THE LEARNING ENVIRONMENT AS PLACE: AN ANALYSIS OF
THE UNITED STATES DEPARTMENT OF EDUCATION’S
SIX DESIGN PRINCIPLES FOR
LEARNING ENVIRONMENTS

By
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The members of the Committee appointed to examine the thesis of CATHERINE MARY FRITZ find it satisfactory and recommend it be accepted.

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Chair

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Most of all, this work is a product of steadfast love that has been provided by many friends and family members who made significant contributions and sacrifices that allowed me to pursue my dream. I am so fortunate to have you in my life. Thanks to each of you.
This study analyzes six design principles that were developed by the U.S. Department of Education in 1998 to help articulate the meaning of 21st century education. It considers the relationships between the built environment and teaching/learning, as viewed through a theoretical lens that evolved during the study. This theory, entitled “The Learning Environment as Place” grows out of place-making theory that has been a part of architectural and urban planning study for more than three decades. Its application for this study suggests that schools are special places in the community that are formed from the interactions and interdependencies of people (children and adults), pedagogy (teaching and learning ideologies), and the physical environment (both indoor and outdoor).

This qualitative research work utilizes four case studies of actual schools in Juneau, Alaska to explore the six design principles using the “Learning Environment as Place” theory as a lens to view such questions as: How does a school support diverse learning? What components of a school reflect its place in the community? How can the
design of schools accommodate changes in teaching and social expectations for education over time?

An increased understanding of the six design principles results from this study. The outcomes suggest that American schools have many complex needs; that they shape, and have been shaped by, changing societal expectations. The current educational interest in a more comprehensive and diverse approach (as articulated in the design principles) is observed as paradoxical to the political directions of accountability through standardization.

The “Learning Environment as Place” theory provides school planners and designers a new way to understand these complexities in the planning and design process. It presents a model to consider the human behavioral and emotive complexities associated with teaching and learning as a part of the architectural solution. Thus, it offers a more comprehensive understanding of school environments as places in their communities.
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1.0 INTRODUCTION.

Educators and designers throughout the United States are collaborating toward the development of a new paradigm for education: one that moves from schooling to learning. This new direction, commonly referred to as “21st Century Education” or “School Reform,” recognizes that children learn in a variety of ways and in many different settings. The paradigm of learning calls for teachers to use many different instructional methods and models in their primary role as facilitators of each child’s learning process. It is widely accepted that school facilities have a role in this educational process – the fact that Americans are spending $16 billion per year in new school construction alone\(^1\) demonstrates a significance of some kind.

For more than a century, America’s education system has been served by school buildings commonly constructed from a repetitive plan of self-contained classrooms organized along a central corridor. This design has formed out of the social and political desire for a standardized public school system that is accessible to all children. There are historical paths that can be studied to understand where standardized design came from and why it has functioned effectively. The challenge before the school facilities community today is to understand how this design approach supports, or fails to support, the current emphasis of a more diverse learning environment.

The goal of equity remains a fundamental premise in America’s public schools, but educational methodology and delivery are changing the design of schools as interest in school reform grows. Societal values now aim toward the graduation of all students from secondary schools rather than the original goal of satisfying elementary reading and writing skills for those who chose to attend school. Simultaneous to these changed expectations, there has been

\(^1\) Education Policy Division, (June 14, 2000). Building America’s Schools: State Efforts to Address School Facility Needs, http://www.nga.org/cda/files/000620SCHOOLNEEDS.pdf
increased scientific research demonstrating that learning is as varied as human beings themselves. Thus, students and teachers are now engaging in a greater variety of activities in the classroom as understanding of diverse learning styles increases. The built environment that influences (and is influenced by) learning and teaching is changing from an accepted single design solution to that of a complex place that is formed through a variety of values and guiding principles.

This study will analyze the U.S. Department of Education’s six principles of school design that were developed in 1998 to help define education for the 21st century. It will consider the relationships between the built environment and teaching/learning, as demonstrated in actual schools. Through study and illustration of their meaning and application, the design principles will be clarified and more thoroughly understood for use in the professional field of school planning and design.

The research has been framed around a theoretical idea that evolved simultaneous with the study that schools are special places in the community that are formed from the interactions and interdependencies of people (children and adults), pedagogy (teaching and learning ideologies), and the physical environment (both indoor and outdoor). This work will explore the six design principles using the “Learning Environment as Place” theory as a lens through which the principles are viewed. It will examine four existing schools in Juneau, Alaska and consider the many issues raised in the six design principles through questions such as: How does a school support diverse learning? What components of a school reflect its place in the community? How can the design of schools accommodate changes in teaching and social expectations for education over time?

The study begins with a historical background of American education, beginning with colonial times. This perspective is framed around the theory of Learning Environment as Place,
noting the influential people, pedagogy, and physical environments that have shaped education in the United States for the past 400 years. The chapter ends with an introduction of the U.S. Department of Education’s six design principles for modern learning environments.

The study itself is discussed in chapters 3 and 4. Methodology is laid out, and strategies and tactics are articulated through the study of the four specific schools. The findings of the case studies make up chapter 4 and are organized as three distinct elements: analysis of the six design principles, analysis of the Learning Environment as Place, and analysis of the research tool’s (a matrix) ability to inform the principles and the theory.

Conclusions of the study are found in chapter 5. The focus here was to move back from the specific research tactics and take a macro-view of the completed work. What were the complex dynamics seen, and the causal links found in the study that might inform future efforts to improve schools? As with the findings, the conclusions discuss the design principles, the theory, and the research tool, but they do so through a synthesis of the information to form a more generalized application to school planning and design. Limitations of this study and suggestions for future work are also a part of the conclusions.
2.0 HISTORICAL BACKGROUND.

The educational system of the United States is rooted in the pursuit of social and religious freedom among people who immigrated to the continent from vastly different cultural and socio-economic backgrounds. Together, these diverse people have formed the compulsory American public schooling system that supports over 47 million elementary and secondary children today.\(^2\)

Fundamentally, the system is premised on the ancient Greek notion that learning is a social process and, in turn, is a primary responsibility of the social organization in which it occurs.

Today’s educational issues can be contextually understood through the study of major historical periods that illustrate various aspects of the American education system’s people, pedagogy, and physical environments. A summary of the relevant historical background is found in Figure 1 below. This matrix provides a base reference for the subsequent study that focuses on enhancing the understanding of the U.S. Department of Education’s six principles of school design.

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Figure 1. Historical Summary Matrix

2.1 Colonial America: Pedagogical Origins in Religious Freedom.

America’s schools have grown from both the physical conditions and the spiritual beliefs of settlement groups that colonized three distinct regions of the North American continent. These regions became known as New England, the Middle Atlantic, and the South. The characteristics of each region’s educational scheme varied with the needs and beliefs of the people who settled in these distinct geographic areas.

Beginning with the Mayflower Compact of 1620, Puritans settling in the colonies of New England embraced the theology of John Calvin (1509-1564) which, in essence, became their educational theory. The Puritans believed in strict conformity to rules of both behavior and belief. The chief responsibility of their educational approach was to draw children away from their born state of sin and immorality.

