile.21

Recruitment Practices

Before the field study commenced, the principal at each school was informed about the purpose and design in order to obtain permission to conduct the study at their facility. Participation in the study was voluntary, and participants were informed that their willingness to participate would not affect their grades or employment (as applicable) in either a positive or negative manner.

The inclusion criteria for participation in the study were as follows: (1) the potential participant must be a student or faculty member at Del E. Webb Middle School or Jerome D. Mack Middle School; (2) the potential participant must be able to provide voluntary consent/assent to participate; and (3) the potential participant must speak English. Participants were excluded from research study participation if they were: (1) students

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who were unable to obtain parental/guardian permission to participate; (2) non-English speaking; or (3) unable to meet the time commitment as required by the protocol.

Although student and faculty participants were required to speak English, recruitment and informed consent documents for parents/guardians were prepared in both English and Spanish.

Student recruitment involved two major activities. First, a flyer regarding the study was distributed to parents at the schools' Open House so they were aware of the research study (Appendix I). Second, all students were verbally informed about the study during their mandatory science classes, which ensured that all students were given the opportunity to learn about the study and elect to participate if interested. During this discussion, study activities, confidentiality considerations, risks, and benefits were communicated and questions were addressed. Special consideration was made to ensure that students understood the voluntary nature of participation and to assure that they completely understood the purpose and requirements of the study. Participation was on an individual basis; it was not required that all students in a classroom participate and the teacher may or may not participate.

Students who expressed interest were given a Student Informed Consent/Assent to Participate and a Parent Informed Consent/Permission for a Minor to Participate (Appendix I). Students were encouraged to take both documents home in order to discuss the study with their parent(s) or guardian(s).

Students were asked to return both the Student Informed Consent/Assent to Participate and a Parent Informed Consent/Permission for a Minor to Participate to their science teachers within a designated time frame. Those who returned both forms,
completed as required, were considered eligible for participation. Eligible students were stratified by grade level. Within each grade, eligible students were entered into a research randomizer and ten student participants from each grade level were randomly selected for participation. In addition, five alternate student participants were identified via random selection in the event that one of the ten originally selected student participants elected not to participate.

Faculty recruitment involved providing a brief flyer describing the study to solicit participation (Appendix I). Faculty members were encouraged to contact the researcher with questions about the study and potential participation. Those who were interested in participating were given an Informed Consent to review and sign.

**Informed Consent Procedures**

An informed consent meeting was required for all study participants. Obtaining informed consent involved more than procuring a signed informed consent document; it was a process during which the researcher and participant privately discussed the study in detail. This discussion covered the study’s purpose, activities, voluntary nature, confidentiality considerations, risks, and benefits. The informed consent process was especially critical for minors, as it was imperative that they understood the nature of the study and its obligations prior to signing the informed consent document. It must be noted that a signed informed consent document does not establish a “contract” between the researcher and participant. Rather, it outlines the study and defines the commitments made by the researcher, but does not obligate the participant in any way to continue participation or agree to any exculpatory elements.
Student participants, as minors, were required to take home a Student Informed Consent/Assent to Participate and a Parent Informed Consent/Permission for a Minor to Participate for discussion with their parent(s) or guardian(s). Parents were encouraged to contact the researcher with any questions they had about the study. They were also encouraged to review the questionnaires, focus group content, or photographic survey procedures. Once the parents were comfortable with allowing their child to participate, they were required to sign the Parent Informed Consent/Permission for a Minor to Participate and return it to the researcher.

Selected student participants were retrieved from non-core classes to meet with the researcher individually. The researcher first verified that the Parent Informed Consent/Permission for a Minor to Participate was actually signed by the student participant’s parent(s) or guardian(s). Subsequently, the study activities and associated elements were discussed with the student participant, and the researcher asked questions to achieve assurance that the student participant understood the nature of the study and its obligations. Once both the researcher and student participant questions were satisfactorily addressed and answered, the student participant was asked to sign and date the Student Informed Consent/Assent to Participate, thereby establishing enrollment in the study.

Faculty participants, as adults, were provided with an Informed Consent as part of the recruitment procedures. Interested faculty members met with the researcher individually to review the study activities and associated elements. Once all questions were satisfactorily addressed and answered, the faculty participant was asked to sign and date the Informed Consent, thereby establishing enrollment in the study.
Research Activities

Participation in the study lasted approximately four weeks. Each week, participants were asked to participate in a meeting at their middle school that lasted approximately one hour. The total study time commitment was approximately four hours.

Once the informed consent was signed and participants agreed to participate in the study, they were asked to complete Questionnaire #1, a demographic questionnaire that requested information on their grade (if applicable), age, race, and school (Appendix II). The questionnaire did not ask for their name or any other specific identifying information. The questionnaire was used to gain generalized data about the study participants to determine whether there were any trends among grades, age, ethnic, or school groups.

The study activities took place in a series of four meetings. Each meeting hosted a specific activity as follows:

(1) Meeting 1 involved distributing Questionnaire #2, which asked questions about the participant's likes and dislikes of particular design elements in the "social" spaces at their school (Appendix II). This questionnaire also asked about design ideas that participants thought might improve or strengthen relationships among students/faculty and between students and faculty. The primary purpose of Questionnaire #2 was to obtain quantitative data about participant opinions on their school design.

(2) Meeting 2 was a focus group session, where participants could voice their opinions and suggestions about their school design in a judgment-free environment. The focus group session was a structured discussion led by the researcher, and mostly
re-addressed the issues raised in Questionnaire #2. The main purpose of the focus group session was to obtain qualitative data about participant opinions on their school design.

(3) At Meeting 3, participants were asked to participate in a photographic survey of their school design. Participants were provided with a disposable camera and placed into teams containing both students and faculty. Each team was asked to walk around the school campus and photograph the design elements that they liked and disliked. Participants were asked to take notes on the items that they photographed, explaining why they identified certain objects as positive or negative design elements. The primary purpose of the photographic survey was to support the data gathered in Questionnaire #2 by allowing students to visually identify design elements, especially since students at this age may have difficulty verbally articulating specific design elements and their reaction to these elements.

(4) Meeting 4 was the final meeting, where Questionnaire #3, a concluding questionnaire, was distributed and completed (Appendix II). This questionnaire asked whether the participant's involvement in this study enhanced or reduced their attitude toward their school and/or other students and faculty. The intent of Questionnaire #3 was to address the secondary purpose of this thesis, which is to determine whether participation in the design of their middle school environment encouraged and motivated students and faculty on an intrinsic level. Student participants who were enrolled in the study via the informed consent process were provided with a schedule of meetings based on their class curricula. Faculty participants who were enrolled in the study via the informed consent process were
allowed to complete certain study procedures, such as the questionnaires, on an individual basis.

Privacy and Confidentiality

Protection of privacy and confidentiality of research participants is an important responsibility of the researcher. Privacy is concerned with a person's desire to control access of themselves to others. Confidentiality pertains to data, and involves the researcher's agreement with the participant about how the participant's identifiable information will be managed and disseminated.

The methods used to ensure privacy and confidentiality were multi-layered. Participant names were obtained during the informed consent process, although further study activities involved the use of a subject number. The participant name and subject number affiliation was and continues to be kept confidential by the researcher, and will only be used in the event of an audit requiring evidence that data collected was from participants who had provided consent. During and after the study, all identifiable data were and will be managed by the researcher as indicated in the protocol. All publications resulting from this research will not contain any identifiable participant information.

Questionnaire #1, the demographic questionnaire, requested information such as grade (if applicable), age, race, and school, but did contain the actual participant name, only their subject number. None of the questionnaires nor photographic evaluation surveys contain names or any specific identifying features, only subject numbers. Focus group sessions gathered information that is not related in any way to participant name or subject number; it was just a general collection of group information.
Since the study involved participants in a school setting, and involved participation in focus group sessions, others in the study or school may have become aware of a particular student or faculty member's participation. However, due to the voluntary nature of participation, and the nature of the data being gathered (non-personal, opinion-based), it is not anticipated that this circumstance will compromise privacy.

Although the researcher communicated verbally with the participants by name (i.e., during conversation), their identifying information was not included on any data gathered from the subject. Special considerations were made if the participant could be identified via indirect identifiers (e.g., the only Hispanic volunteer in the 7th grade sample pool).

Informed consent documents containing participant names and the name-subject number register will be kept in a secure location at the School of Architecture main office. After the required three year data retention period, these documents will be destroyed.

Since this study involved minimal risks to participants, and the data collected is not sensitive from a safety standpoint, a Certificate of Confidentiality was not pursued. However, appropriate measures were put in place to ensure that identifiable information (e.g., informed consent documents) was and will continue to be kept secure.

**Risks and Benefits**

Part of any research protocol involves assessing the risks or substantial stressors that a participant may develop as part of the research activities. In addition to general questions about design (size, colors, etc.), participants were asked about design ideas that might improve or strengthen relationships among students/teachers and between students and teachers. Concluding questionnaires asked whether participants felt that their
involvement in this research study enhanced or reduced their attitude toward their school and/or other students and teachers. These areas of questioning could make participants feel uncomfortable. The risks to research participants also included the potential inconvenience of using their lunch hour or other approved time by the school administration for research data collection.

To mitigate any untoward risks, the researcher informed participants that they may abstain from answering any questions in a questionnaire or during the focus group session that make them feel uncomfortable. Participants were also advised of the confidentiality measures inherent in the study. Efforts were made to ensure that meeting times for questionnaire administration, focus group sessions, or photographic evaluation did not impinge on student learning, school curriculum, or extracurricular activities.

The benefits of a study are evaluated in a twofold manner. First, benefits to individual participants are evaluated. The probable benefits for the individual research participants included enhanced interest and knowledge in design, collaboration with peers, and being involved and having their opinions voiced. Additionally, the benefit of participation in the design of their middle school environment could encourage and motivate students and faculty on an intrinsic level, such that interest and ownership of their school design promotes better relationships and learning. Second, benefits to a larger population, such as academia or society, are evaluated. It is postulated that the knowledge gained from this study has the potential to influence the design of the new middle school prototype for the Clark County School District, which can provide long term benefits for the community, school district, administration, faculty, and students.
CHAPTER 4

RESULTS

The results from the field study address the thesis purpose and objectives in three ways:

(1) Existing Design: The current design, layout, functionality, and social quality of the Clark County School District (CCSD) middle school prototype are assessed in order to establish a context within which study data can be evaluated.

(2) Predominant Trends: The study provides a comprehensive view of participant opinions on the predominant trends in educational architecture (flexibility, size, identity, technology, safety, and sustainability/environmental quality) as they pertain to the “social” spaces of the current CCSD middle school prototype (house/pod areas, lockers/corridors, outdoor commons, cafeteria, and library). It is anticipated that the data will serve to support the primary purpose of this thesis, which is to utilize participant opinions in the conception of a new middle school prototype school for CCSD.

(3) Participatory Outcomes: The study reveals whether participation in the design of their middle school environment can encourage and motivate students and faculty on an intrinsic level. The intent of this inquiry is to address the secondary purpose of this thesis, which is to determine whether participation in the design of their middle
school environment will establish a connection among student, faculty, and facility that will serve to enhance interest, motivation, and relationships.

The field study involves four primary sources for data collection. The first source, Questionnaire # 2, quantitatively assesses participant opinions on their current middle school design. The second source, the focus group session, allows the researcher to obtain qualitative information on the reasoning behind participant responses in Questionnaire # 2. The third source, a photographic survey, serves to support the data gathered in Questionnaire # 2, allowing students to visually identify design elements, especially since students at this age may have difficulty verbally articulating specific design elements and their reaction to these elements. The fourth source, Questionnaire # 3, a concluding questionnaire, asks whether participant involvement in this research study enhanced or reduced their attitude toward their school and/or other students and faculty.

Data collected from the field study were analyzed to obtain both quantitative and qualitative assessments of participant opinions on their current middle school design. In addition to a cumulative evaluation of participant opinions, the data were also evaluated cross-sectionally to provide a comparative analysis between schools and among grade levels.

Existing Design:

Current Middle School Prototype

The current design, layout, functionality, and social quality of the CCSD middle school prototype are assessed in order to establish a context within which study data can be evaluated.
In the following sub-sections, the design of the current middle school prototype is described, with focus on the "social" spaces, and participant opinions regarding the layout, functionality, and social quality of each "social" space are discussed, in order to provide general information on existing perception of these spaces.

**Design**

The current CCSD middle school prototype consists of three house/pod areas with associated classrooms/laboratories and lockers/corridors, a performing arts pod, a cafeteria, a library, a gym/physical education area, and a main office building. These facilities surround a central outdoor common space. The thesis focuses on the "social" spaces of the school: house/pod areas, lockers/corridors, outdoor commons, cafeteria, and library. Figure 2 identifies these spaces in the floor plan of the CCSD middle school prototype.

![Figure 2. Plan of the CCSD middle school prototype ("social" spaces highlighted).](image-url)
The three house/pod areas correlate to the sixth, seventh, and eighth grade levels such that each grade level has its own house/pod. Each house/pod involves a central U-shaped corridor with classrooms positioned along the outside of the corridor and science and computer laboratories positioned inside the corridor. Boys and girls restrooms are accessible from one side of the U-shaped corridor. The corridor is approximately 10 foot wide, with lockers lining both sides. The corridor is the only circulation method for students and teachers to access the classrooms and laboratories. The U-shaped configuration of the corridor allows for two points of ingress and egress from the outdoor commons. Figure 3 shows a sketch of the typical house/pod area for the sixth, seventh, and eighth grade levels.

Figure 3. Sketch of a typical house/pod configuration.
Figure 4. Exterior view of a house/pod.

Figure 5. Exterior view of the entrance to a house/pod.

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The performing arts pod has a similar configuration to the others, with a U-shaped corridor and classrooms along the outside and inside. The major difference is that the classrooms (e.g., orchestra room, band room) are larger and therefore fewer in number, and the lockers are used exclusively for instrument storage. The performing arts pod also includes a medium sized theater/multipurpose room.

The four houses/pods are positioned on either side of the outdoor common space. The sixth and seventh grade houses/pods are positioned next to each other and across from the eighth grade and performing arts house/pods. Figure 7 shows a relational diagram for the four house/pod areas.
The outdoor commons serves as the major connection point and circulation conduit for all of the school buildings.

Figure 8. View of the outdoor commons area.
The cafeteria is a large open room with food pick-up stations along one side and long cafeteria tables occupying the remainder of the space. The food pick-up stations are a series of service points with a line painted along the floor for circulation control (the circulation control line was added by the school administration after the school opened). Glass block is used along the wall that separates the parking lot from the school. The glass block provides natural daylighting while also ensuring visual security from outsiders.

Figure 9. Interior view of the cafeteria.

The library contains computer stations, book stacks, and work areas within a large, open space. A small lounge/reading area is also provided.
Figure 10. Interior view of the library.

**Layout and Functionality**

The following questions ask participants about the layout and functionality of the "social" spaces in their middle school in order to determine the existing perception of these spaces.

<table>
<thead>
<tr>
<th>Question</th>
<th>YES</th>
<th>NO</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Do you like the “House” or “Pod” system?</td>
<td>YES</td>
<td>NO</td>
</tr>
<tr>
<td>2. Do you like the way that the lockers/corridors are designed?</td>
<td>YES</td>
<td>NO</td>
</tr>
<tr>
<td>3. Do you like the way the outdoor common areas are designed?</td>
<td>YES</td>
<td>NO</td>
</tr>
<tr>
<td>4. Do you like the way that your cafeteria is designed?</td>
<td>YES</td>
<td>NO</td>
</tr>
<tr>
<td>5. Do you like the way that your library is designed?</td>
<td>YES</td>
<td>NO</td>
</tr>
</tbody>
</table>
Overall, student participant responses to Question 1, which inquires about participant opinions on the house/pod system, are about equal. Data analysis reveals that 51% of student participants like the house/pod system. However, faculty participant responses to Question 1 are quite different, with 100% indicating that they like the house/pod system.

Although the generalized data indicate that the house/pod system is favored by approximately half of the student participants, analysis between schools and among grades shows salient differences. At Del E. Webb Middle School (DEW), 64% of student participants report that they like the house/pod system, in comparison to Jerome D. Mack Middle School (JDM), where only 37% of student participants report they like the house/pod system.

In general, favor of the house/pod system declines in the higher grades. The data indicate a decreasing trend such that 60% of sixth grade respondents, 53% of seventh
grade respondents, and 39% of eighth grade respondents report that they like the house/pod system. A possible explanation for this trend could be based on the theory that the house/pod system is a helpful way for students to transition from elementary to middle school. Therefore, the house/pod system would be most useful for the sixth grade students, while perhaps becoming less critical for the eighth grade students.

The reasons posted in favor of the house/pod system include separation between grades, easier transition from elementary to middle school, community environment, lockers and classes in close proximity, and increased safety. The majority of participants who dislike the house/pod system note that the house/pod areas are too crowded/too small and the house/pods are too far apart from each other and the other spaces in the school. Additional comments suggest that the ingress and egress doors and vestibule in the house/pod areas should be larger, as there is often significant bottle-necking of students between classes. A majority of student participants find the restrooms in the house/pod areas to be problematic, citing that they would be easier to access if there were two restrooms per house/pod or if the restrooms penetrated through to both sides for proximal access from all areas. Several student participants also suggest more or larger drinking fountains in the house/pod areas, stating that they are typically over-crowded. Some criticize the concept of the house/pod system, indicating that they do not think that any separation is needed among grades. JDM student participants mostly cite the one-way corridor policy in their house/pod areas as problematic, especially if there is a need to use the restroom or visit a locker.
Responses to Question 2, which asks about the lockers/corridors design, are largely negative. Only 31% of student participants state that the lockers/corridors design is effective, while 69% express disfavor of the design. Faculty participant responses are similar to the general student participant population, with only 33% of respondents expressing that the design is effective.