…the Puritans operated by the belief that all human beings, especially young people, are savage creatures who need constant discipline and supervision to control their inclinations and desires to operate outside of the norms established by society. The function of education is to help them redirect the behaviors beneficial to society as a whole.³

Parents took their role as primary educator very seriously, and children were forcefully obligated to obey. Children were strongly discouraged from self expression and emotion, and individual differences were repressed. The Puritans did not separate the intellectual development of the child from other aspects of his or her growth. Strict discipline was applied as both the code of social conduct and the educational dogma. Conformity was imposed by both philosophical and physical means that seem inhumane by today’s standards.
The Middle Atlantic colonies of Delaware, New Jersey, Pennsylvania, and New York had distinct differences from New England. The geography offered agricultural development that attracted a greater diversity of European people. The variety of cultural backgrounds, languages, and religious perspectives supported greater tolerance and understanding than found among their Puritan neighbors. Religious groups including Quakers, Lutherans, Jewish, and Roman Catholics existed in harmony with one another. The social organization exemplified much of the concept of religious freedom and personal liberty, but shared a fundamental belief that all people needed to be able to read the Bible to have a meaningful life. This became the basis for the educational system of this region and also led to the tradition of parochial schools that remains active throughout America today.

The educational philosophy of the South developed hand-in-hand with commerce, that is, agriculture. The plantation was a complete way of life. Slavery provided the labor needed to fulfill the climatic and geographic opportunities that nature provided this region. The economic success of slavery was justified through social and religious values of the South.

(Slavery) compelled the colonists to believe that some people were more important than others and so must be treated differently. Slavery also produced a new theory that a person’s place in society must be determined by what he did, and what he did must be dictated by who he was.

The idea that physical labor was an honorable vocation, as valuable to the society as intellectual endeavors, was developed through the economic focus of agriculture in the South.

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The South’s educational system emerged from the values of hard work and social position; both were supported by Protestant interpretations of the Bible.

2.2 Colonial America: Pedagogy Influences the Physical Environment.

The three colonial regions retained their distinctive approaches to social organization and education throughout the mid-18th century. Families took primary responsibility for educating their children, often grouping children together and hiring a teacher to provide instruction. Tutoring was a common practice for wealthier families, especially when extended families lived in close proximity to one another such as in a small town or on a plantation. The physical environment was modest in colonial times; homes served as classrooms or church facilities were used since they offered enough space to house a group of students. In warm climates of the South, school could be found in informal outdoor settings such as gazebos or open structures that provided shade. Larger communities constructed schools that were usually simple, one-room buildings. Some societal or religious norms required separate facilities for girls and boys, or at least separate entrances with designated seating inside the single room.

The one room schoolhouse is romanticized in American history with images of eager children being led by an intelligent professional educator through the day’s lessons. In reality, most one room schools of the late 18th and early 19th century would not be considered habitable by today’s standards. They lacked reliable heat, had limited natural or artificial light, were poorly ventilated from wood and coal smoke, and were aesthetically empty. Where conformity was an essential part of the educational philosophy, such as in New England, furniture consisted of simple wooden benches (sized for adult bodies) that were fixed to the floor.

Teachers had very limited education themselves and few curricula materials. Books were very expensive and not readily available in schools until the early 1900’s. In the colonial era,
group instruction was taught using only the Bible and a few books brought from home. The expectation for education was that a person needed to develop basic computation and reading skills, sufficient to understand the Bible. Teachers used recitation and rote memorization as primary delivery methods. This required students to be uniformly attentive to the teacher who was located prominently at the front of the room, much like the conductor of a symphony. Attendance was not compulsory so teachers did not have continuity with students. Each family considered the time their children had available for schooling outside their essential contribution to the family’s survival, or for their expected future roles in the family and community. Pedagogically, irregular attendance reinforced the teacher’s practical need to establish standardized lessons that could be repeated from time to time with simple, familiar materials that were readily available.

2.3 The American Revolution: Age of Reason.

By the 1800’s, political and social structures were contributing greatly toward the construction of a framework of the American educational system. The American Revolution instilled the concepts of individual liberty and equal rights. Political leaders of the time such as Benjamin Franklin (1706-1790) and Thomas Jefferson (1743 -1826) had profound effects on America’s future social and educational systems. They lived during a period of time known as the Age of Reason “when man glorified the acquisition and application of reason as the most important mental skill they needed not just to lead a successful life, but also to influence society.”7 Education was a passionate topic and given a critical role alongside democracy in the development of the new nation. Most notably was Benjamin Franklin’s position that America’s

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educational system must be designed to allow equal opportunity to all students. This theoretical idea has become the fundamental premise of nearly all decisions made in public education today.

Parallel to developing an organizational framework for schooling, the late 1700’s saw significant development in educational pedagogy. Jean-Jacques Rousseau (1712-1778), a French philosopher and writer rejected Puritan ideas that children are inherently bad and must be strictly molded in thought and behavior. Instead, he argued that children are naturally good at birth and that the society, in addition to the parents, has a responsibility to sensitively teach them through their various unique stages of human development. In 1762 Rousseau’s novel *Emile* was published about the educational development of a young man. In it, Rousseau presented his theory that outlined three essential components of education:

1) Nature is the great educator because it teaches through the senses to grasp the laws that operate in the world…
2) Teaching and learning must be adapted to the stages of development of the student…and
3) Teaching must be related to the student’s experiences so he can deduce the meaningful relationships that exist…

It would take over a century for Rousseau’s ideas to reach popular thought in America, but his were the seeds of educational theory that would grow the early 20th century reform movement.

By 1800, America was actively shaping the values that would form its unique political and social structure for education. In 1805, Lewis and Clark reached the coast of the Pacific Ocean, opening the vast wilderness of the North American continent. This expedition ignited a passionate political and social doctrine known as the Manifest Destiny expansionist movement. Thomas Jefferson, who as President had authorized the Lewis & Clark expedition, provided

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vision and relentless dedication toward the concept of public education for all. His legacy culminated in the formation of the University of Virginia in 1819.9

In 1808, Congress outlawed the importation of slaves. This began the divisive attitudes around human and civil rights for African-Americans that would fester for more than 150 years. By the mid-1800’s women used the pursuit of education as a platform for demanding equal rights; this too, would make slow progress over many decades. Education was viewed by political leaders and social reformers as the institution that could bring unity and prosperity to the young country. “Our schools, by producing one general and uniform system of education will render the mass of the people more homogeneous.”10

2.4 The Industrial Revolution: A New Physical Environment.

The most significant effect on the physical form of America’s school buildings also took place during the 19th century. The Industrial Revolution, which began in England nearly a century before, was shaping America in two important ways during this period: manufacturing became a viable economic base alongside agriculture, and as a result of both opportunity in America and repression in Europe, the population expanded greatly. Armed with both the theoretical concepts of a national educational system and the need to respond to social problems created by the influx of diverse peoples from around the globe, America built schools.

By the end of the Civil War in 1865, the three regions of colonial days had melded into two. The South remained distinct in its social and political approach while the New England and mid-Atlantic colonies found more commonality. A new region west of the Mississippi River was

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also beginning to take shape. For educational issues, regional identities were being replaced with two distinctive schooling typologies that remain true today: rural and urban. The issues of education in the urban centers created the modern concept of a school – multiple sets of uniformly organized, grade-specific classrooms. The repetitive nature of classroom design was a conscious part of the public schooling institution. It was first developed during the latter half of the 19th century when enrollment in urban schools exploded as new immigrants pursued basic literacy skills to allow them to economically survive and compete. As a practical matter, standardized design made school construction faster and cheaper. More importantly, however, standardization was consistent with the values of establishing a public education system where equity was defined through sameness. “The creation of standardized building plans paralleled efforts to further standardize the school curriculum and continuing efforts to “Americanize” the diverse student population.”11

2.5 Schools Emerge as a National Agenda.

The assorted customs, languages, and cultural practices brought by immigrants created significant societal challenges. There was growing concern that the country was becoming increasingly fragmented by this diversity and had no identity as a united group of states. The ideals of America’s founding fathers were not well understood by most immigrants. “Because many of the immigrants were from the lower economic classes, the tired and huddled masses of Europe, they were uneducated and did not understand their responsibility in a democratic

system.” By the late 1800’s the high numbers of immigrants led to the educational system’s prominence as a national topic.

…(Social reformers’) overriding preoccupation was with spiritual disunity, the growing gap between their own ‘enlightened’ values and stubborn vestiges of what they regarded as superstition and fanaticism. It was this that led them to see rural Calvanists and immigrant Catholics as a profound threat to the emerging national society.”

Reformers moved the focus away from the promotion of religion as a core value for the society and thus, America’s schooling system found its first “reform” in the Common School movement. Up until this time, churches and religious organizations had provided a significant amount of the overall education to children and immigrant adults. They had done so to support and promote their own religious beliefs, or as missionary outreach, especially to the poor. The basic idea of the Common School was to establish a school system that all the children of a community to attend. However, it also had a strong underlying social purpose.

The (common school agenda) term refers, also, however, to a program of educational reform, indeed of social reform through education. The heart of this program, which we will call “the common school agenda,” is the deliberate effort to create in the entire youth of a nation common attitudes, loyalties, and values, and to do so under central direction by the state. In this agenda ‘moral education’ and the shaping of a shared national identity were of considerably more ultimate importance than teaching basic academic skills.

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One important leader of the reform movement was Horace Mann (1796-1859). He was very influential in promoting the Common School agenda during his twelve years as secretary of the Massachusetts Board of Education. His approach represented many popular beliefs of the time, and was based on the following three major assumptions:

…1) education must be the duty of the state and a right for the people, 2) charity schools embodied elements of an aristocratic society and, therefore, must be dissolved, and 3) there needed to be a better way of financing education than was the case at the time.¹⁵

Mann significantly influenced the creation of both the positive and negative aspects of the public schooling system that is in place today. While he was a staunch advocate for systemic educational infrastructure that included professional teachers with decent compensation and good instructional materials, he also implemented the idea of a standardized single curriculum that has since come into significant question. Much of his common school thought was aimed at the primary school level because most students at the time were not expected to go on to secondary or higher education. Meanwhile, careers have become increasingly varied and complex, challenging the idea that all students should receive the same curriculum. Regardless of his personal theories about curricula or instruction, Mann should clearly be credited with solidifying and institutionalizing the idea that education is a national responsibility that will demand continual attention as society evolves.

2.6 The Progressive Movement: John Dewey Influences American Education.

The 20th century brought a number of pedagogical movements to the forefront as America defined the educational system of its industrial age. As the system expanded, schooling became

more standardized and impersonal. The appropriateness of both curricula and methodology was challenged by many philosophers and educators. John Dewey (1859-1952), Friedrich Froebel (1782-1852), and Maria Montessori (1870-1952) all recognized the disconnection that systemic education could have in fulfilling the needs of individual learners. Of particular importance to America’s education system was John Dewey. He was one of America’s great philosophical, social and educational thinkers whose life spanned from the Civil War through World War II. He lived during a period of tremendous social change, some of which was demonstrated through his leadership role of the Progressive Education Movement in the early 1900’s. In sharp contrast to the factory model of education that dominated urban schools as well as teacher training, this approach advocated individualized instruction focused on the needs of the whole child – that is, the child’s physical, psychological, emotional, and spiritual growth.

It is the very nature of life to strive to continue in being. Since this continuance can be secured only by constant renewals, life is a self-renewing process. What nutrition and reproduction are to physiological life, education is to social life.¹⁶

Dewey’s “Laboratory School” at the University of Chicago opened in 1896. The building was a former residence that worked very well for a program that was built around hands-on learning activities that supported real life. Classrooms were appropriately formed from the former living spaces of the home. Furniture consisted of tables and chairs that could be arranged as needed, depending on the activity.

Although the Laboratory School established some important foundations for future educational practice and school design, it did not survive the political pressures of the University. In 1904, John Dewey left the University of Chicago as a result of tensions that had developed

with the University President and its alternative educational laboratory school (that did not support Dewey’s concepts, but brought a one million dollar grant to the University).\textsuperscript{17} Dewey went on to work in psychology and philosophy as well as education. He taught at Columbia University for many years and was a noted lecturer around the world. However, his ideas about the actual practice of teaching remained, for the most part, in lecture halls and laboratories. The tremendous increase in school attendance and the intensity of school construction projects across the nation made it very difficult to put the brakes on the standardized system that was forging its way across the country. This momentum was interestingly analogous to the role that the railroads played in expanding and settling the western U.S. during the same era.

\textbf{2.7 20th Century Education: The Open Classroom Experiment.}

Major events such as World Wars I and II, the Great Depression, and the war in Southeast Asia had significant impacts on the ability for America’s large public school system to make substantive changes. Enrollment in the nation’s public schools grew rapidly during the 1950’s - 1960’s, starting at approximately 25.1 million in 1950 and peaking to 46.1 million in 1971.\textsuperscript{18} The system continued to struggle with its national schooling identity throughout this period. The latter half of the 20\textsuperscript{th} century was an era of tremendous discovery in science and technology. Concerns of world competition and inwardly focused national conservatism (influences such as “McCarthyism”) dominated many social and political discussions. The education theme of this era was to lead the world as the biggest and the best.

The civil rights movement of the 1950’s - 70’s brought questions about how society should be defined. Rather than promoting individuals to meld into a single definition of

\textsuperscript{17} Wolfe, Jennifer (2000) \textit{Learning From the Past}. Mayerthorpe, Alberta, Canada: Piney Branch Press, p. 184.

\textsuperscript{18} National Center for Educational Statistics http://nces.gov//pubs2002//digest2001/tables
“American,” the idea that human beings have diverse and unique individualities began to emerge. This pointed to the need to look at institutions (such as education) with an understanding that the whole is constructed from many distinctive, complex parts rather than the traditional approach that created a single whole and converted diverse people to fit within it. The philosophical ideals of this era manifested themselves in the physical form of the open classroom.

Open space provides the setting for a new kind of learning experience for teachers and children alike. The open concept in teaching is, as much as anything, a state of mind – a very special state of mind… Open space is designed to achieve child-centered learning. Each child is different and each learns in his own manner. Thus the concepts of open space and individualized instruction go hand in hand. The individual child, not the curriculum, is the focal point of each learning center. Each child is encouraged to work at his own speed toward the realization of his highest potential.¹⁹

Open classrooms were short lived, however, primarily because the physical environment was provided without understanding the interdependencies between people and pedagogy that also have important roles in forming schools. School architecture was generally understood as an important public infrastructure, but remained a separate element from education that did not have significance in the fundamental goal of teaching and learning.