At DEW, only 21% of student participants favor the lockers/corridors design, while a large majority, 79%, express that they dislike the arrangement. The results are less discrepant at JDM, with 41% of student participants indicating that they like the lockers/corridors design and 59% expressing that they dislike the design.

Although the lockers/corridors design is generally determined to be problematic by all respondents, the sixth grade student participants are the least critical, with 60% indicating that they dislike the arrangement. The seventh and eighth grade student

Figure 12. Do you like the way that the lockers/corridors are designed?
participants are more critical, with 76% (seventh) and 72% (eighth) stating that the lockers/corridors arrangement is unsatisfactory.

Of the students and faculty who dislike the lockers/corridors design, almost all cite crowding as a major problem. Student participants specifically note that the lockers in the corners of the corridors are difficult to access. Respondents strongly believe that the lockers should not be placed in the circulation areas, because of congestion due to students stopping and opening lockers. They also note that safety is a concern, especially for those with bottom lockers, as it is easy for students to be pushed or for student belongings to be kicked into the circulation space. Other safety concerns include pushing and rough-housing in the corridors, which could result in someone being pushed against an open locker door and being seriously injured. Additional comments include the desire for larger lockers and lockers that are more durable.

Figure 13. Do you like the way the outdoor common areas are designed?
Question 3 asks participant opinions on the outdoor commons space. Overall, 57% of student participants state that they like the design of the outdoor commons. Faculty participants are much more in favor of the outdoor commons design, with 83% of respondents stating they like the space.

The same statistic is found at each of the two schools, DEW and JDM, with 57% of student participants at each school indicating that they like the design of the outdoor commons.

More sixth grade student participants find the outdoor commons to be an effective social environment, with 70% reporting that they favor the space. The seventh and eighth grade student participants are roughly divided down the middle on whether the outdoor commons is designed effectively for social interaction.

Those who favor the design of the outdoor commons space state that they enjoy the outdoor experience, like the planters, and find it to be a pleasant place to “hang out.” Overwhelmingly, participants report that the outdoor commons is underused, and suggest adding benches and tables to make the outdoor commons design more successful.

Several respondents comment that the shading devices are effective over the walkways, but request additional shade over the center areas of the outdoor commons. Others note that the space is just used for circulation, unnecessary, or too large.

In general, participants view the outdoor commons as an asset to their school design, and would like it to be more functional so that it can be better utilized as a social space.
Figure 14. Do you like the way that your cafeteria is designed?

Student participant responses to Question 4, which asks about the design of the cafeteria, are generally positive. In general, 62% of student participants indicate that they favor the current cafeteria design. Interestingly, faculty responses are in opposition to the general student participants, with only 33% of respondents expressing that they like the cafeteria design.

Student participants at DEW have the most favorable response, with 71% of student participants indicating that they like the current cafeteria design. At JDM, student participant responses are more equal, with 51% in favor of their current cafeteria design.

Like Question 3, more sixth grade student participants find the cafeteria to be an effective social environment, with 75% reporting that they favor the space. The seventh and eighth grade student participants are roughly divided down the middle on whether the cafeteria is designed effectively for social interaction.
Respondents who like the cafeteria design note that the design functions well. Student participants indicate that the cafeteria is a good space to socialize with friends, although they also cite crowding and excessive noise as problematic for social encounters. Participants state that the food pick-up stations function well, although the circulation control could use improvement. The current system, which consists of lines painted on the floor to establish wayfinding, can be confusing and lead to line-cutting, according to student and faculty participants. Most student respondents feel that that the table arrangement, consisting of long and linear tables, is not socially conducive, and many suggest smaller, round tables as an alternative. Additionally, participants comment that there should be more ingress and egress doors, as there is often significant crowding of students attempting to enter and exit the cafeteria.

![Figure 15. Do you like the way that your library is designed?](image-url)
Question 5, concerning the design of the library, reveals overwhelmingly positive responses from all groups. Student participants largely favor the library design, with 91% stating that the library functions well. Faculty participant opinions parallel the students, with 100% reporting that the library design works well.

Student participant responses at DEW and JDM are similar to the overall student participant population, with 92% and 89%, respectively, citing that they favor the library design.

Likewise, there are no major discrepancies in opinion among grades, with the sixth, seventh, and eighth grade responses paralleling the overall student participant statistics.

Participants note that the library is a well-functioning and comfortable space with good natural lighting. Many respondents suggest that the library should include both social (quiet) and non-social (non-quiet) study spaces to accommodate individual studying and group projects/activities. Additional comments include providing a more comfortable lounge space for quiet reading and having more inspirational and creative decorations to motivate imaginative thinking.

Social Quality

The following questions ask participants about the social quality of each space in order to identify areas that promote and hinder social interaction, so that architects and educators have an understanding of the relative success of the various “social” spaces when designing the new middle school prototype.
1. In which area(s) do you think you have the best social interaction with your classmates (circle all that apply)?
   House/Pod Area  Lockers/Corridors  Outdoor Commons  Cafeteria  Library  Why?______________

2. Please list up to three things in your school design that you think help you have a good social interaction with your classmates.

3. In which area(s) do you think you have the worst social interaction with your classmates (circle all that apply)?
   House/Pod Area  Lockers/Corridors  Outdoor Commons  Cafeteria  Library  Why?______________

4. Please list up to three things in your school design that you think make you and your classmates more likely to have problems mingling or have a bad social interaction.

5. In which area(s) do you think you have the best interaction with your teachers (circle all that apply)?
   House/Pod Area  Lockers/Corridors  Outdoor Commons  Cafeteria  Library  Why?______________

6. Please list up to three things in your school design that you think help you have a good interaction with your teachers.

7. In which area(s) do you think you have the worst interaction with your teachers (circle all that apply)?
   House/Pod Area  Lockers/Corridors  Outdoor Commons  Cafeteria  Library  Why?______________

8. Please list up to three things in your school design that you think make you and your teachers more likely to have problems communicating.

Student participants report that they have the best social interaction with their classmates in the outdoor commons and cafeteria, citing that these spaces allow for students to mingle within and among social groups. Suggestions for improvement in these areas include placement of seating areas in the outdoor commons and use of smaller round tables in the cafeteria to further promote social interaction. Student participants identify the worst social interaction areas as the house/pod areas, lockers/corridors, and
library. Most student participants complain that the house/pod areas and lockers/corridors are too crowded, often resulting in tension among students and social groups. The library is also cited as a poor social interaction area, especially with respect to group projects/activities. Many respondents suggest that the library should include both social (quiet) and non-social (non-quiet) study spaces.

Student participants indicate that they have the best social interaction with their teachers/faculty in the house/pod areas and lockers/corridors because this is where they spend the majority of their time and have the most one-on-one interaction with their teachers/faculty. One suggestion for improvement includes the integration of alcove-type spaces where students and teachers/faculty can step out of the circulation areas to talk. The worst social interaction areas between students and teachers/faculty are the outdoor commons and cafeteria. The primary complaint about these spaces is that they are impersonal and that the student-to-teacher ratio is too great to have a good connection between students and teachers/faculty.

Faculty participants report that they have the best social interaction with their colleagues in the house/pod areas and breakroom, citing that these are the locations where they see each other the most. Suggestions for improvement include integrating a small breakroom in each house/pod area where teachers/faculty can obtain a beverage or briefly converse between class periods. Faculty participants identify the outdoor commons and library as the worst areas for social interaction, noting that these are the areas least frequented by faculty. Many respondents suggest these areas could be pleasant places for social interaction if there were adequate places to sit and relax.
Faculty participant responses regarding social interaction with students closely resemble student participant opinions. Like the student participants, faculty participants indicate that they have the best social interaction with their students in the house/pod areas and lockers/corridors because this is where they spend the majority of their time and have the most one-on-one interaction with their students. As with the student participants, the worst social interaction areas between teachers/faculty and students are the outdoor commons and cafeteria. The biggest issues that faculty participants note are too much space in these areas, difficulty reaching individual students, and students disinterested in interacting with faculty.

Predominant Trends:
Analysis of Participant Opinions

The data that were collected provide a comprehensive view of participant opinions on the predominant trends in educational architecture (flexibility, size, identity, technology, safety, and sustainability/environmental quality) as they pertain to the “social” spaces of the current CCSD middle school prototype (house/pod areas, lockers/corridors, outdoor commons, cafeteria, and library). It is anticipated that the data will serve to support the primary purpose of this thesis, which is to utilize participant opinions in the conception of a new middle school prototype school for CCSD.

For each of the predominant trends discussed below, the focus is primarily on the “social” spaces articulated throughout this report. However, if there are prominent trends in participant responses pertaining to other “social” spaces (e.g., gym, parking lot), it will be noted in each section as applicable.
Flexibility

The following questions regarding flexibility attempt to elucidate participant opinions on current and long-term flexibility, as well as identify which “social” spaces participants feel are most and least flexible.

1. Do you think that the spaces in your school are flexible and can be used for different social activities and group sizes?  
   YES  NO

2. Which area(s) do you think are the most flexible (circle all that apply):
   House/Pod Area  Lockers/Corridors  Outdoor Commons  Cafeteria  Library  Other: _______________________

3. Which area(s) do you think are the least flexible (circle all that apply):
   House/Pod Area  Lockers/Corridors  Outdoor Commons  Cafeteria  Library  Other: _________________________

4. Looking ahead, do you think that the spaces in your school can adjust over time for the needs of future students and teachers?  YES  NO

Student Participants

Faculty Participants

Del E. Webb

Jerome D. Mack

6th Grade

7th Grade

8th Grade

Figure 16. Do you think that the spaces in your school are flexible and can be used for different social activities and group sizes?
Student participant responses to questions that inquire about flexibility of spaces in their current middle school design are generally positive. Data show that 62% of student participants consider the spaces in their school to be flexible. Faculty participants show slightly less optimism about flexibility, with 50% indicating that the spaces in their school can be used for various social activities and group sizes.

Student participants at DEW are the most positive about their school’s flexibility, with 79% reporting that the spaces in their school can be used for various social activities and group sizes. Student participants at JDM, however, largely believe that their school design is inflexible, with only 44% of respondents reporting that the spaces in their school can be used for various social activities and group sizes. One of the reasons that JDM student participants believe that their school spaces are inflexible may pertain to their student population size, which is approximately 30% larger than DEW, despite the fact that their school facilities are the same size. Due to the larger student body population at JDM, student participants continually report that their school feels too crowded.

Among grades, most sixth and eighth grade respondents believe that their school design promotes flexibility, with 70% and 72%, respectively, expressing that the spaces in their school can be used for various social activities and group sizes. Conversely, only 41% of seventh grade respondents consider their school design to be flexible.

The areas that participants think are most flexible include the cafeteria, outdoor commons, library, and gym. The least flexible spaces are the house/pod areas, lockers/corridors, and theater.
Participant responses are roughly divided whether the spaces in their school can adjust over time for the needs of future students and faculty. In the student participant group, 60% report that the spaces in their school are adaptable. Faculty participants are slightly less optimistic about the future flexibility of their school design, with 50% reporting that the spaces in their school can adjust over time.

Student participants at DEW are the most positive about their school’s potential adaptability, with 71% stating that the spaces in their school can adjust over time. Student participants at JDM, however, largely believe that their school design is not adaptable, with only 48% of respondents stating that the spaces in their school can adjust over time. These statistics closely parallel the data from the two schools regarding school flexibility. It is possible that as with the flexibility assessment, JDM’s larger student
population may be responsible for the negative opinions on school adaptability. For example, if the school spaces are already feeling overcrowded and inflexible, it would be difficult for participants to imagine an improvement over time.

Among grades, 68% of sixth and eighth grade respondents believe that the spaces in their school can adjust over time. Only 41% of seventh grade respondents consider their school design to be adaptable.

Size

The following questions regarding size inquire about participant opinions on the overall school size, as well as which “social” spaces participants believe are too big or too small. The questions also attempt to elucidate whether participants believe that the house/pod system, which is intended to make a school feel “smaller,” makes the school feel more comfortable and/or influences the transfer between primary and middle educational phases.

1. Do you think that your school feels: TOO BIG  TOO SMALL

2. Which area(s) do you think feel too big (circle all that apply):

   House/Pod Area  Lockers/Corridors  Outdoor Commons  Cafeteria
   Library  Other: _________________________

3. Which area(s) do you think feel too small (circle all that apply):

   House/Pod Area  Lockers/Corridors  Outdoor Commons  Cafeteria
   Library  Other: _________________________

4. Do you think that the “House” or “Pod” system helps make the size of the school more comfortable?  YES  NO

5. Do you think that the “House” or “Pod” system helped make it easier to transfer from elementary school to middle school?  YES  NO

6. Do you prefer to work in smaller settings or larger settings?

   SMALLER  LARGER
Participant responses to questions regarding the size of their school overwhelmingly suggest that their school is too small. The majority of student participants, 94%, indicate that their school is too small. Faculty participant responses are even more dramatic, with 100% indicating that their school is too small.

Student participants at DEW are slightly less critical than JDM regarding their school size, with 89% of DEW student participants reporting that their school is too small, versus 100% of JDM student participants.

In general, opinions on their current school size are more negative toward the higher grades. The data indicate a trend such that 89% of sixth grade respondents, 94% of seventh grade respondents, and 100% of eighth grade respondents believe that their school is too small. This trend could possibly be based on the relative size of the
students, as well as changes in maturity leading to an increased need for space and
independence in the older students.

The specific "social" areas that most participants cite as too small include the
house/pod areas, lockers/corridors, and cafeteria. Although participants largely express
that most of the school spaces are too small, they did identify areas within the school that
seem oversized and underused. For example, most participants indicate that the outdoor
commons is oversized/underused. However, this information must be evaluated in light
of previous comments that the outdoor commons is underused due to the lack of seating.
Another area participants believe is too large is the open shower area in the gym locker
rooms. The bus area in the back of the school, which is also used for volleyball and other
physical education activities, is considered by many respondents to be underused.

![Figure 19. Do you think that the "House" or "Pod" system helps make the size of the
school more comfortable?](image)

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Participant responses to questions regarding the influence of the house/pod system on perceived school size are fairly discrepant between students and faculty. Only 45% of student participants affirm that the house/pod system helps make the size of the school more comfortable. By contrast, 100% of faculty participants believe that the house/pod system makes the size of the school more comfortable.

Student participants at DEW are slightly more positive about the influence of the house/pod system, with 54% stating that the house/pod system makes the size of the school more comfortable. Student participants at JDM, however, largely believe that the house/pod system does not influence perceived school size, with only 35% of respondents stating that the house/pod system makes the size of the school more comfortable.

Figure 20. Do you think that the “House” or “Pod” system helped make it easier to transfer from elementary school to middle school?
Data reveal that 65% of student participants believe that the house/pod system positively influences the transition from elementary to middle school. By contrast, 100% of faculty participants report that the house/pod system helps with this transition.

Student participants at DEW are slightly more positive about the transitional influence of the house/pod system, with 73% stating that it eases the transition from elementary to middle school. Student participants at JDM, however, are less optimistic, with only 57% of respondents stating that the house/pod system eases the transition.

Participants who report that the house/pod system eases the transition between elementary and middle school cite separation from the older students, close proximity to lockers and classes, safety, and ease of making friends as major factors.

In general, the sixth grade participants are more likely to affirm that the house/pod system increases comfort and eases the transition from elementary to middle school.

Figure 21. Do you prefer to work in smaller settings or larger settings?
Participants are also asked whether they prefer to work in smaller or larger settings. Student participants predominantly favor larger settings, with 85% of respondents expressing that larger settings better suit their work style. Faculty participant responses are more even, with 50% expressing that larger settings are preferred.

There are no salient differences between student participant responses at DEW and JDM, with 89% and 82%, respectively, favoring larger settings.

Among grade levels, the majority of participants indicate that they prefer larger settings. However, more sixth grade participants express that they prefer smaller settings than the other two grades.

Identity

The following questions regarding identity ask participants about the influence of school design on school pride. These questions inquire about participant involvement in the design or decoration of their school, and whether school colors/school logo/mascot promote identity through school spirit. The questions also ask whether participants like being at school, and about design elements that would make school a more desirable place. Finally, the questions attempt to elucidate whether the house/pod system influences identity and a sense of belonging.

1. Do you think that your involvement in designing or decorating your school would make you more involved or interested in your school?  
   YES  NO

2. Do you think that your school colors help with school spirit?  
   YES  NO

3. Do you think that your school colors should be used more or less in your school’s design?  
   MORE  LESS

4. Do you think that your school logo/mascot help with school spirit?  
   YES  NO
5. Do you think that your school logo and mascot should be used more or less in your school's design? MORE LESS

6. Please name up to three design suggestions that you think can increase school spirit.

7. Do you think of your school as a place you like to be? YES NO
   If YES, why? ________________________________
   If NO, do you think that changing your school design can make it a better place to be?

8. Please name up to three design suggestions that you think can make your school a better place to be.

9. Do you think that the “House” or “Pod” system helps you identify better with your classmates and teachers? YES NO

10. Do you think that the “House” or “Pod” system makes you feel like you fit in better? YES NO

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Figure 22. Do you think that your involvement in designing or decorating your school would make you more involved or interested in your school?
Participant responses to questions regarding their involvement in the design or decoration of their school are very positive. Data reveal that 91% of student participants believe that participation in the design or decoration of their school would make them more involved or interested in their school. Faculty participant responses are slightly less positive, with 67% indicating that participation in the design or decoration of their school would make them more involved or interested in their school.

Student participant responses at DEW and JDM are about equally positive, with 96% and 85%, respectively, reporting that participation in the design or decoration of their school would make them more involved or interested in their school.

There are no major discrepancies in opinion among grades, with the sixth, seventh, and eighth grade responses paralleling the overall student participant statistics.

Figure 23. Do you think that your school colors help with school spirit?
Questions regarding the influence of school colors on school spirit reveal predominantly positive responses from all groups. Of the student participants, 73% believe that school colors promote identity through school spirit. Faculty participants are more optimistic, with 100% of respondents affirming the role of school colors in school pride.

Student participants at DEW have the most favorable response, with 82% of student participants indicating that their school colors help with school spirit. At JDM, student participant responses are less positive, with 63% indicating that their school colors promote school spirit.

The sixth grade student participants are the most positive about the impact of school colors, with 90% reporting that their school colors contribute to school spirit. The seventh and eighth grade student participants are less optimistic, with 59% and 67%, respectively, reporting that they think their school colors promote school spirit.

Figure 24. Do you think that your school logo/mascot help with school spirit?
Questions regarding the influence of the school logo and mascot on school spirit reveal predominantly positive responses from all groups. Student participants affirm the importance of the school logo and mascot, with 77% stating that the school logo and mascot promote identity through school spirit. Faculty participants are more optimistic, with 100% of respondents affirming the role of the school logo and mascot in promoting school pride.

Student participants at DEW have the most favorable response, with 85% of student participants indicating that their school logo and mascot promote school spirit. At JDM, student participant responses are less positive, with 68% indicating that their school logo and mascot influence school spirit.

Like the question regarding school colors, the sixth grade student participants are the most positive, with 95% reporting that the school logo and mascot contribute to school spirit. The seventh and eighth grade student participants are less optimistic, with 65% and 68%, respectively, reporting that the school logo and mascot help with school spirit.

Across all participant groups, approximately 80% of respondents believe that their school logo and mascot should be used more in their school design.

In addition to the increased use of school colors and school logo/school mascot in their school design, participants also suggest design elements that they believe would promote identity through school pride. These suggestions include uniqueness and identity among grade levels through color selection in the house/pod areas, use of school colors and logos on lockers, and more spirit decorations such as banners, murals, and photos. Another notable trend among responses pertains to the use of a “generic” color scheme throughout the school that does not relate to the school colors. Student and
faculty participants largely believe that the school should be decorated with the school colors, rather than the prototype scheme that is found throughout.

<table>
<thead>
<tr>
<th>Student Participants</th>
<th>Faculty Participants</th>
<th>Del E. Webb</th>
<th>Jerome D. Mack</th>
<th>6th Grade</th>
<th>7th Grade</th>
<th>8th Grade</th>
</tr>
</thead>
<tbody>
<tr>
<td>□ YES □ NO</td>
<td>□ YES □ NO</td>
<td>0%</td>
<td>20%</td>
<td>40%</td>
<td>60%</td>
<td>80%</td>
</tr>
</tbody>
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Figure 25. Do you think of your school as a place you like to be?

Participant responses to questions regarding whether they consider school as a place they want to be are fairly discrepant between students and faculty. Only 50% of student participants state that they enjoy spending time at their school. By contrast, 100% of faculty participants view school as a place they want to be.

Student participant responses at DEW and JDM are similar to the overall student participant population, with 58% and 42%, respectively, citing that they like spending time at their school.

The sixth grade student participants predominantly affirm that they like being at school, with 80% reporting that their school is a place they want to be. The seventh
grade student participants are the least optimistic, with only 20% reporting that they consider school as a place they want to be. Eighth grade student participant responses fall in the middle, with 41% reporting that they enjoy spending time at school.

When asked to provide design suggestions that can make their school a better place to be, most of the comments pertain to issues addressed in other areas of this report. Some of the unique suggestions include the implementation of more social spaces where students can convene, more “kid-oriented” decorations, and better landscaping.

![Bar chart](image)

Figure 26. Do you think that the “House” or “Pod” system helps you identify better with your classmates and teachers?

When asked whether the house/pod system helps them identify better with classmates/coworkers, participant responses are largely positive. Of the student participant responses, 70% indicate that the house/pod system contributes to camaraderie.
among students and teachers. Faculty participant responses are slightly more positive, with 83% indicating that the house/pod system helps them identify better with colleagues and students.

Student participants at DEW have the most favorable response, with 79% of student participants indicating that the house/pod system helps them identify better with classmates and teachers. At JDM, student participant responses are slightly less favorable, with 60% indicating that the house/pod system helps them identify better with classmates and teachers.

Among grades, most sixth and eighth grade respondents believe that the house/pod system helps them identify better with classmates and teachers, with 70% and 79%, respectively, expressing that the house/pod system contributes to camaraderie.

Figure 27. Do you think that the “House” or “Pod” system makes you feel like you fit in better?
Responses to whether participants believe that the house/pod system helps them fit in better are much less positive. Only 43% of student participants indicate that the house/pod system increases their sense of belonging. Faculty participant responses are slightly more positive, with 67% stating that the house/pod system helps them fit in better.

Student participant responses at DEW and JDM are similar to the overall student participant population, with 48% and 38%, respectively, reporting that the house/pod system increases their sense of belonging.

Among grades, only 55% of sixth grade respondents and 44% of eighth grade respondents believe that the house/pod system helps them fit in better. The seventh grade respondents are even less positive, with only 25% expressing that the house/pod system helps them fit in better.

Safety

The following questions about safety ask participants to consider both safety from outsiders and safety among students within the school. These questions inquire about design elements that make participants either feel safe or unsafe. Additionally, the questions ask whether design elements that promote security, such as cameras or metal detectors, make participants feel safer or remind them that they are vulnerable. Finally, the questions attempt to elucidate whether participants believe that the house/pod system and lockers/corridors arrangement influence their feelings of safety.
1. What specific things in your school design make you feel safe (for example, fences, gates, locker arrangement, how classes or lunch hours are scheduled)?

2. What specific things in your school design make you feel unsafe (for example, lack of fences, missing gates, locker arrangement, how classes or lunch hours are scheduled)?

3. Do the current safety measures at your school make you feel safer, or does it remind you that you and your school are vulnerable? MORE SAFE LESS SAFE

4. Do you think that the “House” or “Pod” system makes you feel safer? YES NO

5. Do you think that the way that the corridor/locker areas are designed makes you feel safer? YES NO

The specific design elements that make participants feel safe are gates/fences around and within the school grounds, the separation of grades through the house/pod system, and the lunch schedule arrangement. With respect to the lunch schedule, both DEW and JDM have a trifurcated lunch schedule such that sixth, seventh, and eighth grade students eat during separate times. Other elements that participants report increase safety include security cameras, locked doors, and an insular design.

Design elements that make participants feel unsafe include unlocked gates and doors, gaps in gates/fences, multiple entrances, and proximity to a busy street/lack of crosswalks. The student drop-off/pick-up area and parking lot in the front of the school is a source of concern for many participants. Many respondents note that the parking lot is too small and crowded, creating difficult navigation for pedestrians. Participants suggest a one-way traffic circulation pattern to minimize congestion and confusion. Participants also recommend a safe place to sit and wait for parents to pick them up.
Another interesting comment made by several student participants involves the material selection for the walls in the school. They note that the use of split-faced concrete masonry units (CMU), with its rough texture, can be dangerous when student areas are crowded or students are rough-housing.

Student Participants
Faculty Participants
Del E. Webb
Jerome D. Mack
6th Grade
7th Grade
8th Grade

Figure 28. Do the current safety measures at your school make you feel safer, or does it remind you that you and your school are vulnerable?

Student and teacher participant responses are similar on the visibility of security design measures, with 64% and 60%, respectively, reporting that visible security measures make them feel safer, rather than more vulnerable.
Of the student participants, 79% of DEW respondents attest that security design elements make them feel safer, while only 48% of student participants at JDM feel the same.

There are no major discrepancies in opinion among grades, with the sixth, seventh, and eighth grade responses paralleling the overall student participant statistics.

Participants indicate that they would prefer that security measures are integrated into the school’s design so they are not prominently visible. Those that believe visible security design elements make them uncomfortable state that the sight of cameras and metal detectors would increase their sense of vulnerability.

Figure 29. Do you think that the “House” or “Pod” system makes you feel safer?
Figure 30. Do you think that the way that the corridor/locker areas are designed makes you feel safer?

Student participant responses to questions that inquire about whether the house/pod system and lockers/corridors arrangement make them feel safe from other students and outsiders, are fairly divided. Data show that 50% of student participants believe that the house/pod system promotes safety and 38% of student participants believe that the lockers/corridors arrangement promotes safety. Faculty participants are more positive, with 83% reporting that both areas enhance safety.

Student participants at DEW are most positive, with 61% indicating that the house/pod system promotes safety and 50% indicating that the lockers/corridors arrangement promotes safety. At JDM, only 39% of student participants believe that the house/pod system enhances safety and only 25% of student participants believe that the lockers/corridors arrangement enhances safety.
Among grades, most sixth grade respondents believe that the house/pod system and lockers/corridors arrangement promote safety (65% and 50%, respectively), expressing that these areas make them feel safe from other grades and outsiders. The seventh grade respondents are the least positive about the safety aspect of these areas, with only 35% reporting that the house/pod system enhances safety and 24% reporting that the lockers/corridors arrangement enhances safety. Eighth grade student participant responses fall in the middle, with 47% reporting that the house/pod system promotes safety and 37% reporting that the lockers/corridors arrangement promotes safety.

**Technology**

The following questions ask participants about the technology available at their school, especially with respect to having enough computers and enough computer lab space to do their work. Other questions inquire about participant thoughts on electronic reading material or other computer-based learning options.

1. Do you use the computers at your school? **YES** **NO**
2. Do you think that there are enough computer stations at your school? **YES** **NO**
3. Do you ever have to wait to use a computer? **YES** **NO**
   If yes, how long did you have to wait? _________ minutes
4. Do you like having a computer lab in your “House” or “Pod”? **YES** **NO**
5. Would you prefer to read books on the computer instead of checking them out of the library? **YES** **NO**
6. Please name up to three suggestions on how you think your school can improve or change the technology that is available

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Do you use the computers at your school?

Data reveal that the school computers are used extensively, with 80% of student participants indicating that they regularly use the computers at their school. Faculty responses are equally strong, with 83% of faculty participants indicating that they frequently use the computers at their school.

Of the student participants, 92% of the DEW respondents report that they regularly use their school computers, while a smaller percentage of JDM respondents, 68%, report that they regularly use their school computers.

Most sixth and eighth grade respondents, 85% and 89% respectively, use their school computers. Conversely, only 65% of seventh grade respondents use their school computers.
Many respondents indicate that they would prefer to use laptop computers with wireless access, rather than be confined at a computer station. This comment mostly pertains to computer usage in the classroom setting, as online teaching tools are becoming more prevalent.

![Graph showing student and faculty participation by grade level](image)

**Figure 32.** Do you think that there are enough computer stations at your school?

Only 52% of student participants think that there are enough computer stations at their school. Faculty participant responses are not much more positive, with only 60% indicating that there are enough computer stations. About half of the student respondents report that they have to wait to use a computer, with an average wait time of 15 minutes. None of the faculty participants report that they have to wait to use a computer.

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Figure 33. Do you like having a computer lab in your “House” or “Pod”?

Figure 34. Would you prefer to read books on the computer instead of checking them out of the library?
When asked whether they like having a computer lab in their house/pod area, 94% of student participants respond positively. Faculty participants are even more positive, with 100% of respondents affirming that a computer lab is preferred in the house/pod area.

Only 36% of student participants and 0% of faculty participants indicate that they would prefer to read learning materials online.

For the three aforementioned questions, there are no major discrepancies in opinion between schools or among grades, with all responses paralleling the overall student participant statistics.

When asked about design solutions that would better support technology in the school, participants suggest more computer laboratories, wireless access to support laptop usage, and computers in the classrooms. Other areas of technology that participants believe would make their school more cutting-edge include video screens for announcements and a more sophisticated cafeteria check out system.

**Sustainability/Environmental Quality**

The following questions ask participants whether environmentally friendly, or “green” design, should be a priority in school design. Since one of the major sustainable/environmental design solutions in schools today is the use of daylighting, these questions mostly address the benefits and problems with natural daylighting in schools.
1. Is it important to you that your school use environmentally friendly design strategies, such as recycled materials? **YES NO**

2. Does daylighting (light brought in from the outside through windows or skylights) make you enjoy your environment more? **YES NO**

3. Do you feel that views to the outside through windows make the environment better? **YES NO**

4. While you are inside a building, do you feel that students are distracted by the activities going on outside the windows? **YES NO**

Figure 35. Is it important to you that your school use environmentally friendly design strategies, such as recycled materials?

Participant responses regarding the use of green design strategies are overwhelmingly positive. Data reveal that 84% of student participants believe that it is important to use
green design strategies. Faculty participant responses are similar, with 83% indicating that sustainable design should be used in schools.

Student participants at JDM have the most favorable response, with 89% of student participants indicating that sustainable design should be a priority. At DEW, student participant responses are slightly less positive, with 79% indicating that green design strategies should be employed.

The seventh grade student participants are the most enthusiastic about sustainable design, with 100% reporting that green design strategies should be used. The sixth and eighth grade student participants are slightly less optimistic, with 80% and 74%, respectively, indicating that they think sustainable design strategies are important in school design.

Figure 36. Does daylighting (light brought in from the outside through windows or skylights) make you enjoy your environment more?
Questions regarding daylighting reveal predominantly positive responses from all groups. Student participants express that daylighting is important, with 84% stating that daylighting produces a better environment. Faculty participant responses are about the same, with 83% of respondents affirming the importance of daylighting in providing a good environment.

Responses between schools are similar, with 86% of DEW respondents and 82% of JDM respondents expressing favor of daylighting strategies.

There are no major discrepancies in opinion between schools or among grades, with all responses paralleling the overall student participant statistics.

Figure 37. Do you feel that views to the outside through windows make the environment better?
In addition to questions about daylighting, participants are asked about whether views to the outside would improve the indoor environment or whether it would be distracting to see outside. Student participants overwhelmingly report that they prefer exterior views, with 86% stating that it would make the indoor environment better. The majority of student participants, 84%, report that views to the outside would not be distracting. Faculty participants largely affirm that views are important, with 83% indicating that exterior views would improve the indoor environment. However, only 50% of faculty participants believe that the views would not be distracting.

Student participants at DEW are the most positive about exterior views, with 93% indicating that they prefer to be able to see outside and 96% reporting that they would not be distracted. At JDM, student participant responses are slightly less favorable, with 79%...
indicating that views would enhance the indoor environment and 70% reporting that they would not be distracted.

Exterior views are most important to sixth and seventh grade respondents, with 90% and 94%, respectively, stating that they prefer to be able to see outside. Eighth grade respondents are slightly less enthusiastic, with 74% reporting that views would improve the indoor environment.

Participatory Outcomes:
Analysis of Participant Opinions

The field study also provides insight on whether participation in the design of their middle school environment has the potential to encourage and motivate students and faculty on an intrinsic level. The intent of this inquiry is to address the secondary purpose of this thesis, which is to determine whether interest and ownership of their school design can establish a connection among student, faculty, and facility that will serve to enhance interest, motivation and relationships.
1. Do you feel that participation in this research study increased your interest in your school? YES NO

2. Do you feel that being involved and having “a say” in how to design a middle school makes you feel good about your school? YES NO

3. Do you feel that being involved and having “a say” in how to design a middle school makes you more motivated to come to school? YES NO

4. Do you feel that being involved and having “a say” in how to design a middle school makes you more motivated to do well in school? YES NO

5. Do you think that your participation in this study has made your relationships with other students better? YES NO

6. Do you think that your participation in this study has made your relationships with teachers better? YES NO

7. Although you may or may not attend the school where your ideas are put in place, do you think that your contribution was important? YES NO

8. Do you feel that having a part in this research study has benefited you in any way? YES NO

The responses to the above questions are largely positive, with participants generally expressing that their participation in this study was valuable and enhanced their interest, motivation, and relationships with others. With respect to interest in their school, almost all participants report that participation in this study increased their interest in school. The vast majority of participants conclude that being involved and having a “say” in their middle school design makes them feel good about their school. When asked whether being involved in their middle school design makes participants motivated to come to school and/or do well in school, responses were only slightly less positive.

Slightly more than half of the participants express that their participation in this study made their relationships with their peers better. Conversely, a little less than half of the
participants express that their participation in this study made their relationships with their teachers/students better.

Despite the fact that the participants will not likely attend or work at the school where their ideas are ultimately implemented, participants report that they still believe that their contribution is valuable for future generations.