(During the late 1940’s – 1950’s) a new style of architecture was dominating design theories. ‘Modern architecture’ was quickly adopted for schools because it generated simple boxy buildings that were easy to plan and inexpensive to build. Some masterpieces were created, but unfortunately, not all (school) boards, administrators, and
architects were sensitive to the existing community environment and its need for well-designed buildings and green open space.  

By 1970, a new American dream was clearly visible across the landscape – the single family house with a 2-car garage on a .25 acre lot, located in the suburbs. Millions of homes were constructed in newly platted subdivisions for mobile middle class families who were predominately white. School buildings in the suburbs were single story spacious buildings with comfortable amenities for sports, performing arts and the like. Many of the new suburban schools were in the open classroom style. Their design was viewed as something fresh and new – like the suburbs themselves.

2.8 Desegregation: Maintaining Systemic Equity.

One of the educational fall-outs of the development of suburbia was court ordered racial desegregation. The movement of middle class whites out of formerly viable urban neighborhoods shattered many ethnic minority families who had less economic and social flexibility. Additionally, several southern states (Georgia, Alabama, and Mississippi in particular) had maintained significant socio-economic ethnic stratification despite the abolition of slavery 100 years before. In many areas of the United States children were bussed out of their neighborhoods to attend schools in areas with more diverse ethnic make-ups. The national school agenda focused on equity and equal access. Resources of school districts were compared to one another. Equity became understood as sameness. This was a period of intense social turmoil in America where divisive politics isolated and separated many people, and power bases led (or prevented) change.

American Association of School Administrators (1971), Open Space Schools, Washington, D.C.
2.9 Standardized Pedagogy in a Standardized Physical Form.

Despite social and institutional challenges, standardized building form, teaching, and curriculum continued to be the predominant approach through the latter half of the 20th century and remains so today. In this model, a variety of textbooks and supplemental materials are used with content typically delivered through a predominately lecture format to students grouped according to age/grade level. Children of all ages are expected to sit at desks, often in regimented rows, and “receive” their education through a very strict code of behaviors from teachers who take on the awesome responsibility of providing knowledge to each child. This approach can support many learners who achieve through logical/mathematical means, linguistics, and through auditory reception. Only at the kindergarten level (and to a limited degree through the second grade) has there been institutional acceptance of the idea that learning for many children occurs through multiple senses, through movement, socialization with others, nature, music, art, etc. In addition to lectures, the typical teacher provides assistance to individual students (one-on-one) when class time allows, or outside of regular class time when students have difficulty understanding the content through the general delivery.

The need for focused attention by all students simultaneously, toward the teacher at the front of the room has created the typical configuration of school classrooms for nearly every grade level. The basic rectangular configuration, with a designated “teaching wall” at one end and rows of desks facing the “front” has been the resultant design. Such classrooms can be easily and efficiently aligned along a central corridor to form a complete school plan. Logical and cost effective structural design results in load bearing corridor walls. Both the corridor and the classrooms were seen as fixed elements, not expected to change over time or need to

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accommodate a variety of activities. The standardized school building spread across America during the latter half of the 20th century, especially during the period of 1950-1975 as suburban American took form.

2.10 Theory of Multiple Intelligences: New Pedagogical Directions.

Howard Gardner’s (1948- ) work of the 1980’s – 1990’s combined research from sociology, psychology, and physiology to recognize that humans learn in many different ways. Gardner’s theory of multiple intelligences concludes that individuals perceive the world in at least eight different and equally important ways – linguistic, logical-mathematical, musical, spatial, bodily-kinesthetic, naturalist, interpersonal, and intrapersonal – and that education should foster the development of all these forms of thinking. 21 This theory is now embraced by educators around the world, and has also contributed significantly to the expansion of the school environment beyond the traditional classroom walls. Learning environments are now recognized in diverse settings such as parks, urban centers, beaches, and farmlands. The impact of multiple intelligences theory has been mostly understood as pedagogy - it has not yet significantly impacted the form of standard school designs.

Middle Schools: A Pedagogical Focus on Adolescents.

The concept of the junior high school was developed in the 1920’s and grew into common practice by 1940. Founders Leonard Koos and Thomas Briggs created the junior high school as “a device of democracy whereby nurture may cooperate with nature to secure the best results possible for each individual adolescent as well as for society at large.” 22 The model had a lot of trouble living up to these high ideals, however. It was dominated by senior high programs that

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were often housed in the same facility. The junior high was not successful in fulfilling the distinct needs of children in grades 7-9. By the early 1980’s reforms to the junior high came in the development of the “Middle School Model.” In 1982 the National Middle School Association published “This We Believe” which drew national attention to the education of adolescents. The paper articulated ten essential elements of a true middle school:

(1) educators knowledgeable about and committed to young adolescents, (2) a balanced curriculum based on student needs, (3) a range of organizational arrangements, (4) varied instructional strategies, (5) a full exploratory program, (6) comprehensive counseling and advising, (7) continuous progress for students, (8) evaluation procedures compatible with the nature of young adolescents, (9) cooperative planning, and (10) positive school climate.23

The Middle School philosophy emphasizes that early adolescence is not simply a stage of being “younger high schoolers.” This age group has distinctive learning needs that are much different than those of high school. Contemporary brain research points to physiological differences of the young teenage brain as it undergoes major restructuring during this period of human development. “The regions of their brain responsible for judgment, insight, and planning are still immature.”24

The specific attributes of good learning environments for children ages 12-15 have been debated and refined during the past 20 years, as popularity for replacing junior highs with middle schools has grown. The 1989 publication, “Turning Points: Preparing American Youth for the

22 Lounsbury, John H. (1996). Key Characteristics of Middle Level Schools. ERICDigests ED401050
23 Lounsbury, John H. (1996). Key Characteristics of Middle Level Schools. ERICDigests ED401050
24 Yurgelun-Todd, Deborah, as presented by Begley, Sharon (May 8, 2000) . Mind Expansion: Inside the Teenage Brain, Newsweek, p.68.
21st Century Further increased the public’s understanding of middle schools as a more responsive educational model for the complex needs of adolescent children. The report encouraged using smaller learning to engage both children and their families in the process of education, and better connect school with the community at large. These are integral goals for middle schools today.

2.12 21st Century Challenges: A Nation at Risk.

As the 20th century closed, many of the core assumptions of America’s educational system were being questioned. “A Nation at Risk,” published by the National Commission on Excellence in Education in April, 1983 rang an alarm that was heard far beyond the educational community regarding the condition of America’s schools. The Commission’s charter specified many areas of investigation when their work began in 1981. Most notably were:

...assessing the quality of teaching and learning in our Nation's public and private schools, colleges, and universities; comparing American schools and colleges with those of other advanced nations; assessing the degree to which major social and educational changes in the last quarter century have affected student achievement; and defining problems which must be faced and overcome if we are successfully to pursue the course of excellence in education.26

As demonstrated by its subtitle, “The Imperative for Educational Reform,” the Commission identified many failings in the existing educational system (both public and private), identifying

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five fundamental areas critical to improving education. These were Content, Standards & Expectations, Time, Teaching, and Leadership & Fiscal Support. These were not new topics and, in fact, the American right to access education was reinforced by the report.

All, regardless of race or class or economic status, are entitled to a fair chance and to the tools for developing their individual powers of mind and spirit to the utmost. This promise means that all children by virtue of their own efforts, competently guided, can hope to attain the mature and informed judgement needed to secure gainful employment, and to manage their own lives, thereby serving not only their own interests but also the progress of society itself.27

However, a new approach that was more individualized and diverse was appearing in the application of these topics. The single approach to education was being challenged on the pedagogical level, in context with the societal changes that were defining America in the new century. The Commission noted,

We must emphasize that the variety of student aspirations, abilities, and preparation requires that appropriate content be available to satisfy diverse needs. Attention must be directed to both the nature of the content available and to the needs of particular learners… We must demand the best effort and performance from all students, whether they are gifted or less able, affluent or disadvantaged, whether destined for college, the farm, or industry.

Our recommendations are based on the beliefs that everyone can learn, that everyone is born with an urge to learn which can be nurtured, that a solid high school education is

within the reach of virtually all, and that life-long learning will equip people with the 
skills required for new careers and for citizenship.  


As the understanding of diverse human needs becomes greater understood, the roles and 
responsibilities of both students and teachers become more complex. “Even the school’s product 
has changed. Schools can no longer function as filling stations to which young people drive up, 
receive the knowledge they need for a working lifetime, and then drive away. The new goal of 
education is to “learn to learn.’”  

Student socialization is a critical part of the new learning paradigm of the 21st century, 
developing workers who can collaborate with others, share ideas, and work as a team. 
Traditionally, students have had little freedom in interacting with others as a part of learning. 
Social activities like talking, sharing ideas, and grouping with friends was viewed by teachers as 
a negative behaviors. The contemporary classroom is a place where learners are actively engaged 
in participatory processes that include real life experiences rather than only receiving information 
(content) from the teacher. “There is now substantial evidence that students working in small 
cooperative groups can master material better than can students working on their own.”  
“Even in the workplace, we’re recognizing how much collaboration actually goes on in American life 
and how valuable group problem solving is, compared to perpetual competitiveness and 

28 ibid.  
isolation.” Socialization activities are placed in the same realm as cognitive learning, providing synergistic benefit that more accurately reflects the real world.

Evaluating a student’s learning in a diverse curriculum with multiple learning styles and abilities is also more complex than a standardized system where students are assumed to learn in the same way. Not only does the role of the teacher change, but the delivery of the curriculum, and sometimes the curriculum itself must also change due to the need to evaluate. Learning standards are replacing standard learning as broader assessment tools evolve. Teacher training and parenting styles have substantial effects on the success of individualized instruction and group learning. Additionally, the overall purpose of standardized testing in a system that is set up to support diversity creates measurement conflicts not yet resolved by educators. These are the challenges of replacing the schooling paradigm with the learning paradigm.


The physical space needs for traditional group instruction has been achieved in the building form with relative ease, but assessment (demonstrating knowledge through application) is more complex. Space needs in 21st century schools to be multi-purpose and provide areas for students to gather a variety of data and construct models and props. The environment needs to support individuals and small groups of students working together, and provide presentation areas (pin-ups, flip charts, electrical connections for computers and projectors, seating for an audience). Lighting may need to vary, electrical power and water be more available, and access to the outdoors and to community resources becomes important. Interdisciplinary and/or multidisciplinary learning which is thought to be more accommodating to the needs of both

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teachers and learners in a diverse curriculum setting also adds a level of complexity to the physical space. All of these issues have shifted the focus from what students learn (content based) to how and where they learn (process based) and demonstrate the inter-dependencies of people (students and teachers), pedagogy (curriculum and instruction) and the physical environment (indoor and outdoor).

The simplicity of the repetitive school plan is a significant impediment for teachers of the 21st century who are trying to vary the standardized approach through the use of formats that respond to students’ multiple learning styles and individuality. Current school reform encourages variety in curriculum and delivery, emphasizing standards and assessment in lieu of traditional testing and grading. The tactics employed to facilitate individualized education are distinctly different from those used in the traditional model of a uniform system of schooling, and the built environment needs to be different, too.

Nationwide, school reform efforts have introduced new methods of instruction and new expectations for schools that have increased demands on both the personnel and educational facilities. Most education reform strategies encourage teachers to move away from teaching formats that rely on the chalkboard and passive students seated in rows of desks. New teaching formats require flexible spaces that can be used for large- and small-group instruction, laboratory classrooms, and media centers with multiple information resources.32

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2.15 Design Principles for Learning Environments.

In 1998, the U.S. Department of Education recognized the need for new ways of thinking about school design. They responded to the growing concern among school planners and designers that the tremendous capital cost of school facilities should better reflect the desired pedagogical directions for educators. “The pressing need to add, renovate or replace educational facilities presents an opportunity for citizens, educators and facilities planners to take a broader view of what constitutes an effective, appropriate learning environment.”33 The U.S. Department of Education brought together a group of 250 educators, architects, and school planners in a National Symposium of School Design to articulate the meaning of good planning and design for optimal learning environments. A report entitled Schools as Centers of Communities: A Citizens’ Guide For Planning and Design resulted from the work of this symposium. Its purpose was “to help educators, planners and community members meet the challenge of providing effective educational facilities to serve the citizens of their own communities.”34

The report identifies the following six Design Principles (noted in bold) that define basic parameters for good design of modern school environments:35

Design Principle #1: “The learning environment should enhance teaching and learning and accommodate the needs of all learners.” Traditional large group, teacher centered instruction is being replaced with a variety of tactics that increase student involvement, engaging learners into an active participatory process of doing rather than receiving and recreating.

34 ibid.
Design Principle #2: “The learning environment should serve as center of the community.” Shared use of facility space, integrated curricula, collaborative staffing, and utilizing nontraditional settings such as museums, zoos, and parks strengthen a community’s sense of identity, create economic stimuli, and engage multiple generations in dialog of their unique educational issues.

Design Principle #3: “The learning environment should result from a planning and design process involving all stakeholders.” The planning and design of public schools is an inviting forum for modeling the ways that students should learn: through collaboration, shared decision making, and democracy. The model of collaboration, where teachers, students, and parents are empowered in the education process is also useful in the day to day operations of the school.

Design Principle #4: “The learning environment should provide for health, safety and security.” Schools need to be physically, psychologically, and emotionally safe places. Size and scale of the school can affect health and safety by influencing students’ and adults’ abilities to form personal relationships. Lighting, indoor air quality, and the toxicity of materials affect the school’s ability to be a comfortable place for learning.

Design Principle #5: “The learning environment should make effective use of all available resources.” School designs can maximize available resources through multi-purpose and shared use, technology, and natural/cultural resources to become places that support continuous opportunities for teaching and learning.
Design Principle #6: “The learning environment should allow for flexibility and adaptability to changing needs.” Schools can be expected to continue to evolve and therefore need to have adaptable facilities and flexible attitudes to meet future demands.

These six principles provide a platform from which to explore many aspects of contemporary school environments during the current era that is moving toward the “learning paradigm.” The design principles invite questions about the essential elements of good schools, and what role the facility has in the activity of learning. They open discussions about the relationships between built environments and teaching/learning. The study herein will analyze the design principles to bring increased understanding to the school planning and design process. It will consider their deeper meaning and relevance in the thousands of schools that operate in America today.
3.0 THE STUDY.

3.1 The Need for the Study.

There are three significant reasons for this study. First, school buildings are important public facilities with long life spans. States and communities make substantial financial investment in education through the construction of school buildings. School construction is big money in America, and the need continues to grow.