Finally, the majority of participants express that their participation in the study was beneficial. Most participants cite that they appreciated being able to voice their opinions and be part of something productive. Additional benefits include increased participation in other school activities, greater motivation to do well in school, enhanced interest in design, and increased perception of their surroundings. Several participants also enjoyed evaluating their school and making suggestions so that others can have an improved school environment.
CHAPTER 5

CONCLUSIONS AND RECOMMENDATIONS

There is significant interest in the architectural/educational community to design middle school facilities that support learning, enhance social development, and inspire students and faculty. Many architects and educators believe that well designed facilities have the potential to help mitigate some of the major issues that face middle schools today. More so than other educational phases, students at middle school age are challenged by a myriad of intellectual, social, emotional, and physical changes. These developmental challenges often lead to strained relationships and higher attrition rates than seen in elementary and high school. Although there are social support services that schools provide in an effort to alleviate some of these issues, there is still compelling evidence that creating schools where students want to be can be one of the greatest allies in augmenting the middle school experience. Herein lies the potential power of the architect and educator to create school facilities that can enhance the success of the middle school student and faculty.

The exploration and evaluation of the “social” spaces of the middle school prototype may help architects and educators focus on solutions that cater to the developmental challenges faced by middle school students and faculty. The architectural topics that are

considered to influence the success of these “social” spaces are flexibility, size, identity, safety, technology, and environmental quality. This thesis, which focuses on the aforementioned topics, reveals several prominent trends and solutions that should be considered when approaching the design of a middle school facility.

Since the intent of the thesis is to contribute to the development of a new middle school prototype, rather than recommend changes to the current middle school prototype, it is prudent to avoid conclusions and suggestions that are too specific to the physical form and layout of the current middle school prototype. Therefore, the following section first reviews the successes and drawbacks of the design concepts underlying the various “social” spaces in the current middle school prototype, then discusses the salient trends pertaining to flexibility, size, identity, safety, technology, and environmental quality of the “social” spaces.

Existing Design Concepts:

Conclusions and Recommendations

The concept of the house/pod system is fairly well accepted, with benefits including separation between grades, lockers and classes in close proximity, easier transition from elementary to middle school, camaraderie among students and between students and faculty, community environment, and increased safety. Recommendations for improving the house/pod system include larger spaces to reduce crowding, larger ingress and egress allocation, and improved restroom placement to provide more proximal access from all areas.
The house/pod system is most effective for sixth grade students, since it serves to create a smaller and more intimate environment to ease the transition from elementary school. The separation from older students, close proximity to lockers and classes, safety aspects, and ease of making friends are major factors supporting the house/pod system as a transitional tool. However, there is less support of the house/pod system as the grade levels increase. Therefore, it may be worthwhile to investigate using the house/pod system for the younger grade(s) and providing a more open school environment for the older grade(s).

The concept of the lockers/corridors design is largely problematic, mostly due to the unsatisfactory placement of the lockers in the circulation spaces. Crowding is a major concern, as this condition creates tension among students and social groups. It is suggested that the lockers be placed in non-circulation areas, although provisions should be made to allow for faculty supervision of the lockers space.

In concept, the outdoor commons is a successful design for promoting social interaction, although it is underused due to the lack of seating areas and places for students and faculty to congregate. It is recommended that the outdoor commons be designed to encourage social interaction through niche spaces and planter/furniture placement. Additionally, shading devices placed over the outdoor areas where students/faculty convene can make the environment more climatically comfortable.

The design concept of the cafeteria is fairly successful. The cafeteria functions well, it is a good space to socialize with friends, and the food pick-up stations function well. In order to be more effective for social interaction, it is recommended that prospective designs include better acoustical control to reduce noise and reverberation, circular tables
to encourage social interaction, and improved circulation control for the food pick-up stations.

The library design concept is largely regarded as well-functioning and comfortable with good natural lighting. The library design could be improved by providing both social and non-social study spaces to accommodate individual studying and group projects/activities.

Predominant Trends:

Conclusions and Recommendations

Flexibility and adaptability are important factors that must be considered in the design of the “social” spaces of the new middle school prototype, especially in light of the ever-changing social challenges that face middle school students and faculty. Since the prototype will likely be used for years to come, spaces must be able to adapt to changes in function and advances in technology. Areas that encourage the most social interaction, such as the cafeteria and outdoor commons, are considered to be the most flexible. It is recommended that the design of the least flexible spaces, the house/pod system and the lockers/corridors, be re-evaluated to maximize flexibility over time for changes in group configurations or student body population. In general, the middle school design is generally considered to be less flexible as the size of the student body population increases.

Most of the “social” spaces in the existing middle school prototype are considered to be significantly too small, including the house/pod areas, lockers/corridors, and cafeteria. The reasons behind this assessment include overcrowding and the general preference for
larger work settings. Conversely, there are several areas within the school that are oversized and underused, such as the outdoor commons, gym locker rooms, and bus area in the back of the school.

Opinions on school size are more negative toward the higher grades. A possible explanation for this trend could be based on the relative size of the students, as well as changes in maturity leading to an increased need for space and independence in the older students.

The thesis research also confirms that much of middle school design success relies on the ability for the student and faculty to forge a connection with their school, thereby establishing school as a place occupants want to be. This is most often achieved through the development of school pride and identity through school culture and atmosphere. The establishment of identity can be achieved through increased student and faculty involvement in the design or decoration of their school and more prevalent use of school colors and mascot. It is suggested that the school colors are used as the color scheme throughout the school design, rather than a “generic” prototype color scheme. Additional recommendations include uniqueness and identity among grade levels through color selection in the house/pod areas, use of school colors and logos on lockers, and more spirit decorations such as banners, murals, and photos.

Safety is a major priority in middle school design, both in the physical design and in the psychological perception of safety. The current middle school prototype is fairly successful with safety design elements. The specific design elements that currently promote safety are gates/fences around and within the school grounds, the separation of grades through the house/pod system, and the lunch schedule arrangement. Other
elements that increase safety include security cameras, locked doors, and an insular design. Recommendations for improvement include elimination of gaps in gates/fences, reduction in the number of entrances, larger setbacks from busy streets, and more crosswalks. Additional suggestions include a one-way traffic circulation pattern to minimize congestion and confusion in the student drop-off/pick-up area and the establishment of a safe place to wait. The material selection for the walls in the school is considered to be problematic, as the rough texture of the split-faced concrete masonry units (CMU) can cause injury when student areas are crowded or students are rough-housing. Therefore, architects and educators should carefully consider the materials they select to place at student height in order to avoid this type of issue in future designs.

Although the visibility of security design elements does not generally cause anxiety among occupants, it would be better to integrate security design measures into the school’s design where possible.

Advances in technology continually change the way architects and educators must approach school design. Spatial flexibility is the most successful approach to changes in technology, such that spaces can be reduced or expanded to accommodate technological advancement and equipment. Since the majority of students and faculty use the school computers, it is recommended that ample space be provided for such use, including more computer labs and/or wireless technology to promote laptop usage. Proximity between computer labs and classrooms is also important, as more and more teaching lessons are available on computers. Although some architects and educators believe that the future of physical libraries is grim, due to the availability of online books, data from this thesis reveal that their theory is unsupported by students and faculty.
Sustainability/environmental quality is one of the most frequently discussed topics in the architectural and educational community today. The findings from this thesis do not differ from the available literature. The use of sustainable design strategies is largely supported by students and faculty. Likewise, daylighting is an important factor in providing a better learning and social environment, and most respondents feel that access to exterior views enhances their environment without distraction.

Participatory Outcomes:

Conclusions and Recommendations

It can be concluded that participation in the design of their middle school environment has the potential to encourage and motivate students and faculty on an intrinsic level. Having a "say" in their middle school design makes students and faculty feel good about their school and enhances motivation to come to school and do well in school. Additional benefits include increased participation in other school activities, greater motivation to do well in school, enhanced interest in design, and increased perception of their surroundings.

In addition to the personal benefit of participation in their school design, students and faculty also appreciate that their contribution will benefit future generations.

General Trends and Significance of Research

Trends between student and faculty opinions, between schools, and among grades affirm the significance of this type of research. For example, faculty participants are more positive than student participants regarding almost all aspects of their school...
design. In most cases, the discrepancy is significant. This finding elucidates the importance of obtaining student opinions on school design, especially since student satisfaction with their school facility can influence their graduation success. Evidence from this thesis indicates that if only faculty opinions are garnered, architects and educators may not otherwise identify certain areas and topics as problematic, even though students strongly feel that these areas and topics require new solutions. Therefore, this study recommends that architects and educators investigate the opinions of this critical student population in the design of prospective middle school prototypes.

Trends between schools are equally meaningful. Throughout the research findings, student participants at Del E. Webb Middle School (DEW) are more positive about their school design than students at Jerome D. Mack Middle School (JDM). Although somewhat less antipodal than the student-faculty responses, the differences in responses between the two schools still implies that certain factors should be considered when designing a new middle school prototype. Although the data do not directly suggest that demographic and location differences among schools affect student and faculty perception of their school design, these two factors may be important as they reflect the predominant difference between the two middle schools that participated in this study. For example, participants at JDM are more likely to focus on safety issues than students at DEW. DEW has a much smaller student population in the same sized facility, which may influence student viewpoints on issues such as flexibility and size. This study recommends that the new prototype middle school design allow for flexibility to accommodate differences among schools. Perhaps the middle school prototype can be
customized so that each individual school has its own community character and responsiveness to its surroundings.

The data show two primary trends among grade levels. First, there appears to be an inverse relationship between positive responses and grade level for certain questions, such that positive responses decrease with grade level. With respect to the house/pod system, size of the school, and willingness to read books online, sixth grade participants are most positive, followed by seventh grade participants, then eighth grade participants (as least positive). This gradient trend suggests that certain aspects of school design might be more effective if they are catered toward grade level, especially those areas that pertain to transition, size, and technology. Second, the data overwhelmingly reveal that seventh grade participants are the least positive group in most of the categories investigated. This indicates that each grade level has a unique developmental profile and individual needs, which should be considered when designing the “social” spaces of the middle school. This study recommends that architects and educators design the spaces in new middle school prototype with respect to the grade level(s) that will occupy them, in order to create spaces that best serve the occupant group.

Recommendations for Future Research

Research studies serve to contribute to the general body of knowledge in a particular field through the data, results, and recommendations they provide. Another important contribution involves the identification of areas where the research methodology could have been improved, so that future generations can benefit from the successes and weaknesses of research precedents.
Although the thesis results provide architects and educators with general information and trends on middle school design, there are certain aspects of the methodology that could have yielded more refined data. For example, the structured survey questions could have been framed by the use of a Likert scaling method, rather than a “yes” or “no” approach. A Likert scale is a numbered scale where participants specify their level of agreement with a statement (e.g., 1 strongly agree, 2 somewhat agree, 3 neither agree nor disagree, 4 somewhat disagree, 5 strongly agree). The Likert scaling method allows participants to provide more detailed opinions, especially in areas where neither “yes” nor “no” are sufficient or appropriate. For example, a participant may not either entirely like or dislike the house/pod system, but instead have an opinion that falls in the gradient between the two choices.

Another area for improvement involves a stronger emphasis on demographic data as they pertain to varying opinions on middle school design. This thesis did attempt to identify discrepancies in response between the two middle schools, which had differing demographic profiles. However, the potential influence of demographics could not be articulated without attributing actual participant ethnic and age data to each response. Had this been done, some interesting trends may have emerged that could provide architects and educators with guidance on designing middle schools for different community demographic profiles.
APPENDIX I

METHODOLOGY MATERIALS
Research Protocol Proposal Form for Research Involving Human Subjects

Evidence of CITI certification (www.citiprogram.org) must be submitted with this protocol proposal form.

Instructions:
1. Complete all sections of this form. Do not reference other sections as a response (i.e. "see section...") or "see attached...")
2. Obtain all necessary signatures.
3. Submit one complete protocol package with all enclosures. You will be notified if additional copies are necessary.
4. Projects with funding/proposed funding must include copy of the application or proposal.

Note:
1. Handwritten forms will not be accepted.
2. INCOMPLETE FORMS WILL BE RETURNED.
3. For your records, it is important that you keep a copy of this completed form.

1. Submittal Date: 7/20/2006

2. Duration of Study
  Anticipated Start Date: 9/1/2006
  Anticipated Termination Date: 5/15/2007

NOTE: Research Studies may not begin until you have received notification of IRB approval. All research proposals are approved for a maximum of 1 year and can be re-reviewed at any time within that year at the discretion of the IRB.

3. Research Protocol Title (Research Protocol Title must match the funding/proposed funding application or proposal):
   The New Middle School: Participatory Design and Outcomes

4. Investigator(s) Contact Information
   (One person must be designated as the PI. The PI must be a UNLV faculty or professional staff member in all cases involving studies carried out by students or fellows.)

A. Principal Investigator (Name and Credentials): Michael Alcorn, BS, MS, MFA, AIA
   - Faculty
   - Faculty Advisor
   - Professional Staff
   School/College/Center: College of Fine Arts
   Department: School of Architecture
   Mail Stop: NA
   Mailing Address: 4505 Maryland Parkway, Box 454018, Las Vegas, NV 89154
   Phone Number: (702) 896-3001
   Fax Number: (702) 896-1119
   E-Mail Address: michael.alcorn@unlv.edu

B. Student/Fellow Investigator (Name and Credentials): Tina Wichmann, BA
   - Undergraduate
   - Master
   - Doctorate
   - Fellow
   School/College/Center: College of Fine Arts
   Department: School of Architecture
   Mail Stop: NA
C. PLEASE COMPLETE ONLY IF APPLICABLE

Co-Principal Investigator (Name and Credentials):

- Faculty
- Professional Staff

School/College/Center: __________
Department: __________
Mailing Address: __________
Phone Number: __________
Fax Number: __________
E-Mail Address: __________

5. Research Team Members: List all research team members who will be involved in this research project. Research team members are persons who have direct contact with subjects, contribute to the research in a substantive way, have contact with subjects’ identifiable data or biological samples, or use subjects’ personal information. (For additional guidance, refer to the sample form on the OPRS website.)

<table>
<thead>
<tr>
<th>NAME and DEPARTMENT</th>
<th>ROLE IN PROTOCOL</th>
<th>ROLE IN CONSENT PROCESS</th>
<th>SPECIFIC EXPERIENCE WITH ROLE IN PROTOCOL</th>
</tr>
</thead>
<tbody>
<tr>
<td>Michael Aitorn</td>
<td>General oversight of study.</td>
<td>Oversight of consent process.</td>
<td>Experience with Post Occupancy Evaluations which address occupant satisfaction once a building is completed. CITI training and certification.</td>
</tr>
<tr>
<td>Tina Wichmann</td>
<td>Interaction with study participants, data collection, data evaluation, preparation of thesis.</td>
<td>Discussion with participants and obtaining informed consent.</td>
<td>CITI training and certification.</td>
</tr>
</tbody>
</table>

6. Project Site(s) (Check all boxes indicating where the study is conducted.)

- University of Nevada, Las Vegas (UNLV)
- Maryland Campus (main)
- Paradise Campus
- Shadow Lane Campus
- UNLV leased property. Explain: Clark County School District - Del E. Webb Middle School and Jerome D. Mack Middle School

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NOTE: If the project site is other than UNLV, Facility Authorization Letter must be submitted.

7. Research Terms
Provide up to three terms, keywords, or short phrases that describes the research to be performed using the guidelines below:
1. Research area (biomedical, social behavioral): Social and Architecture
2. Study topic area (e.g., physical therapy, psychology): Architecture
3. Subject class (e.g., healthy adults, prisoners): Minors and Adults

8. Proposal Summary
Summarize the proposed research project. The summary should be written in non-technical language that can be understood by non-scientific individuals. The summary must not exceed 200 words.

8.1 A brief statement of the research question (hypothesis) and related theory supporting the reason for the study. It is believed that the participation of students and teachers in the evaluation and critique of their current school design will provide architects with important insight in the creation of better schools for learning and social development. Current research has focused on two primary agents that influence the design of educational architecture. The first involves utilizing the school's or administration's mission statement, or academic value system, as a basis for design planning. The second considers the impact of architectural factors, such as natural lighting, on student performance. In general, however, student and teacher occupant participation, satisfaction, and enrichment have not been formally explored. This research study intends to gather information from students and teachers that can potentially be used in the design of the new middle school prototype for the Clark County School District (CCSD).

8.2 A brief description of the procedure(s) involving human subjects. Questionnaires, focus group sessions, and photographic evaluation (of design elements within the school) will be used for collection and assessment of data. Students and teachers who agree to participate via informed consent/assent will be asked to participate in the above procedures to help obtain information on the likes, dislikes, and respective suggestions on middle school design.

PLEASE NOTE: Complete description of the study procedure(s) must be specified in Section 26.

9. Number of Research Subjects
Total number of subjects: 80

10. Research Subject Classification
10.1 Check all applicable boxes

- UNLV Students (general student body)
- Healthy Adults - Age range: 18+
- Minors (under age 18) - Age range: 11-14
- Clark County School District Students
- Cognitively or Psychologically Impaired (See consent form guidelines)
- Non-English Speaking (Include consents in the appropriate language)
- Elderly Subjects
- Prisoners or Parolees
- Healthy Control Group
- Pregnant Women
- UNLV Employees
- Institutionalized Residents
- Other - Describer: ______

10.2 Summarize the inclusion and exclusion criteria that must be met in order for a person to participate in the study.
Inclusion: (1) Student or teacher at Del E. Webb Middle School or Jerome D. Mack Middle School; (2) Able to provide voluntary informed consent/assent; (3) English speaking.