The National Center for Educational Statistics estimates two new K-12 buildings are started each business day with the total costs approaching $16 billion in 2001. A recent Public Agenda report concluded that an additional $200 billion is needed to modernize old school buildings, and, according to the National Education Association, it would take $322 billion to adequately repair and build American schools and to wire them for new technologies.36

School construction is primarily funded through bonded taxation in states and communities throughout the United States. The specific funding tactics and formulas vary greatly between states, with more than half using a shared allocation method of both local and state dollars. Federal assistance is provided on a small scale for specialized projects; for example, in recent years Charter schools have received federal grants for building construction and start-up costs. Many local governments have been significantly stressed in trying to provide for basic school operational costs, let alone capital construction. There is a continued funding emphasis to do “more with less” in school facilities. This has negatively impacted school administrators’ and

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36Education Policy Division, (June 14, 2000). Building America’s Schools: State Efforts to Address School Facility Needs, http://www.nga.org/cda/files/000620SCHOOLNEEDS.pdf
planners’ interests in new ways of thinking about the built environment. They have looked to prototypical design and standardization, resulting in less time, money, and creativity being spent on programming and school design. Prototypical design, by definition, must isolate unique human factors and deliberately not act upon design opportunities to effectively be repeated in numerous locations. Prototypes are inherently contrary to the concept of schools as social centers of the community. Simultaneously, however, is the growing realization that insufficient time and money spent in planning and design can result in even greater cost over the life of the building through modifications and inefficient systems. And the lack of diligence during planning and design of a school can impede teaching and learning effectiveness for many generations.

A second reason for this study lies in the change in systemic expectations toward the purpose and responsibilities of education. The educational system of early America had a much different focus than the one in place today. Historical attitudes about molding society into a single set of beliefs that could be ingrained through schooling have been cast off. The contemporary educational system supports the idea that Americans are diverse people who learn in many different ways, and in many different time frames. The educational institution is having to move from a single belief system to one that is complex in diversity. This change in philosophical approach, methods, and implementation is driving the need to re-evaluate everything about schools.

Finally, enhanced understanding of the six design principles is relevant for practicing school planners and designers. A significant amount of school design occurs today without thoughtful consideration of the connections between architecture and education. There is little awareness among people making school design decisions of the social and psychological issues that establish schools as special places in a community. The six design principles may provide an important basis for school planning and design if they can be better understood.
3.2 Goals of the Study.

This study grew from an interest of acquiring an increased understanding of the relationship between teaching/learning and the built environment. It considers the American school as a complex social-cultural institution, of which architecture is only one of several important parts. Schools are constructed from a variety of elements that are interacting with one another to produce an environment whose fundamental purpose is educate the nation’s children. How this is done, where it is done, and who gets it done is the framework for this study. The qualitative strategy used herein provides a forum for research that looks at intangible aspects of human life such as feelings, thoughts, and behaviors that are directly connected to the process of education.

The goals of this study were to:

1. better understand the U.S. Department of Education’s Six Principles for school Design,
2. consider the significance of the researcher’s theory of the “Learning Environment as Place,” and
3. identify potential interactions between the design principles and the theory through the use of a matrix tool.

3.3 Why the Six Principles?

Existing research efforts in the general topic area of schools are immense, but much of them lack direct relevance to the people who are most active in school design – architects and school planners. For many years there has been an intuitive feeling in the architectural profession that the facility itself has a role in defining school environments. However there has been little
formalized research to substantively connect the design of school facilities to the other aspects of education.

The design principles are the first significant national effort to integrate the process of education with the practice of architecture. They have been endorsed by the American Institute of Architects (AIA) and the Council of Educational Facility Planners International (CEFPI). Since the mid-1800’s AIA has served architects as the professional and ethical foundation of the practice of architecture in the United States. CEFPI has long been recognized as the preeminent educational facilities planning professional organization, with more than 2,100 active members and seven chapters.\(^{37}\) These two organizations are the leaders in school planning and design, and actively participated in the formation of the principles at the National Symposium for School Design in 1998. The principles were unanimously endorsed by the Board of Directors of both the AIA and CEFPI in 1999.\(^{38}\)

Research work by Jeffrey Lackney\(^ {39}\) and Susan J. Wolff\(^ {40}\) also identifies design principles that are applicable to school planning and design. However, the principles in these studies do not appear to have grown from a collaboration of people involved in school planning and design, nor were they authored under the umbrella of a recognized national institution such as the U.S. Department of Education. Although both of these researchers make interesting and valuable contributions to the field, neither appear to have developed their design principles with the collaboration of professional organizations, so their basis of acceptance is simply not as broad.

\(^{37}\) Additional information about the work of CEFPI is available at www.cefpi.com
\(^{39}\) Lackney, Jeffrey (2000) 33 Educational Design Principles for Schools & Community Learning Centers as published at www.edfacilities.org/rtl/design.cfm
\(^{40}\) Wolff, Susan J. (2002) *Design Features of Project Based Learning* as published at www.designshare.com
The U.S. Department of Education’s principles of school design were developed at a time when educators and facilities experts were becoming more fully aware of how the built environment can impact and influence teaching and learning. As discussed in the historical perspective of this study (chapter 2), the late 20th century introduced a greater awareness of human differences in the learning processes. The design principles responded to the growing consideration of complexities that shape the American public school system. The principles were selected for this study because enhanced understanding of them offers the following important opportunities:

1. They can provide support to school facility planning and design efforts that are more responsive to needs because they advocate an understanding of teaching and learning as the basis for design.

2. They encourage a dialog about making school buildings more fully utilized as essential public facilities that contribute to sustainable, viable communities.

3. They can be used as a democratic tool for engaging people with diverse interests and backgrounds in the planning and design of schools.

Economics, sustainability, and the ongoing difficulties of educating the nation’s youth point to the need to use all of the scientific and human resources available to do as good a job as possible at designing and building schools. The six design principles provide an opportunity for understanding how architectural design participates in education.

3.4 Theory of the “Learning Environment as Place.”

The study analyzes the six principles through a theoretical lens entitled “Learning Environment as Place.” This concept emerged from the study of the six design principles and the extensive existing literature on the subject of schools. Patterns and meaning in the principles were sought
out to give deeper understanding to the complex typology of schools. The theoretical idea came forward as an effective frame for the study, as well as becoming a significant aid the organization of relevant existing literature.

The hypothesis encompassed in the theory is that in order for a learning environment to become a *place* rather than a *space*, it must demonstrate relationships and inter-dependencies to its people (children and adults), pedagogy (teaching and learning processes and methods) and the physical environment (both indoor and outdoor). The concept of place-making has been a part of architecture and urban planning studies for more than 30 years and is not, in itself, the focus of study for this work. However, the following brief overview will help readers who are not aware of the concept of place-making to grasp its essence:

*Space* is defined by “a limited extent, in one, two, or three dimensions; a physical environment independent of what it occupies.”\(^{41}\) Architectural spaces are tangible, physical realities created for a variety of human uses. In school planning and design, space is used to define certain standards that are the basis for creative design work. Examples include space guidelines, space configurations, space allocation, and parking spaces.

Webster defines *place* as “A building or locality used for a special purpose.”\(^{42}\) In place-making theory, place incorporates human characteristics into the space, giving it personal and/or collective meaning. Emotion, memory, multi-sensory meaning, values, and culture are all a part of a space becoming a place. They build, what is commonly referred to as a “Sense of Place.”

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\(^{42}\) ibid.
The theory that developed for this work builds upon the idea of place-making, specifically in the realm of schools. It grew out of the extensive literature that exists on the topic of effective schools. As evidenced in the historical background, there has been an ongoing effort to define and redefine America’s educational system to make it meet societal expectations. There is extensive discussion about the important elements of schools, but only disparate pieces that make built environment – human behavior connections. The fact that it is very difficult to determine a causal affect between the physical and human aspects of school led to the idea that it may be relationships and interdependencies that have resultant affects rather than traditional causes. This theory is unique in its simultaneous consideration of multiple aspects of schools (human issues, cognitive learning processes, and the facilities themselves). Rather than pointing to a single aspect of school, such as teaching practices or the condition of the building, it looks comprehensively at the school as a many faceted entity that is constructed from the interactions of several critical components.

The school moves beyond being a group of spaces to fulfill educational objectives when it constructs human meaning for its users by providing a sense of place. The icon in Figure 2 graphically depicts the concept that a learning environment becomes a place when its foundation is the inter-dependencies of people, pedagogy, and the physical environment. It is grounded in the community’s values, ideals, and culture. The theory frames the study such that it is consistent with the philosophical

![Figure 2. Theory Icon.](image)
premise of American schools – that is, education is a social process that is the responsibility of
the social organization (the community) in which it is a part. Environmental scientist and educator, David Orr describes the importance of place in this way: “Place builds a context for social relations; it is the staging area for human community structure enhanced by a deep encounter with the natural world.”

Many architects and educators who work in the field of school planning and design are intuitively aware of the myriad of complexities associated with teaching/learning and the built environment, but they have few tools to help shape the actual projects they work on. The normative practice is to utilize a team approach in the early programming phase of the project that allows the expertise of individuals to contribute to the planning and design effort. This system assumes that individuals understand and value the greater purpose of the school project and its role in the community, and that they can think beyond individual preferences. This assumption is certainly not always the case. Project leaders sometime incorporate mission or visioning goals, but these are rarely extended beyond the early planning and programming phase.

This theory developed from the author’s professional experience in school planning and design, and the desire to develop an instrument that could aid in sorting out the complexities of schools during the design process. There was also a need to establish an instrument that could be used in this research to sort and organize the tremendous volume of existing literature that had relevance to this work. A brainstorming list of many aspects and characteristics of learning environments evolved. It included both intangible ideas and tangible elements, which triggered the author’s existing knowledge of place-making theory and expertise as a practicing architect. The thought process was aided by the author’s experiences of being a parent who has actively participated in schools for the past 20 years. Supporting the school system through a variety of

43 Orr, David as presented by David Kahn (2002), Philosophy, Psychology, and Educational Goals for the
activities including classroom assistance, fund raising, serving on committees, helping children with projects and homework, and working as a substitute teacher has added depth and breadth to comprehending the tangible and intangible elements that make up schools.

A series of connections and commonalities were seen among the many diverse elements, and over a period of time they were logically narrowed into the essential categories of people, pedagogy, and the physical environment. The role of the community was viewed as a foundation for the essential characteristics (rather than a characteristic itself) since America’s schools are predominantly formed from decisions made at the local level.

3.5 Methodology.

The purpose of this study is to analyze the six design principles and enhance their understanding among school planners, designers and educators. This will be done through a qualitative research strategy that utilizes case study as the primary tactic. The research will be grounded in the newly developed “Learning Environment as Place” theory that will serve as a lens through which the presence of the six design principles can be viewed in the case studies. This research approach will use thick description and in-depth analysis to consider the significance of a contemporary social/cultural issue, that is, education. The qualitative strategy provides a forum for looking at intangible aspects of human life such as feelings and behaviors without relying on causal affects (as discussed above).

Four existing public schools in Juneau, Alaska will be used: Harborview Elementary, Juneau Montessori Elementary, Dzantik’i Heeni Middle School, and Dryden Middle School. These four schools were selected for the study because they offer a variety of pedagogical approaches in a public school setting for students ages 5-14. They also displayed differing
physical environments that allowed the opportunity to assess a wide range of educational issues around the six design principles. Direct experience with each of these schools as a parent and professional architect will provide a basis of understanding functional and programmatic details of the selected case studies, as well.

Interviews will be conducted with experts who are thoroughly knowledgeable in all aspects of each school’s programs and operations. At three of the schools, the primary interviews will be conducted with long-term teachers; at one of the middle schools the principal will be consulted. Additional discussions will occur with other people associated with the schools as needed to obtain specific detailed information. These people may include other teachers, former school principals, parents, and district administrators.

The case studies will also include retrieving archival records (building plans), and updating these in simplified graphic form to reflect current existing physical conditions of each school (see appendix chapter 6). Aerial photographs that reveal the school siting will be retrieved from official City & Borough records. Written observations will be conducted and photographs taken at each of the schools during different activity periods to note current physical conditions and patterns of use.

The study of each school is summarized in Findings (chapter 4), and the complete case studies can be found in the appendix (chapter 6). A matrix was developed for each school to organize the data gathered and to provide a forum for considering the relationships and interdependencies between the six design principles and the theoretical premise. In the Conclusions (chapter 5), the elements discovered in all of the case studies, along with contributions from the literature, developed a final summary matrix that allows a discussion of some overall considerations of the six principles and the theory.
4.0 FINDINGS.

The study has generated multiple levels of noteworthy findings. The case studies demonstrated strengths (relevance) and weaknesses (lack of relevance) at each of the schools in each of the three study areas: the Six Design Principles, the Learning Environment as Place Theory, and the Matrix as a Research Tool. This chapter summarizes the case studies first through the use of a matrix that organizes the extensive information derived, and secondly, through discussion of the most significant findings. The complete case studies can be found in the Appendix. These findings provide the basis for conclusions about the comprehensive study that are presented in Chapter 5.0.

4.1 Context.

Given the local emphasis of America’s public education system, it is important to understand the contextual framework of the case studies used in this research. Juneau is the capital city of the state of Alaska, located at the northern tip of the Alaska panhandle at latitude 58° with a population of approximately 31,000 people.44 It is a landlocked northern rainforest community surrounded by the Tongass National Forest. The city is constructed on a narrow strip of land between Gastineau Channel and the Juneau Ice Field, a vast glacier that bridges the United States and Canada. The City & Borough’s land area totals approximately 3,200 square miles; 1,600 sq.mi. of which is land, 900 sq.mi. is covered year round by ice, and 700 sq. mi. is ocean water.45 Transportation access in and out of Juneau is limited to air travel or boat. The primary employer is government (federal, state, and local); important industries include tourism and natural

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45 http://www.juneau.org/community/maps/bormap.gif
resource development (mining, fishing). The median household income is $62,000 per year, the average household size in Juneau is 2.6 persons, and the average family size is 3.1 persons.\textsuperscript{46}

There are approximately 5,500 children currently enrolled in the Juneau School District. It is estimated that up to 800 additional children attend private schools or are educated via alternative means such as home schooling or cyber-school (distance education). The University of Alaska Southeast is located in Juneau with a current full time student enrollment of approximately 700, and 2,000 additional students enrolled part time. There are also many early learning based pre-school programs in Juneau including Head Start and Montessori.