Protocol Proposal Form - Ver. 2 - 6/2005
3 of 10

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11. Purpose of Study
The primary purpose of this thesis research is to explore the opinions of students and teachers with respect to middle school design, in order to contribute to the conception of a new middle school prototype school for the Clark County School District. The focus will be primarily on the “public” (non-classroom) spaces of the school, such as House/Pod Areas, Lockers/Corridors, Outdoor Commons, Cafeterias/Breakrooms, and Libraries, where students and teachers intermingle and socialize. The secondary purpose of this research is to determine if participation in the design of their middle school environment will encourage and motivate students and teachers on an intrinsic level, such that interest and ownership of their school design promotes better relationships and learning.

12. Privacy and Confidentiality
Privacy refers to a person's desire to control the access of others to themselves. Privacy concerns people.
Confidentiality refers to the researcher's agreement with the subject about how the subject's identifiable private information will be handled, managed, and disseminated. Confidentiality concerns data.

12.1 What are the methods used to ensure confidentiality of participation and data obtained?
Participant names will be obtained during the informed consent process. Each participant will be assigned a subject number. The participant name and subject number affiliation will be kept confidential by the Investigator, and will only be used in the event of an audit requiring evidence that data collected was from participants who had provided consent. A demographic questionnaire will request information such as grade (if applicable), age, race, and school, but will not contain the actual participant name, only their subject number. All questionnaires and photographic evaluation of design elements within the school will not contain names or any specific identifying features, only subject numbers. Focus group sessions will gather data that is not related in any way to participant name or subject number; it is just a general collection of group information. During and after the study, all identifiable data will be managed by the Principal Investigator or Student Investigator as indicated in the protocol. All publications resulting from this research will not contain any identifying participant information. It is noted, however, that since the study involves participants in a school setting, and involves participation in focus group sessions, others in the study or school may be aware of a particular student or teacher's participation. However, due to the voluntary nature of participation, and the nature of the data being gathered (non-personal, opinion-based), it is not anticipated that this circumstance will compromise privacy.

12.2 What safeguards are used to protect against identifying, directly or indirectly, the subject involved in the study? Informed consent documents containing participant names and the name-subject number register will be kept in a secure location at the School of Architecture main office. After the required three year data retention period, these documents will be destroyed. Although the Investigator will communicate verbally with the participants by name (i.e., during conversation), this information will not be included on any data gathered from the subject. Special considerations will be made if the participant can be identified via “indirect identifiers” (e.g., the only Hispanic volunteer in the 7th grade sample pool).

12.3 What safeguards are used to protect the information from disclosure?
Since the research study involves minimal risk to participants, and the data collected is not sensitive to a safety standpoint, a Certificate of Confidentiality will not be pursued. However, appropriate measures will be put in place to ensure that identifiable information (e.g., informed consent documents) is kept secure.
### Protocol Proposal Form - Ver. 2 - 6/2005

#### 13. Recruitment Procedures

13.1 Describe below the processes used for selecting subjects and the methods of recruitment, including use of letters and/or advertising. Include, when, how and by whom the subjects will be recruited. Do not include inclusion and exclusion criteria which were already listed in Section 10.2.

The Student Investigator will meet with the teachers at each school during a convenient time for the teachers (e.g., at the end of an administration meeting). Teachers will be given a brief flyer describing the study. If possible, a similar flyer regarding the study will be distributed to parents at the schools’ Open House night so they are aware of the study should their child bring home a Parent Informed Consent. Depending on the classroom set up of the school, one teacher will be identified as the Representative of their classroom of students (i.e., a homeroom teacher in the event that students have more than one teacher). Teachers who are interested in allowing their students to participate are asked to arrange for a meeting with the class. Participation is entirely on an individual basis; it is not required that all students in a classroom participate and the teacher may or may not participate. The Student Investigator will meet with the class and explain the study, procedures, and risks. Students and teachers who are interested in participating will be given the appropriate informed consent document(s) for review. Students and teachers who return the informed consent process and sign the informed consent document during the subsequent meeting will be considered enrolled in the study.

13.2 Will subjects be recruited from one or more schools, community centers, organizations, trade groups etc.? (x) Yes ( ) No

If yes, please specify the source(s): Two schools have agreed to participate in this research study: Del E. Webb Middle School and Jerome O. Mack Middle School.

NOTE: Provide a Facility Authorization Letter from the performance site facility giving the PI permission to perform the study at that site.

13.3 Indicate the types of recruitment materials to be used below (check all that apply). Attach copies of all recruitment materials to this application.
13.4 Will subjects be recruited from a non-public registry?  
☐ Yes ☑ No
If yes, specify the source: 

NOTE: Provide a letter from the director of the registry authorizing your access to the identifiable data for the purpose of this study. The letter needs to clearly describe how access to the identifiable information is ethically possible, (i.e. it confirms that subjects have given permission for contact and authorized the distribution of their names and address).

13.5 Are you studying pre-existing data? (e.g. academic records, medical records or specimens)  
☐ Yes ☑ No
If yes, specify the source:

13.6 Do you or any member of the research team have an authoritative role (i.e. Instructor, Counselor, etc.) over the research subjects?  
☐ Yes ☑ No
If yes, please explain:

14. Research Activities (Part A)

Please check any/all that apply to the proposed research study.

☐ Collection of data is through non-invasive procedures routinely employed in clinical settings, excluding x-rays or microwaves (e.g., physical sensors that do not shock or invade the subject’s privacy, weighing or testing sensory acuity, magnetic resonance imaging, EGG, EKG, moderate exercise or strength testing with healthy non-pregnant subjects).

☐ Collection of data involves review of data, documents, records or specimens that were originally collected for non-research purposes (e.g., medical records).

☐ Existing human biological specimens will be used.

☐ Prospectively collected human biological specimens will be used. **

Indicate source and dates when the data were collected: 

☐ Collection of data is from audio or visual recordings.

☐ Research activities involve observing individual or group characteristics when considering the subject’s own behavior (including perception, cognition, motivation, identity, language, communication, socio-cultural beliefs, practices or behavior).

☐ Research employing survey, interview, oral history, focus group or program evaluation measures for purposes of research.

☐ Research activities involve medical devices that have been approved for marketing and are used as prescribed.

Identify device(s): 

☐ Blood samples are collected by finger stick or venipuncture only from non-pregnant healthy adults in amounts less than 550 ml in an eight-week period and no more than twice per week.
Provide a brief description of blood collection methods.

- Prospective collection of biological specimens by non-invasive means (e.g., hair and nail clippings, extracted teeth, excreta and external secretions, unceramated saliva, placenta removed at delivery, amniotic fluid obtained at rupture of membrane prior to or during delivery, dental plaque and calculus, mucosal and skin cells collected by swab and sputum collected after saline mist nebulization).

- None of the above categories apply to the proposed research study.

15. Research Activities (Part B)

15.1 Please check any/all that apply to the proposed research study

- False or misleading information to subjects (deceptive studies)
- Procedures for debriefing subjects: 
- Invasive biomedical procedures
  Explain procedure: 
  Are provisions for medical care necessary?
  - Yes, please explain: 
  - No, please explain: 

- Has a qualified UNLV Faculty Member participated in planning the study?
  - Yes, please identify by name and qualifying credential: 
  - No

- Will the study involve drugs, radiation, lasers, high-intensity sound, etc.?
  - Yes, please identify: 
  - No

- Sensitive questions will be asked about personal issues
- The study involves use of potentially hazardous materials (Explain): 

- The research includes collection/storage of data/biological specimens for future research analysis. If yes, the consent document must address the possibility of future use.
- Procedures are novel or not accepted practice (if this category applies, explain in the Informed Consent Form how provisions are made to correct, treat or manage unexpected adverse effects)
- Risky procedures or harmful effects, including discomfort, risk of injury, invasive procedures, vulnerability to harassment, invasion of privacy, controversial information or information creating legal vulnerability (if this category applies, explain in the Informed Consent Forms how harmful effects will be addressed and how benefits outweigh risks)

- None of the above categories apply to the proposed research study.

15.2 Dissemination and Storage of Research Information

- Will the results of the research study be provided to the research subject?
  - Yes
  - No

15.3 Quantitative Design Elements (if applicable)

- Describe the statistical procedures that will be used and specify the following:
16. Medical Devices

16.1 Are you using a medical device? □ Yes □ No

16.2 Is this a SIGNIFICANT RISK (SR) or NON-SIGNIFICANT RISK (NSR) device? □ SR □ NSR

16.3 Is this a SIGNIFICANT MEDICAL DEVICE □ Yes □ No

16.4 Is the IDE (Investigational Device Exemption) held by the sponsor or by the investigator?
□ Sponsor (Please forward copies of the annual report from the sponsor to the IRB.)
□ Investigator (Please provide a copy of the original IDE application and copies of the annual reports at the time of periodic review)

17. Risks

17.1 Summarize the nature and amount of risk (including side effects) or substantial stress or discomfort involved. In addition to general questions about design (size, colors, etc.), the participants will also be asked about design ideas that might improve or strengthen relationships among students/teachers and between students and teachers. Concluding questions will ask if participants felt that their involvement in this research study has enhanced or reduced their attitudes toward their school and other students and teachers. These areas of questioning could make participants feel uncomfortable. The risks to research participants also include the potential inconvenience of using their lunch hour or other approved time by the school administration for research data collection.

17.2 What are the potential risks/discomforts associated with each intervention or research procedure? Questionnaires: Participants may feel uncomfortable answering questions about student-student, teacher-student, student-teacher relations or may feel uncomfortable discussing their attitudes toward their school and other students and teachers. Focus Group: Participants may feel uncomfortable offering opinions in a group setting where others may know who they are. Photographic Evaluation: PARTICIPANTS MAY FEEL UNCOMFORTABLE TAKING PHOTOGRAPHS FOR STUDY PURPOSES.

17.3 Estimate the probability (i.e. not likely, likely, highly likely, etc.) that a given harm will occur, its severity, and its potential reversibility. It is not likely that harm will occur. The research is minimal risk and involves collection of opinions and views only. The research will not collect sensitive private or personal information.

17.4 What procedure(s) will be utilized to prevent/minimize any potential risks or discomfort? Examples of risk include physical risks, psychological risks (such as substantial stress, discomfort, or invasion of privacy) and social risks (such as jeopardy to insurability or employability). If a participant feels uncomfortable answering questions in a questionnaire, they will be advised that their name/identifying information will not be included so others will not know about their opinions. However, at all times, participants will be advised that they can abstain from providing this information if it makes them uncomfortable. If a participant feels uncomfortable answering questions during the focus group session...
they can abstain from contributing. Efforts will be made to ensure that meeting times for questionnaire administration, focus group sessions, or photographic evaluation will not impinge on student learning, school curriculum, or extracurricular activities.

17.5 What is the overall risk classification of the research?

☐ Minimal ☐ Greater than minimal ☐ Significant
☐ If unknown, please explain: _______

18. Benefits

18.1 Describe the probable benefits of the research for the individual subject(s).
The probable benefits for the individual research subject include enhanced interest and knowledge in design, collaboration with peers, and being involved and having their opinions voiced.

18.2 Describe the probable benefits of the knowledge gained for society. Societal benefits generally refer to the advancement of scientific knowledge and/or possible benefit to future subjects.
The knowledge gained from this research study has the potential to influence the design of the new middle school prototype for the Clark County School District, which can provide long term benefits for the school district, administration, teachers, and students.

19. Risk-Benefit Ratio (Explain how the potential benefits of the research outweigh the potential risks and how these risks are justified.)
The possible benefits of a better school design outweigh the risks of potential discomfort in answering questions or potential time inconvenience due to participation in the study.

20. Cost to Subjects (Do not include financial costs in this section. See Section 22.)

20.1 Briefly describe the activity (i.e. laboratory testing, survey completion, travel time) that involves participation time:
Questionnaire administration, focus group sessions, and photographic evaluation.

20.2 Amount of participation time: 60 minutes per session for 4 session(s)

20.3 Describe any additional costs: NONE

21. Project Funding

21.1 Funding Status: ☐ Funded ☐ Pending ☐ Note (go to section 22)
Note: If funded/pending funding, please submit a copy of the application or proposal.

21.2 Funding Source:
☐ Federal/State
☐ NIH ☐ NSF ☐ NASA ☐ BRIN ☐ DOE ☐ Other: _______
☐ UNLV Internal Grants
☐ SIE ☐ NIA ☐ IRA ☐ ARI ☐ Other: _______
☐ Other: _______
☐ Self-funded

21.3 Are there any other contributions or support (e.g. device, drugs, etc.) provided by a company/spo and/granting agency?
☐ Yes ☐ No
If yes, explain: _______

21.4 Is any other type of contribution (aside from devices or monetary funds) being made by a company/spo and/granting agency?

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21.5 Has this project been submitted to the Office of Sponsored Projects (OSP)?

☐ Yes ☐ No  
Submittion date:  
If no, explain:  

21.6 Sponsor:  
Contract or Grant Number:  

22. Financial Information (For additional guidance, refer to the sample form on the OPRS website.)

22.1 What are the financial costs involved as a result of participation in the research study?  
NONE  

22.2 Are there additional expenses for the subject related to this protocol?  
☐ Yes ☐ No  
If yes, please describe:  

22.3 Will subjects be paid or otherwise compensated for research participation?  
☐ Yes ☐ No  
If yes, please respond to the following questions:  

a) Describe the nature of any compensation to subjects. Include cash, gifts, travel reimbursements, etc.  

b) Provide a dollar amount, (if applicable), and indicate method of payment.  

☐ Cash ☐ Check ☐ Other:  

23. Consent  

Refer to the UNLV Informed Consent Template to ensure that your submission follows the current standard consent format. Attach a copy of all consent form(s) and/or informational letter(s) used to describe the research study to potential subjects. Note: Consent must be obtained from subjects prior to enrollment/participating in the research study.  

23.1 Describe the consent process for enrolling subjects into this study. Students and teachers who express interest in volunteering to participate in the study will be provided with the appropriate informed consent form(s) for review prior to the consent meeting. Students are requested to take the Student Assent and Parent Informed Consent form home to discuss participation with their parents. Parents are encouraged to contact the Student Investigator for any questions they have about the study. They may also request to review the questionnaires, focus group content, or photographic evaluation procedures. Once the parents are comfortable with allowing their child to participate, they will need to sign the Parent Informed Consent and return it to the Student Investigator. Only the students who have obtained permission via a signed Parent Informed Consent will be allowed to proceed with the consenting process. Students and teachers will be asked to meet with the Student Investigator individually for the informed consent process. During this meeting, the research study will be described verbally, including the purpose, procedures, risks, benefits, voluntary nature, and confidentiality. Students and teachers will be asked if they have any questions or concerns, and these will be addressed. Once a potential research participant feels that they have been fully informed about the study, they can sign the informed consent/assent form and agree to voluntarily participate. The signed Student Assent and Parent Informed Consent are required before a student is allowed to participate. Teachers who wish to participate will be asked to sign the Standard Informed Consent document.  

23.2 Where will the consenting process take place?  At each respective middle school  

23.3 Will there be an opportunity for the subject to take the consent form home to discuss their participation?  
☐ Yes ☐ No  
If no, explain why:  

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23.4 What method(s) will be used to educate and increase the potential research subjects' knowledge of the research project and their rights as a subject? During the informed consent process, the research study will be described verbally, including the purpose, procedures, risks, benefits, voluntary nature, and confidentiality. All questions will be addressed before the informed consent is signed.

23.5 What method(s) will be used to evaluate the understanding of the potential research subject's comprehension about the research project and their rights as a subject? (Check all that apply)

- ✔ Verbal feedback of information
- ✔ Pre and Post-test
- ✔ Other (describe): __________

23.6 Please list all Consent Forms (Please compose all consent forms in a language appropriate to the study population.)

<table>
<thead>
<tr>
<th>Title of Consent Form</th>
<th>Purpose</th>
</tr>
</thead>
<tbody>
<tr>
<td>Standard Informed Consent</td>
<td>Teachers who wish to participate</td>
</tr>
<tr>
<td>2. Child Assent</td>
<td>Students (minors) who wish to participate</td>
</tr>
<tr>
<td>3. Parent Informed Consent</td>
<td>Parent providing permission for their child to participate.</td>
</tr>
<tr>
<td>4. Parent Informed Consent - Spanish</td>
<td>Parent providing permission for their child to participate.</td>
</tr>
</tbody>
</table>

23.7 Debriefing: If the study includes a debriefing script or information given to subjects, please attach with the submission. Is a debriefing script necessary?  □ Yes  ☑ No

24. Conflict of Interest

Conflict of interest refers to any situation in which financial, professional, or personal obligations may compromise or present the appearance of compromising an individual's professional judgment in designing, conducting, analyzing, or reporting research.

Does a conflict of interest exist with this study?  □ No  ☑ Yes, explain: __________

25. Project Enclosures (Check all appropriate boxes and include the items with the Proposal Form)

- ✔ Informed Consent Form(s)
- ✔ Child/Youth Assent Form
- ✔ Debriefing Script
- ✔ Waiver of Documentation of Consent
- ✔ Other items: Parent Informed Consent - Spanish Version (The student population at the Jerome D. Mack Middle School is 64% Hispanic). Although it is required per the I/E criteria that the student participant speak English, it is not required that the parent speak English. Therefore, the Parent Informed Consent has been translated as required by this IRB. The Spanish informed consent is verbatim to the English informed consent presented herein.

26. Complete Description of the Study Procedures

Study participation will last approximately four (4) weeks. Each week, participants will be asked to participate in a meeting that will last approximately one (1) hour. The total study time commitment is approximately four (4) hours. THE QUESTIONNAIRES AND FOCUS GROUP SESSIONS WILL TAKE PLACE AT A TIME DETERMINED BY THE SCHOOL ADMINISTRATION AND TEACHERS. ALTHOUGH THE SCHOOL ADMINISTRATION/TEACHERS ARE UNABLE TO
27. Investigator/Faculty Advisor/Student/Fellow Assurance

A. Investigator's Assurance:
I certify that the information provided in this application is complete and accurate. As Principal Investigator, I have ultimate responsibility for the conduct of this study, the ethical performance of the project, the protection of the rights and welfare of human subjects and strict adherence to any stipulations designated by the IRB. I agree to comply with all UNLV policies and procedures, as well as with all applicable Federal, State and local laws regarding the protection of human subjects in research including, but not limited to the following:

- Performing the project by qualified personnel according to the approved protocol.
- Not changing the approved protocol or consent form without prior IRB approval (except in an emergency, if necessary, to safeguard the welfare of human subjects).
- Obtaining proper informed consent from human subjects or their legally responsible representative, using only the currently approved, stamped consent form.
- Promptly reporting adverse events to OPRS in writing according to IRB guidelines.
- Arranging for a co-investigator to assume direct responsibility, if the PI will be unavailable to direct this research personally, as when on sabbatical leave or vacation.

<table>
<thead>
<tr>
<th>Principal Investigator's Name</th>
<th>Principal Investigator's Signature</th>
<th>Date</th>
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</tbody>
</table>

<table>
<thead>
<tr>
<th>Co-Principal Investigator's Name</th>
<th>Co-Principal Investigator's Signature</th>
<th>Date</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
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</tr>
</tbody>
</table>

B. Faculty Advisor Assurance: (Faculty Advisor must sign below if this is a student initiated research project.)

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By my signature as advisor on this research application, I certify that the student/fellow investigator is knowledgeable about the regulations and policies governing research with human subjects and has sufficient training and experience to conduct this particular study in accordance with the approved protocol. In addition:

- I agree to act as the liaison between the IRB and the student/fellow investigator with all written and verbal communications.
- I agree to meet with the student/fellow investigator on a regular basis to monitor the progress of the study.
- I assure that the student/fellow investigator will promptly report adverse events to OPRS according to IRB guidelines.
- I will arrange for an alternate faculty advisor to assume responsibility if I become unavailable, as when on sabbatical leave or vacation.

Faculty Advisor's Name
Faculty Advisor's Signature
Date

(The faculty advisor must be a member of UNLV faculty. The faculty member is considered the responsible party for legal and ethical performance of the project.)

C. Student/Fellow Investigator Assurance: (if applicable)
By my signature as Student/Fellow Investigator on this research application, I certify that I am knowledgeable about the regulations and policies governing research with human subjects and agree to conduct this particular study in accordance with the approved protocol. In addition:

- I agree to meet with my faculty advisor on a regular basis to discuss the progress of the study.
- I agree to meet with my faculty advisor to solve protocol issues, as they arise.
- I will promptly report adverse events to OPRS and my faculty advisor according to IRB guidelines.

Student/Fellow Investigator Name
Student/Fellow Investigator Signature
Date
Name of requester/researcher: Tina Wichmann
Title of Project: The New Middle School: Participatory Design and Outcomes

CCSD PERSONNEL: YES___ NO____
If CCSD Personnel:
Your work location:
Location number:
Postal Address:

RESEARCH IS TO BE CONDUCTED AS A STUDENT SEEKING:
Bachelor’s___ Master’s___ Doctorate____ Part of work duties____

RESEARCH IS TO BE CONDUCTED AS:
X___ An individual only
___ A faculty member of an institution of higher education
___ A researcher contracted by CCSD to perform the research
___ A vendor of products to the CCSD
X___ Other (Please identify the organization: Tale Snyder Kime Architects)

Funding Source for this research: Individual/Independent

IF YOUR RESEARCH IS TO BE CONDUCTED AS A STUDENT SEEKING A DEGREE, PLEASE COMPLETE THE FOLLOWING SECTIONS:

A. Research advisor/director information: (Vita)
Name: Michael Alcorn, AIA
Degree: BS, MS, MFA
Phone: (702) 895-3351
E-mail: michael.alcorn@unlv.edu
Postal address: 4505 Maryland Parkway, Box 44016, Las Vegas, NV 89154

B. Research/research design courses completed by applicant (by title)
1. Research Methodology, Psychology 42 (UCLA)
2. Statistical Analysis, Psychology 41 (UCLA)
3. CITI Certification (UNLV)

SPONSORSHIP BY CCSD DEPARTMENT/DIVISION ADMINISTRATOR
Yes___ No____ If yes:
Name of sponsor:
Title:
Department/Division:
Title of Project:

1.0 Define the problem to be investigated in this proposed study:

It is believed that the participation of students and teachers in the evaluation and critique of their current school design will provide architects with important insight in the creation of better schools for learning and social development. Current research has focused on two primary agents that influence the design of educational architecture. The first involves utilizing the school's or administration's mission statement, or academic value system, as a basis for design planning. The second considers the impact of architectural factors, such as natural lighting, on student performance. In general, however, student and teacher occupant participation, satisfaction, and enrichment have not been formally explored. This research study intends to gather information from students and teachers that can potentially be used in the design of the new middle school prototype for the Clark County School District (CCSD).

2.0 List the question(s) to be answered or the hypothesis(es) to be tested by the research:

The primary purpose of this thesis research is to explore the opinions of students and teachers with respect to middle school design, in order to contribute to the conception of a new middle school prototype school for the Clark County School District. The focus will be primarily on the "public" (non-classroom) spaces of the school, such as House/Pod Areas, Lockers/Corridors, Outdoor Commons, Cafeterias/Breakrooms, and Libraries, where students and teachers interact and socialize. The secondary purpose of this research is to determine if participation in the design of their middle school environment will encourage and motivate students and teachers on an intrinsic level, such that interest and ownership of their school design promotes better relationships and learning. It is hypothesized that student and teacher participation in their school design will enhance educational architecture and possibly promote motivation and improved relationships among school groups.
3.0 Describe the research design to be used in the research, including a description of the sampling plan:

If a mixed-methods study, provide design information for each component of the project. Examples: experimental, pretest-posttest control group design; quasi-experimental, comparative change; one-shot case study; etc.

This social/ architectural research design is exploratory, as it involves collection of opinions on the impact of school design on social relationships. Following a purposive, proportional quota sampling plan, two schools were selected to participate, Jerome D. Mark Middle School and Del E. Webb Middle School. These two schools were selected because they were part of the new middle schools that opened in Fall 2005, representing the most recent middle school prototype. The primary reason that two schools were selected was to meet the proper participant quotas for data collection (10 student participants at each grade level per school + 10 teacher/administrative participants per school = 80 participants). Additionally, it is hoped that these two schools, with their differing demographic profiles, might provide insight on how a prototype may need to be adjusted to reflect differing cultural dynamics.

4.0 Describe the data collection methods in detail:

Be sure to address securing permission and making arrangements with principals or administrators who are responsible for the subjects.

The Student Investigator has already met with the Assistant Principals for each school and secured permission and support for the research study. The Student Investigator will work closely with the Assistant Principals to create a timeline and schedule for data collection so that it is minimally invasive on school activities.

The Student Investigator will meet with the teachers at each school during a convenient time for the teachers (e.g., at the end of an administration meeting). Teachers will be given a brief flyer describing the study. If possible, a similar flyer regarding the study will be distributed to parents at the school's Open House night so they are aware of the study should their child bring home a Parent Informed Consent.

Depending on the classroom setup of the school, one teacher will be identified as the Representative of their classroom of students (i.e., homeroom/science teacher in the event that students have more than one teacher). Teachers who are interested in allowing their students to participate are asked to arrange for a meeting with the class.

Participation is entirely on an individual basis; it is not required that all students in a classroom participate and the teacher may or may not participate.

The Student Investigator will meet with the class and explain the study, procedures, and risks. Students and teachers who express interest in volunteering to participate in the study will be provided with the appropriate informed consent form(s) for review prior to the consent meeting. Students are requested to take the Student Assent and Parent Informed Consent form home to discuss participation with their parent(s). Parents are encouraged to contact the Student Investigator for any questions they have about the study. Once the parents are comfortable with allowing their child to participate, they will need to sign the Parent Informed Consent and return it to the Student Investigator. Only the students who have obtained permission via a signed Parent Informed Consent will be allowed to proceed with the consent process.

Students and teachers will be asked to meet with the Student Investigator individually for the informed consent process. During this meeting, the research study will be described verbally, including the purpose, procedures, risks, benefits, voluntary nature, and confidentiality. Students and teachers will be asked if they have any questions or concerns, and these will be answered.
Once a potential research participant feels that they have been fully informed about the study, they can sign the informed consent/assent form and agree to voluntarily participate. The signed Student Assent and Parent Informed Consent are required before a student is allowed to participate. Teachers who wish to participate will be asked to sign the Standard Informed Consent document.

Study participation will last approximately four (4) weeks. Each week, participants will be asked to participate in a meeting that will last approximately one (1) hour. The total study time commitment is approximately four (4) hours. The questionnaires and focus group sessions will take place at a time determined by the school administration and teachers. Although the school administration/teachers are unable to provide exact scheduling information at this time, it was previously discussed that they would prefer for study procedures to take place during non-essential class time such as physical education or fine arts. Questionnaires and focus group sessions will take place in a private room, where confidentiality can be controlled.

Once the informed consent has been signed and participants agree to participate in this research study, they will be asked to complete a demographic questionnaire that will ask their grade (if applicable), age, race, and school. This questionnaire will not ask for their name or any other specific identifying information. This questionnaire will be used by the investigator to gain generalized data about the study participants to see if there are any trends among grades, age, ethnic, or school groups.

1. Meeting 1 will involve distributing a questionnaire that will ask questions about the participant's likes and dislikes of particular design elements at their school. This questionnaire will also ask about design ideas that participants think might improve or strengthen relationships among students/teachers and between students and teachers. This meeting will last approximately 60 minutes.

2. Meeting 2 will be a focus group session, where participants (teachers and students) can voice their opinions and suggestions about their school design in a judgment-free environment. The focus group session will be a structured discussion led by the investigator. This meeting will last approximately 60 minutes.

3. At Meeting 3, participants will be provided with a disposable camera and placed into teams containing both students and teachers. Each team will be asked to walk around the school campus and photograph the design elements that they like and dislike. Participants will be asked to take notes on the items that they photograph, explaining why they have identified this object as a positive or negative design element. This meeting will last approximately 15 minutes. Outside of the meeting, the photographic survey will take approximately 45 minutes to complete. Participants will be required to return their disposable camera to the investigator at the end of the 60 minute period.

4. Meeting 4 is the final meeting, where a concluding questionnaire will be distributed and completed. This questionnaire will ask if the participant's involvement in this research study has enhanced or reduced their attitude toward their school and/or other students and teachers. This meeting will last approximately 60 minutes.
5.0 Summarize the data collection methods:
Mark "x" in space beside all that apply.

<table>
<thead>
<tr>
<th>Researcher Obtained</th>
</tr>
</thead>
<tbody>
<tr>
<td>Academic tests</td>
</tr>
<tr>
<td>Observation</td>
</tr>
<tr>
<td>Student records</td>
</tr>
<tr>
<td>Psychological intervention/treatment records</td>
</tr>
<tr>
<td>Medical records</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Subject Self-report</th>
</tr>
</thead>
<tbody>
<tr>
<td>X Survey/questionnaire</td>
</tr>
<tr>
<td>X Interview</td>
</tr>
<tr>
<td>X Personal interaction with subjects</td>
</tr>
</tbody>
</table>

6.0 List the sources of data that are dependent on school/district records.
Be specific (e.g., academic grades, attendance).

None.

7.0 Indicate the office/school level(s) targeted by research

- District office
- Region
- Alternative School
- Exceptional Students
- Elementary School
- Middle School
- High School

8.0 Indicate the number of participants and/or subjects in the research.
Use the total column if the grade designation is not applicable.

<table>
<thead>
<tr>
<th>Participants</th>
<th>Pre-K</th>
<th>K</th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
<th>6</th>
<th>7</th>
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<th>9</th>
<th>10</th>
<th>11</th>
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<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>Students</td>
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<td></td>
<td></td>
<td></td>
<td>60</td>
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<tr>
<td>Teachers</td>
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<td>20</td>
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<td></td>
<td></td>
<td>60</td>
</tr>
<tr>
<td>Principals</td>
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<tr>
<td>Parents</td>
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<td>Others</td>
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</tbody>
</table>

9.0 Estimate the amount of time the research project will require of each type of participant.
List the time units in decimal parts of an hour (e.g., 1.5 hours).

<table>
<thead>
<tr>
<th>Participant</th>
<th>Testing/Assessment</th>
<th>Interview</th>
<th>Observation</th>
<th>Training</th>
<th>Other</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>Students</td>
<td>3.0 hours</td>
<td></td>
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<tr>
<td>Teachers</td>
<td>3.0 hours</td>
<td></td>
<td>1.0 hours</td>
<td></td>
<td>4.0 hours</td>
<td></td>
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<td>Principals</td>
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<tr>
<td>Parents</td>
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<tr>
<td>Other</td>
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</tbody>
</table>
10.0 Explain the expected value of research to education in general:

It is hypothesized that student and teacher participation in their school design will enhance educational architecture and possibly promote motivation and improved relationships among school groups.

11.0 Explain the expected value of research to CCSD in particular:

This research study intends to gather information from students and teachers that can potentially be used in the design of the new middle school prototype for the Clark County School District (CCSD).

Duration of study:

Start: 9/15/2006 (upon approval from CCSD’s research review committee)

End: 5/15/2007
Using the format below, provide the following information:

1. SUBJECTS: Indicate efforts that will be made to assure equitable (gender, ethnicity etc. as appropriate) selection. When vulnerable populations are involved, describe why they are necessary. If subjects are to be paid, describe.

2. RISKS: Describe any potential risks to the subjects - physical, psychological, social, or legal - and assess the likelihood and seriousness of those risks. If the methods of research create potential risks, describe other methods, if any that were considered and why they will not be used. Describe procedures - including confidentiality standards for minimizing potential risks.

3. BENEFITS: Describe the anticipated benefits of the research to the individual subjects, to the particular group or class from which the subject population is drawn, and/or to society in general.

4. RISK-BENEFIT RATIO: Assess the relative weights of the study's risks and benefits.

5. COSTS TO SUBJECTS: If the investigation involves the possibility of added expense in time or money to the subject or to a third party, indicate how this is justified. Be sure this is mentioned in the consent form.

6. INFORMED CONSENT: Describe the method of obtaining informed consent, the person(s) who will be responsible for obtaining it, and where the informed consent forms will be stored. Note: It is the responsibility of the researcher to retain records relating to the research for at least 3 years after completion of the project. (When drafting the informed consent form, be sure to include all elements of an informed consent.

7. CHILD/YOUTH ASSENT: When children are subjects for research, assent from child (Child/Youth Assent Form) and permission from parent (Informed Consent Form) must be obtained (two separate documents).

Signatures (as appropriate):

Investigator: __________________________ Date: __________________________

CCS Sponsor: __________________________ Date: __________________________

Faculty advisor: ________________________ Date: __________________________
Do you think your child would like to play a part in their school design?

Researchers at the UNLV School of Architecture and Tate Snyder Kimsey Architects want your child's opinions on the design of a new middle school!

There is a research study that will take place at your child's school during the Fall 2006 semester. The researchers want to find out how your child feels about their current school design so that they can potentially use your child's feedback in the design of a new middle school for the Clark County School District.

Tina Wichmann, a Master's Degree student at UNLV, will be coming to your child's school to describe the study in more detail. If your child is interested in participating, you will be asked to provide permission. In the meantime, if you have questions or would like more information, please do not hesitate to contact Tina Wichmann at (702) 940-8082.
Cree usted que a su hijo le gustaría participar en el diseño de un colegio nuevo?

El departamento de Arquitectura, de la Universidad de Las Vegas Nevada, junto con la Compañía de Arquitectura Tate Snyder Kimsey, desean la opinión de su hijo/a en el diseño de un colegio nuevo!

Este estudio se llevará a cabo en el colegio de su hijo/a durante el semestre de otoño. Los investigadores quieren saber lo que su hijo/a piensa, sobre el diseño actual, para luego utilizar sus respuestas en el diseño de un colegio nuevo para el Distrito Escolar de Clark County.

Tina Wichmann, estudiante de Maestría de la Universidad de Las Vegas Nevada, se presentará en el colegio de sus hijos para explicar el estudio con más detalle. Si su hijo/a está interesado en participar, se les enviará un formulario pidiendo su autorización. Si usted desea más información, o tiene alguna pregunta, por favor comunicarse con Tina Wichmann al (702) 940-8082.
Have you ever wanted to play a part in your school design?

Researchers at the UNLV School of Architecture and Tate Snyder Kimsey Architects want you and your students' opinions on the design of a new middle school!

There is a research study that will take place at your school during the Fall 2006 semester. The researchers want to find out how you and your students feel about your current school design so that they can potentially use you/your students' feedback in the design of a new middle school for the Clark County School District.

Tina Wichmann, a Master's Degree student at UNLV, will be coming to your school to describe the study in more detail. In the meantime, if you have questions or would like more information, please do not hesitate to contact Tina Wichmann at (702) 940-8082.
ASSENT TO PARTICIPATE IN RESEARCH

The New Middle School: Participatory Design and Outcomes

1. My name is Tina Wichmann.

2. We are asking you to take part in a research study because we are trying to learn more about the opinions of students and teachers on middle school design. It is hoped that the information gathered from this study will help in the design of a new middle school for the Clark County School District. The study will focus on the “public” (non-classroom) spaces of the school, such as House/Pod Areas, Lockers/Corridors, Outdoor Commons, Cafeterias/Breakrooms, and Libraries.

3. If you agree to be in this study, you will be asked to attend four (4) meetings, one each week. Each meeting will take approximately one (1) hour.

   You will first be asked to complete a short form that will ask your grade, age, race, and school. This form will not ask for your name or any other information that could identify you. This form will be used to see if there are any trends among grade, age, race, or school groups.

   At the first meeting, you will be asked to complete a questionnaire about your school design. At the second meeting, you will be asked to participate in a group discussion about your school design. At the third meeting, you will be placed in a team with other participants and given a camera so that you can take pictures of the design elements that you like and don’t like at your school. At the final meeting, you will be asked to complete a questionnaire about your experience in the study.

4. There are risks involved in all research studies. For example, in addition to questions about design (size, colors, etc.), you will also be asked about design ideas that might improve relationships at your school or improve safety. At the end of the study, a questionnaire will ask if you felt that your participation in this study has changed your attitudes toward your school and/or other students and teachers. These areas of questioning might make you feel uncomfortable. The risks also include the potential inconvenience of using your lunch hour or other approved time for the research meetings.

5. There may not be direct benefits to you as a participant in this study. You may find that you have become more interested in design, liked working with your classmates, and enjoyed giving your opinions, or you may find that the study has not benefited you personally. However, we hope that the knowledge gained from this study might be able to influence the design of the new middle school for the Clark County School.
District, which can provide benefits for the school district, administration, teachers, and students.

6. Please talk this over with your parents before you decide whether or not to participate. We will also ask your parents to give their permission for you to take part in this study. But even if your parents say "yes" you can still decide not to do this.

7. If you don't want to be in this study, you don't have to participate. Remember, being in this study is up to you and no one will be upset if you don't want to participate or even if you change your mind later and want to stop. This study is not part of your regular school curriculum, and therefore your grades will not be affected by your decision whether or not to participate.

8. You can ask any questions that you have about the study. If you have a question later that you didn't think of now, you can call me at (702) 740-8082 or ask me next time. You may call me at any time to ask questions.

9. Signing your name at the bottom means that you agree to be in this study. You and your parents will be given a copy of this form after you have signed it.

Print your name ____________________________ Date ____________________________

Sign your name ____________________________
UNLV UNIVERSITY OF NEVADA LAS VEGAS

INFORMED CONSENT - PARENT

Department: School of Architecture

TITLE OF STUDY: The New Middle School: Participatory Design and Outcomes
INVESTIGATOR(S): Michael Alcorn, MS, MFA, AIA and Tina Wichmann, BA
CONTACT PHONE NUMBER: (702) 940-8082 (Tina Wichmann)

Purpose of the Study
Your child is invited to participate in a research study. The primary purpose of this study is to explore
the opinions of students and teachers on middle school design. It is hoped that the information
gathered from this study will help in the design of a new middle school for the Clark County School
District. The study will focus on the "public" (non-classroom) spaces of the school, such as
House/Pod Areas, Lockers/Corridors, Outdoor Commons, Cafeterias/Breakrooms, and Libraries. It is
hoped that participation in the design of their middle school will encourage and motivate students and
teachers, and promote better relationships and learning.

Participants
Your child is being asked to participate in this study because he/she is a student at either Del E. Webb
Middle School or Jerome D. Mack Middle School. In order to participate in this study, your child
must be able to provide voluntary informed consent (called "assent") and speak English. If you choose
not to allow your child to participate or if your child is unable to meet the time commitment required
by this study (described below), your child will not be able to participate.

Procedures
If your child volunteers to participate in this study (with permission by you), your child will be asked
to attend four (4) meetings, one each week. Each meeting will take approximately one (1) hour.

Your child will first be asked to complete a short demographic questionnaire that will ask their grade,
age, race, and school. This questionnaire will not ask for their name or any other information that
could identify them. This questionnaire will be used to see if there are any trends among grade, age,
etnic, or school groups.

At the first meeting, your child will be asked to complete a questionnaire about their school design. At
the second meeting, your child will be asked to participate in a group discussion about their school
design. At the third meeting, your child will be placed in a team with other participants and given a
camera so that they can take pictures of the design elements that they like and don't like at their school.
At the final meeting, your child will be asked to complete a questionnaire about their experience in the
study.

If you would like to see the questionnaires, group discussion content, or photography process, you can
contact the Investigator(s) at (702) 940-8082 or (702) 895-3031 for copies.
UNLV
UNIVERSITY OF NEVADA LAS VEGAS

INFORMED CONSENT - PARENT
Department: School of Architecture

TITLE OF STUDY: The New Middle School: Participatory Design and Outcomes
INVESTIGATOR(S): Michael Alcorn, MS, MFA, AIA and Tina Wichmann, BA
CONTACT PHONE NUMBER: (702) 940-8082 (Tina Wichmann)

Benefits of Participation
There may not be direct benefits to your child as a participant in this study. Your child may find that they have gained interest in design, liked working with their peers, and enjoyed giving their opinions, or your child may find that the study has not benefited them personally. However, we hope that the knowledge gained from this study might be able to influence the design of the new middle school for the Clark County School District, which can provide long term benefits for the school district, administration, teachers, and students.

Risks of Participation
There are risks involved in all research studies. This study may include only minimal risks. For example, in addition to general questions about design (size, colors, etc.), your child will also be asked about design ideas that might improve relationships among students, among teachers, and between students and teachers. Concluding questionnaires will ask if your child felt that their involvement in this study has changed their attitudes toward their school and/or other students and teachers. This type of questioning might make your child feel uncomfortable. The risks also include the potential inconvenience of using your child’s lunch hour or other approved time by the school administration for the research meetings.

Cost /Compensation
There will not be financial cost to you or your child to participate in this study. The study will take approximately four (4) weeks, with approximately one (1) hour of time each week. The meetings will be held at a time that is convenient, such as lunchtime. You or your child will not be compensated for your child’s time.

Contact Information
If you have any questions or concerns about the study, you may contact Tina Wichmann at (702) 940-8082 or Michael Alcorn at (702) 895-3031. For questions regarding the rights of research subjects, any complaints or comments regarding the manner in which the study is being conducted you may contact the UNLV Office for the Protection of Research Subjects at 702-895-2794.
UNLV
UNIVERSITY OF NEVADA LAS VEGAS

INFORMED CONSENT - PARENT

Department: School of Architecture

TITLE OF STUDY: The New Middle School: Participatory Design and Outcomes
INVESTIGATOR(S): Michael Alcorn, MS, MFA, AIA and Tina Wichmann, BA
CONTACT PHONE NUMBER: (702) 940-8882 (Tina Wichmann)

Voluntary Participation
Your child’s participation in this study is voluntary. You may refuse to allow permission for your child to participate in this study or in any part of this study. You may withdraw your child from this study at any time without prejudice to your relations with the school or university. This study is not part of your child’s regular school curriculum, and therefore your child’s grades will not be affected by their decision whether or not to participate. You are encouraged to ask questions about this study at the beginning or any time during the study.

Confidentiality
All information gathered in this study will be kept completely confidential. Your child’s name will only be gathered for the initial informed consent form (this form) and child assent form (a separate document that your child signs). All other information gathered for the study, including questionnaires, focus group notes, and photographs, will not contain your child’s name. However, during the focus group session, confidentiality cannot be guaranteed due to the group setting. No reference will be made in written materials that could link your child to this study. All records will be stored in a locked facility at UNLV for at least 3 years after completion of the study. After the storage time the information gathered will be destroyed by the Investigator.

Participant Consent:
I have read the above information and agree for my child to participate in this study. I am at least 18 years of age. A copy of this form has been given to me.

Signature of Participant ___________________________ Date ___________________________

Participant Name (Please Print) ___________________________

Participant Note: Please do not sign this document if the Approval Stamp is missing or is expired.

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UNLV
UNIVERSITY OF NEVADA LAS VEGAS

INFORMED CONSENT - PARENT
Department: School of Architecture

TITLE OF STUDY: The New Middle School: Participatory Design and Outcomes
INVESTIGATOR(S): Michael Alcorn, MS, MFA, AIA and Tina Wichmann, BA
CONTACT PHONE NUMBER: (702) 940-8082 (Tina Wichmann)

Propósito del Estudio
Su hijo/a está invitado a participar en un estudio. El propósito de este estudio es explorar las opiniones de los estudiantes y de los profesores, sobre el diseño de los colegios. Se espera que los resultados de este estudio, ayuden en el diseño de un colegio nuevo para el Distrito Escolar de Clark County. El estudio se enfocara en los espacios “publicos” del colegio (no en la aulas de clases), por ejemplo: Casilleros/Corredores, Areas Comunes, Cafetería/Cuartos de Descanso, y Bibliotecas. Esperamos que la participación en el diseño de su colegio, anime y motive a los estudiantes, y a los profesores creando mejores relaciones y aprendizaje.

Participantes
Se pide la participación de su hijo/a, en este estudio si son estudiantes del Colegio Del E. Webb o del Colegio Jerome D. Mack. Para participar en este estudio su hijo/a deberá proporcionar un permiso voluntario y hablar Inglés. Si usted no desea que su hijo/a participe o su hijo/a no califica con los requerimientos de este estudio, su hijo/a no podrá participar.

Procedimiento
Si su hijo/a se ofrece voluntariamente a participar (con su permiso), su hijo/a deberá asistir cuatro (4) reuniones, una cada semana. Cada reunión durara aproximadamente una (1) hora

Primero, su hijo/a llenara un cuestionario, que le preguntara su grado, edad, raza y colegio. Este cuestionario no preguntara su nombre o ninguna otra información personal que lo identifique. El cuestionario servirá para establecer alguna relación entre grados, edad, raza y colegio en el estudio. En la primera reunión su hijo/a llenara un cuestionario sobre el diseño de su colegio. Durante la segunda reunión, su hijo participara en una conversación (con todos los participantes) sobre el diseño de su colegio. En la tercera reunión, los participantes serán divididos en grupos y se les proporcionara una cámara fotográfica. Los estudiantes tomaran fotos de los elementos o áreas de su colegio que más les gustan y aquellas áreas que no les gustan. Finalmente, en la cuarta reunión, su hijo/a llenara un cuestionario sobre su experiencia en este estudio.

Si usted desea ver los cuestionarios, o requiere información de una o todas las reuniones que se llevaran a cabo, usted puede comunicarse con los Investigadores al (702) 940-8082 o al (702) 895-3031, y se les proporcionara copias.
INFORMED CONSENT - PARENT

Department: School of Architecture

TITLE OF STUDY: The New Middle School: Participatory Design and Outcomes

INVESTIGATOR(S): Michael Alcorn, MS, MFA, AIA and Tina Wichmann, BA

CONTACT PHONE NUMBER: (702) 940-8082 (Tina Wichmann)

Beneficios del Participante
Es posible que su hijo/a no se beneficie directamente de este estudio. Su hijo por ejemplo, puede darse cuenta de que el diseño le interesa, que tiene una habilidad y facilidad para trabajar en grupos y con sus profesores, que les gusta dar opiniones, o es posible que descubran que el estudio no les ha afectado personalmente. De todas formas, esperamos que lo aprendido por medio de este estudio, influya el diseño de un colegio nuevo para el Distrito Escolar de Clark County, lo cual beneficiará el Distrito Escolar, a la administración, los profesores y a los estudiantes, hoy y en el futuro.

Riesgos del Participante
Todo estudio tiene sus riesgos. Este estudio tendrá un riesgo mínimo en su hijo/a. Por ejemplo, además de contestar preguntas generales sobre el diseño del colegio (tamaño, color, etc.) su hijo/a proporcionarán ideas, que podrían ayudar en el diseño del colegio y a su vez mejorar la relación entre estudiantes, profesores y entre estudiantes y profesores. Uno de los últimos cuestionarios, le preguntará a su hijo/a su opinión sobre su participación en este estudio, y cómo este estudio ha cambiado su actitud hacia el colegio, los estudiantes y hacia los profesores. Aunque todas las respuestas dadas por su hijo/a serán confidenciales, este tipo de pregunta podría hacer que su hijo/a se sienta un poco incomodo. Otro riesgo, es la posibilidad de utilizar la hora de lunch u otra hora designada por la administración del colegio para realizar las reuniones.

Costos y Compensación
No habrá costo alguno por la participación de su hijo/a en este estudio. El estudio se llevará a cabo en un periodo de cuatro (4) semanas, una (1) hora por semana. Las reuniones se llevarán a cabo en una hora conveniente, como la hora de lunch. Su hijo/a no será compensado por su tiempo.

Información de Contacto
Si usted tiene preguntas o dudas acerca de este estudio, por favor comuníquese con Tina Wichmann al (702) 940-8082 o con Michael Alcorn al (702) 895-3031. Si tiene preguntas sobre los derechos de los participantes en este estudio, o si tiene alguna queja, o comentario sobre la manera en la cual este estudio está siendo conducido, favor comuníquese con la Oficina de Protección para los Participantes de Estudios, en la Universidad de Las Vegas Nevada, al 702-895-2794.
TITLE OF STUDY: The New Middle School: Participatory Design and Outcomes
INVESTIGATOR(S): Michael Alcorn, MS, MFA, AIA and Tina Wichmann, BA
CONTACT PHONE NUMBER: (702) 940-8882 (Tina Wichmann)

Participación Voluntaria
La participación de su hijo/a en este estudio es voluntaria. Usted tiene derecho a rehusar la participación de su hijo en este estudio. Usted tiene derecho a sacar a su hijo de este estudio en cualquier momento sin perjudicar la relación con el colegio o la Universidad. Este estudio no es parte del currículo escolar de su hijo/a, por lo cual las notas de su hijo/a no serán afectadas por la decisión de participar. Se anima a los padres de familia a hacer preguntas sobre este estudio, antes de iniciar este estudio o en cualquier momento durante el estudio.

Confidencial
La información que se obtenga por medio de este estudio es confidencial. El nombre de su hijo/a solo deberá ser proporcionado al final de este formulario y en otro formulario firmado por su hijo/a estableciendo que su participación es voluntaria. La información que se obtenga en las reuniones por medio de los cuestionarios u otras actividades, no indicara el nombre de su hijo/a. Dadas las circunstancias en las cuales este estudio se va a realizar, no se puede garantizar, que todo sea cien por ciento confidencial. Ninguna referencia hacia su hijo/a será hecha por escrito. Todo la información será guardada en un cuarto con llave en la Universidad de Las Vegas Nevada, por los siguientes tres años. Una vez que los tres años han pasado la información será destruida por los investigadores.

Autorización del Participante
Yo he leído la información anterior y estoy de acuerdo con la participación de mi hijo/a en este estudio. Tengo por lo menos 18 años de edad. He recibido una copia de este formulario.

Nombre del Participante (Favor usar letra de imprenta)

Nota al Participante: Por favor no firme este formulario si no hay una Sello de Aprobación o si el sello ha expirado.
UNLV UNIVERSITY OF NEVADA LAS VEGAS

INFORMED CONSENT

Department: School of Architecture

TITLE OF STUDY: The New Middle School: Participatory Design and Outcomes
INVESTIGATOR(S): Michael Alcorn, MS, MFA, AIA and Tina Wichmann, BA
CONTACT PHONE NUMBER: (702) 940-8082 (Tina Wichmann)

Purpose of the Study
You are invited to participate in a research study. The primary purpose of this study is to explore the opinions of students and teachers on middle school design. It is hoped that the information gathered from this study will help contribute to the design of a new middle school prototype school for the Clark County School District. The focus of the study will be primarily on the "public" (non-classroom) spaces of the school, such as House/Pod Areas, Lockers/Corridors, Outdoor Commons, Cafeterias/Breakrooms, and Libraries, where students and teachers intermingle and socialize. The secondary purpose of this research is to determine if participation in the design of their middle school environment will encourage and motivate students and teachers, such that interest and ownership of their school design promotes better relationships and learning.

Participants
You are being asked to participate in this study because you are a teacher at either Del E. Webb Middle School or Jerome D. Mack Middle School. In order to participate in this study, you must be able to provide voluntary informed consent and speak English. If you are unable to meet the time commitment required by this study (described below), you will not be able to participate in the study.

Procedures
If you volunteer to participate in this study, you will be asked to attend four (4) meetings, one each week. Each meeting will take approximately one (1) hour.

You will first be asked to complete a short demographic questionnaire that will ask your age, race, and school. This questionnaire will not ask for your name or any other information that could identify you. This questionnaire will be used to see if there are any trends among age, ethnic, or school groups.

At the first meeting, you will be asked to complete a questionnaire about your school design. At the second meeting, you will be asked to participate in a group discussion about your school design. At the third meeting, you will be placed in a team with other participants and given a camera so that you can take pictures of the design elements that you like and don't like at your school. At the final meeting, you will be asked to complete a questionnaire about your experience in the study.

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INFORMED CONSENT
Department: School of Architecture

TITLE OF STUDY: The New Middle School: Participatory Design and Outcomes
INVESTIGATOR(S): Michael Alcorn, MS, MFA, AIA and Tina Wichmann, BA
CONTACT PHONE NUMBER: (702) 940-8082 (Tina Wichmann)

Benefits of Participation
There may not be direct benefits to you as a participant in this study. You may find that you have gained enhanced interest and knowledge in design, enjoyed collaboration with your peers, and benefited from having your opinions voiced, or you may find that the study has not benefited you personally. However, we hope that the knowledge gained from this study might be able to influence the design of the new middle school prototype for the Clark County School District, which can provide long term benefits for the school district, administration, teachers, and students.

Risks of Participation
There are risks involved in all research studies. This study may include only minimal risks. For example, in addition to general questions about design (size, colors, etc.), you will also be asked about design ideas that might improve relationships among students, among teachers, and between students and teachers. Concluding questionnaires will ask if you felt that your involvement in this study has enhanced or reduced your attitudes toward your school and/or other students and teachers. These areas of questioning might make you feel uncomfortable. The risks also include the potential inconvenience of using your lunch hour or other approved time by the school administration for the research meetings.

Cost /Compensation
There will not be financial cost to you to participate in this study. The study will take approximately four (4) weeks, with approximately one (1) hour of time each week. The meetings will be held at a time that is convenient for most participants, such as lunchtime. You will not be compensated for your time.

Contact Information
If you have any questions or concerns about the study, you may contact Tina Wichmann at (702) 940-8082 or Michael Alcorn at (702) 895-3031. For questions regarding the rights of research subjects, any complaints or comments regarding the manner in which the study is being conducted you may contact the UNLV Office for the Protection of Research Subjects at 702-895-2794.
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UNIVERSITY OF NEVADA LAS VEGAS

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Department: School of Architecture

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All information gathered in this study will be kept completely confidential. Your name will only be gathered for the initial informed consent form (this form). All other information gathered for the study, including questionnaires, focus group notes, and photographs, will not contain your name. However, during the focus group session, confidentiality cannot be guaranteed due to the group setting. No reference will be made in written or oral materials that could link you to this study. All records will be stored in a locked facility at UNLV for at least 3 years after completion of the study. After the storage time the information gathered will be destroyed by the Investigator.

Participant Consent:
I have read the above information and agree to participate in this study. I am at least 18 years of age. A copy of this form has been given to me.

__________________________________________________________________________
Signature of Participant Date

Participant Name (Please Print)

Participant Note: Please do not sign this document if the Approval Stamp is missing or is expired.

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Identification #:_______

Questionnaire # 1

1. What school do you go to/work at? ________________________________

2. What grade are you in (please circle one): 6th  7th  8th  NA

3. Please provide your age: __________

4. Please indicate your ethnicity (please circle one): Hispanic  African American  Asian  White  Other
Questionnaire # 2

The following questions ask about how you feel about specific elements of your school's design.

1. Do you like the “House” or “Pod” system?  YES NO
2. Do you like the way that the lockers/corridors are designed?  YES NO
3. Do you like the way the outdoor common areas are designed?  YES NO
4. Do you like the way that your cafeteria is designed?  YES NO
5. Do you like the way that your library is designed?  YES NO

The following questions ask about your opinion on the flexibility and size of the spaces in your school.

1. Do you think that the spaces in your school are flexible and can be used for different social activities and group sizes?  YES NO
2. Which area(s) do you think are the most flexible (circle all that apply):
   House/Pod Area  Lockers/Corridors  Outdoor Commons  Cafeteria  Library  Other:
3. Which area(s) do you think are the least flexible (circle all that apply):
   House/Pod Area  Lockers/Corridors  Outdoor Commons  Cafeteria  Library  Other:
4. Looking ahead, do you think that the spaces in your school can adjust over time for the needs of future students and teachers?  YES NO
5. Do you think that your school feels:  TOO BIG  TOO SMALL
6. Which area(s) do you think feel too big (circle all that apply):
   House/Pod Area  Lockers/Corridors  Outdoor Commons  Cafeteria  Library  Other:
7. Which area(s) do you think feel too small (circle all that apply):
   House/Pod Area  Lockers/Corridors  Outdoor Commons  Cafeteria  Library  Other:
8. Do you think that the “House” or “Pod” system helps make the size of the school more comfortable?  YES NO
9. Do you think that the “House” or “Pod” system helped make it easier to transfer from elementary school to middle school? **YES NO**

10. Do you prefer to work in smaller settings or larger settings? **SMALLER LARGER**

The following questions ask about how your school design influences your school pride and sense of belonging at your school.

1. Do you think that your involvement in designing or decorating your school would make you more involved or interested in your school? **YES NO**

2. Do you think that your school colors help with school spirit? **YES NO**

3. Do you think that your school colors should be used more or less in your school’s design? **MORE LESS**

4. Do you think that your school logo and mascot help with school spirit? **YES NO**

5. Do you think that your school logo and mascot should be used more or less in your school’s design? **MORE LESS**

6. Please name up to three design suggestions that you think can increase school spirit:
   a. 
   b. 
   c. 

7. Do you think of your school as a place you like to be? **YES NO**
   If YES, why? 
   If NO, do you think that changing your school design can make it a better place to be? 

8. Please name up to three design suggestions that you think can make your school a better place to be (please stick to suggestions that you think can actually be implemented):
   a. 
   b. 
   c. 

9. Do you think that the “House” or “Pod” system helps you identify better with your classmates and teachers? **YES NO**

10. Do you think that the “House” or “Pod” system makes you feel like you fit in better? **YES NO**
The following questions ask about design elements or spaces in your school that you think either help or hurt relationships with your peers and teachers.

1. In which area(s) do you think you have the best social interaction with your classmates (circle all that apply)?

   House/Pod Area  Lockers/Corridors  Outdoor Commons  Cafeteria  Library

   Why?__________________________________________________________________________

2. Please list up to three things in your school design that you think help you have a good social interaction with your classmates:

   a. ___________________________  Why?______________________________________________
   b. ___________________________  Why?______________________________________________
   c. ___________________________  Why?______________________________________________

3. In which area(s) do you think you have the worst social interaction with your classmates (circle all that apply)?

   House/Pod Area  Lockers/Corridors  Outdoor Commons  Cafeteria  Library

   Why?__________________________________________________________________________

4. Please list up to three things in your school design that you think make you and your classmates more likely to have problems mingling or have a bad social interaction:

   a. ___________________________  Why?______________________________________________
   b. ___________________________  Why?______________________________________________
   c. ___________________________  Why?______________________________________________

5. In which area(s) do you think you have the best interaction with your teachers (circle all that apply)?

   House/Pod Area  Lockers/Corridors  Outdoor Commons  Cafeteria  Library

   Why?__________________________________________________________________________

6. Please list up to three things in your school design that you think help you have a good interaction with your teachers:

   a. ___________________________  Why?______________________________________________
   b. ___________________________  Why?______________________________________________
   c. ___________________________  Why?______________________________________________

7. In which area(s) do you think you have the worst interaction with your teachers (circle all that apply)?

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8. Please list up to three things in your school design that you think make you and your teachers more likely to have problems communicating:
   a. ___________________________ Why? ___________________________
   b. ___________________________ Why? ___________________________
   c. ___________________________ Why? ___________________________

The following questions ask you about whether you think that your school provides a sense of community.

1. Do you feel that your school design encourages a sense of community? YES NO

2. Do you like to stay at school during non-school hours (for example, before school starts or after school ends)? YES NO
   If YES, in what area do you like to spend your time? ___________________________
   Why? ___________________________

3. Does your school have a place where your community members can come for community events? YES NO
   If YES, where? ___________________________
   If NO, would you like to have a place like this? YES NO

The following questions ask you how you feel about safety at your school. *We would like you to think about not just safety from outsiders, but also safety from bullies or other students in your school.*

1. What specific things in your school design make you feel safe (for example, fences, gates, locker arrangement, how classes or lunch hours are scheduled)?
   a. ___________________________ Why? ___________________________
   b. ___________________________ Why? ___________________________
   c. ___________________________ Why? ___________________________

2. What specific things in your school design make you feel unsafe (for example, lack of fences, missing gates, locker arrangement, how classes or lunch hours are scheduled)?
   a. ___________________________ Why? ___________________________
   b. ___________________________ Why? ___________________________
   c. ___________________________ Why? ___________________________

3. Do the current safety measures at your school make you feel safer, or does it remind you that you and your school are vulnerable? MORE SAFE LESS SAFE

4. Do you think that the "House" or "Pod" system makes you feel safer? YES NO
5. Do you think that the way that the corridor/locker areas are designed makes you feel safer?  
   YES  NO

6. Do you ever change your behavior to avoid harm at school, such as changing the path you take or avoiding certain areas?  
   YES  NO
   If yes, what do you do? _______________________________________________________

7. Do you have any suggestions on how your school can change its design so that students do not feel threatened by other students or outsiders?

The following questions ask about the use of technology at your school.

1. Do you use the computers at your school?  YES  NO

2. Do you think that there are enough computer stations at your school?  YES  NO

3. Do you ever have to wait to use a computer?  YES  NO
   If yes, how long did you have to wait? _______ minutes

4. Do you like having a computer lab in your “House” or “Pod”?  YES  NO

5. Would you prefer to read books on the computer instead of checking them out of the library?  
   YES  NO

6. Please name up to three suggestions on how you think your school can improve or change the technology that is available:
   a. _____________________________________________
   b. _____________________________________________
   c. _____________________________________________

The following questions ask about your thoughts on environmental design for your school.

1. Is it important to you that your school use environmentally friendly products, such as recycled materials?  YES  NO

2. Does daylighting (light brought in from the outside through windows or skylights) make you enjoy your environment more?  YES  NO

3. Do you feel that views to the outside through windows make the environment better?  YES  NO

4. While you are inside a building, are you distracted by the activities going on outside the windows?  YES  NO
Questionnaire # 2

The following questions ask about how you feel about specific elements of your school's design.

1. Do you like the “House” or “Pod” system? YES NO
2. Do you like the way that the lockers/corridors are designed? YES NO
3. Do you like the way that the outdoor common areas are designed? YES NO
4. Do you like the way that your cafeteria is designed? YES NO
5. Do you like the way that your library is designed? YES NO

The following questions ask about your opinion on the flexibility and size of the spaces in your school.

1. Do you think that the spaces in your school are flexible and can be used for different social activities and group sizes? YES NO
2. Which area(s) do you think are the most flexible (circle all that apply):
   - House/Pod Area
   - Lockers/Corridors
   - Outdoor Commons
   - Cafeteria
   - Library
   - Other: ________________________
3. Which area(s) do you think are the least flexible (circle all that apply):
   - House/Pod Area
   - Lockers/Corridors
   - Outdoor Commons
   - Cafeteria
   - Library
   - Other: ________________________
4. Looking ahead, do you think that the spaces in your school can adjust over time for the needs of future students and teachers? YES NO
5. Do you think that your school feels: TOO BIG TOO SMALL
6. Which area(s) do you think feel too big (circle all that apply):
   - House/Pod Area
   - Lockers/Corridors
   - Outdoor Commons
   - Cafeteria
   - Library
   - Other: ________________________
7. Which area(s) do you think feel too small (circle all that apply):
   - House/Pod Area
   - Lockers/Corridors
   - Outdoor Commons
   - Cafeteria
   - Library
   - Other: ________________________
8. Do you think that the “House” or “Pod” system helps make the size of the school more comfortable? YES NO
Teacher Questionnaire

9. Do you think that the “House” or “Pod” system helps make it easier for students to transfer from elementary school to middle school? YES NO

10. Do you prefer to work in smaller settings or larger settings? SMALLER LARGER

The following questions ask about how your school design influences your school pride and sense of belonging at your school.

1. Do you think that your involvement in designing or decorating your school would make you more involved or interested in your school? YES NO

2. Do you think that your school colors help with school spirit? YES NO

3. Do you think that your school colors should be used more or less in your school’s design? MORE LESS

4. Do you think that your school logo and mascot help with school spirit? YES NO

5. Do you think that your school logo and mascot should be used more or less in your school’s design? MORE LESS

6. Please name up to three design suggestions that you think can increase school spirit:
   a. __________________________
   b. __________________________
   c. __________________________

7. Do you think of your school as a place you like to be? YES NO
   If YES, why? _______________________________________________________________________
   If NO, do you think that changing your school design can make it a better place to be? ______

8. Please name up to three design suggestions that you think can make your school a better place to be (please stick to suggestions that you think can actually be implemented):
   a. __________________________
   b. __________________________
   c. __________________________

9. Do you think that the “House” or “Pod” system helps you identify better with your colleagues and students? YES NO

10. Do you think that the “House” or “Pod” system increases your sense of belonging? YES NO
Teacher Questionnaire

Identification #:_______

The following questions ask about design elements or spaces in your school that you think either help or hurt relationships with your colleagues and students.

1. In which area(s) do you think you have the best social interaction with your colleagues (circle all that apply)?
   House/Pod Area  Lockers/Corridors  Outdoor Commons  Breakroom  Library

   Why?________________________________________________________________________

2. Please list up to three design elements in your school that you think help you have a good social interaction with your colleagues:

   a. __________________________________________________________________________
   Why? _________________________________________________________________________

   b. __________________________________________________________________________
   Why? _________________________________________________________________________

   c. __________________________________________________________________________
   Why? _________________________________________________________________________

3. In which area(s) do you think you have the worst social interaction with your colleagues (circle all that apply)?
   House/Pod Area  Lockers/Corridors  Outdoor Commons  Breakroom  Library

   Why? _________________________________________________________________________

4. Please list up to three design elements in your school that you think make you and your colleagues more likely to have a negative social interaction:

   a. __________________________________________________________________________
   Why? _________________________________________________________________________

   b. __________________________________________________________________________
   Why? _________________________________________________________________________

   c. __________________________________________________________________________
   Why? _________________________________________________________________________

5. In which area(s) do you think you have the best interaction with your students (circle all that apply)?
   House/Pod Area  Lockers/Corridors  Outdoor Commons  Cafeteria  Library

   Why? _________________________________________________________________________

6. Please list up to three design elements or spaces in your school that you think help you have a good interaction with your students:

   a. __________________________________________________________________________
   Why? _________________________________________________________________________

   b. __________________________________________________________________________
   Why? _________________________________________________________________________

   c. __________________________________________________________________________
   Why? _________________________________________________________________________

7. In which area(s) do you think you have the worst interaction with your students (circle all that apply)?
Teacher Questionnaire

Identification #:_____

<table>
<thead>
<tr>
<th>House/Pod Area</th>
<th>Lockers/Corridors</th>
<th>Outdoor Commons</th>
<th>Cafeteria</th>
<th>Library</th>
</tr>
</thead>
<tbody>
<tr>
<td>Why?</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

8. Please list up to three design elements or spaces in your school that you think make you and your students more likely to have a negative interaction:
   a. ____________________________ Why?
   b. ____________________________ Why?
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The following questions ask you about whether you think that your school provides a sense of community.

1. Do you feel that your school design encourages a sense of community?  YES  NO

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   Why?______________________________________________________________________________

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   If YES, where? ___________________________________________________________________
   If NO, would you like to have a place like this?  YES  NO

The following questions ask you how you feel about safety at your school. We would like you to think about not just safety from outsiders, but also safety from bullies or other students in your school.

1. What specific elements of your school design provide the best safety for you and students (for example, fences, gates, locker arrangement, how classes or lunch hours are scheduled)?
   a. ____________________________ Why?
   b. ____________________________ Why?
   c. ____________________________ Why?

2. What specific elements of your school design allow the most risk for you and students (for example, lack of fences, missing gates, locker arrangement, how classes or lunch hours are scheduled)?
   a. ____________________________ Why?
   b. ____________________________ Why?
   c. ____________________________ Why?

3. Do the current safety measures at your school make you feel safer, or does it remind you that you and your school are vulnerable?  MORE SAFE  LESS SAFE
Teacher Questionnaire

4. Do you think that the “House” or “Pod” system makes you feel safer? YES NO

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3. Do you feel that views to the outside through windows make the environment better? YES NO

4. While you are inside a building, do you feel that students are distracted by the activities going on outside the windows? YES NO
Questionnaire # 3

1. Do you feel that participation in this research study increased your interest in your school?  
   YES  NO

2. Do you feel that being involved and having "a say" in how to design a middle school makes you feel good about your school?  
   YES  NO

3. Do you feel that being involved and having "a say" in how to design a middle school makes you more motivated to come to school?  
   YES  NO

4. Do you feel that being involved and having "a say" in how to design a middle school makes you more motivated to do well in school?  
   YES  NO

5. Do you think that your participation in this study has made your relationships with other students better?  
   YES  NO

6. Do you think that your participation in this study has made your relationships with teachers better?  
   YES  NO

7. Although you may or may not attend the school where your ideas are put in place, do you think that your contribution was important?  
   YES  NO

8. Do you feel that having a part in this research study has benefited you in any way?  
   YES  NO
   If yes, please describe how:
Teacher Questionnaire

Identification #:_______

Questionnaire # 3

1. Do you feel that participation in this research study increased your interest in your school?  
   YES NO

2. Do you feel that being involved and having "a say" in how to design a middle school makes you feel good about your school?  YES NO

3. Do you feel that being involved and having "a say" in how to design a middle school makes you more motivated to come to school?  YES NO

4. Do you feel that being involved and having "a say" in how to design a middle school makes you more motivated to do your job better?  YES NO

5. Do you think that your participation in this study has made your relationships with other teachers better?  YES NO

6. Do you think that your participation in this study has made your relationships with students better?  YES NO

7. Although you may or may not work at the school where your ideas are put in place, do you think that your contribution was important?  YES NO

8. Do you feel that having a part in this research study has benefited you in any way?  YES NO
   If yes, please describe how:

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REFERENCES


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