There are currently eight public elementary programs, two middle schools, and one high school in the Juneau School District. A second high school is under design and expected to be completed for occupancy by August, 2006. The Juneau School District also has two alternative high school programs located off-campus in leased facilities, and a newly formed cyber-school. One of the elementary schools operates as a Charter School and is not located in a publicly owned facility, and a second elementary program operates as a “School within a School” program in the basement of one of the elementary school facilities. The Marie Drake School facility, originally constructed as a junior high, is now used as a “flex” facility – it is currently used for high school programs since the high school building is undergoing extensive renovation. Although no official action has occurred, it is anticipated that Marie Drake will be used for alternative programs in the future once the current high school renovation is complete and the new high school is constructed. This will allow all school programs to be held in public school facilities, eliminating the need for leased space.

Cooperative agreements that support public education exist between many private and public entities in Juneau. These allow shared use of facilities, staff, and programs in a variety of

\textsuperscript{46} School Dist Demographics, National Center for Education Statistics http://nces.ed.gov/surveys/sdds
ways that benefits the entire community. School buildings in Alaska are owned by the local governmental authority (except in rural villages); for Juneau, this is the unified City and Borough. The School District itself is part of the City & Borough of Juneau so a shared ownership and responsibility is prevalent for all educational matters. Juneau’s challenging topography limits the amount of developable land, thereby emphasizing the need to efficiently use public buildings and outdoor built environments such as parks and sports fields.

The funding for operations of Juneau’s schools comes from a combination of state and local sources, and special federal grants, as available. The State of Alaska provides per-pupil, formula derived basic funding that requires participation from the local community. State laws also cap the maximum contribution a community can make toward direct educational costs. The City and Borough Assembly has consistently funded the maximum amount possible, and has provided additional funding outside the cap for educational support programs such as pupil transportation and student activities.

Juneau’s schools also receive substantial amounts of financial assistance outside of the traditional public funding. The high school activities program alone raises more than $950,000 per year. Local non-profit organizations also provide funds and logistical support to high school sports programs that are outside of the school budget. These include football, soccer, swimming, skiing, gymnastics, and others. The high cost of student sports and activities (especially the cost of travel) dictates the need for significant fund raising and community support for the schools. The City & Borough of Juneau uses one-half of 1% of sales tax receipts to provide funding for Youth Activities through special grants. Nearly $450,000 is contributed by the City & Borough to youth activities per year. $200,000 of that amount is given directly to the school district to support high school activities. In addition, the CBJ pays for the maintenance of all sports fields and facilities that are used for youth sports. The CBJ also provides approximately four hours of
use per day at the community swimming pool for high school PE classes and swim/dive team activities. An active “Community Schools” program has provided extensive support to the education mission in Juneau for more than twenty years.

Community Education is both a program and a process which recognizes that learning begins at birth and continues throughout life. It offers a variety of academic, recreational, social, cultural, and health promotion activities and programs. Community Education stresses cooperation and coordination between schools, agencies, business, and community individuals. Juneau Community Schools is a cooperative effort between the City and Borough of Juneau, City and Borough of Juneau Parks and Recreation Department, University of Alaska Southeast, State of Alaska, and the Juneau School District. Juneau Community Schools provides K-12 enrichment activities, activities for youth before and after school hours, activities for adults, interagency network and resource sharing, and facility use.\(^{47}\)

\(^{47}\) Juneau School District web site at http://www.jsd.k12.ak.us
4.2 FINDINGS AT HARBORVIEW ELEMENTARY SCHOOL.

Figure 3. Photographs of Harborview Elementary School
4.2.1 Overview.

Harborview School is located in downtown Juneau and provides K-5 public elementary education for a current enrollment of 370 children. This enrollment figure includes a specialized program of Tlingit native language immersion for grades K-3 that began in 2000. Since 1994, Harborview has been affiliated with a district-wide elementary Montessori program for children in grades 1-6 which currently has 44 additional students housed at the school (see section 4.4 for case study summary of the Montessori elementary program).
<table>
<thead>
<tr>
<th>Principle</th>
<th>People</th>
<th>Pedagogy</th>
<th>Physical Environment</th>
</tr>
</thead>
<tbody>
<tr>
<td>#1. Enhance teaching &amp; learning, and accommodate needs of all learners</td>
<td>20:1 ptr lower grades; 27:1 ptr upper grades detailed enrollment process diversity balanced except Tlingit Immersion specialized literacy training balanced teaching experience (old, new) low turnover in teaching positions</td>
<td>self-contained academic model throughout mixed age groups, looping high variation from standardized curriculum pull-out model for Extended Learning inclusion model for special needs grants, teacher awards Tlingit Language Immersion program music, art, PE, library affiliation with Montessori</td>
<td>standard classroom design, dbl load corridor standard classroom size = 1,000 s.f. no moveable walls/connecting doors teaching walls used throughout mixed use of tables, desks poor window style but good quantity good acoustic separation few classrooms use sharing space no cooking facilities available in classrooms</td>
</tr>
<tr>
<td>#2. Serve as center of community</td>
<td>community defined as whole school: &quot;We honor and cherish the families of Harborview&quot; businesses provide $ for special projects 20 regular PTO members 3-5 active parent volunteers per classroom limited community funds for programs, events 1 lg. fund raising event per yr., 2-3 sm. events</td>
<td>3-4 school community events per year monthly Fri. Fun nights: &quot;bridging home/school&quot;</td>
<td>downtown location near business core 500 hrs. per yr. community use of gym summer recreation program at facility &quot;neighborhood back yard&quot; no community space in bldg. (except gym) insufficient visitor parking</td>
</tr>
<tr>
<td>#3. Results from a planning and design process that involves all stakeholders</td>
<td>staff mtgs. 3 per month empowered, highly participatory site council Tuesday Literacy Lunches high participation on district committees</td>
<td>active site based management culture collaborative staff decisions re resources high attendance at parent-teacher conferences &quot;teachers knnow best what the kids need&quot;</td>
<td>library used for large groups classrooms used for teacher planning staff lounge/learning supports collaboration</td>
</tr>
<tr>
<td>#4. Provide for health, safety, security</td>
<td>playground assist: Coast Guard, youth corp. full time school nurse full time school counselor many staff have (limited) trained in first aid/cpr staff awareness of drug issues scheduled fire drills, escape plans police officer has periodic presence</td>
<td>counseling program peer mediation program DA Re program SCOTS program</td>
<td>good quality custodial care adequate nursing space low quality playground/outdoor spaces main entry lacks presence multiple entries without supervision poor exterior building maintenance</td>
</tr>
<tr>
<td>#5. Make effective use of all resources</td>
<td>many staff participatds in training, conferences $30,000 PTO funds per year 1-2 classroom fund raisers per year # of parent volunteers per year</td>
<td>community reading mentors art program leveraging training to maximize impacts adoptive grandparent program Alaska native cultural awareness projects</td>
<td>downtown location supports volunteerism location supports student outings creative use of wide hallway limited phone, fax usage by children</td>
</tr>
<tr>
<td>#6. Allow for flexibility and adaptability to changing needs</td>
<td>alt. staffing (job sharing, etc.) embraced teachers have input with hiring</td>
<td>High degree of adaptation to dist. Curriculum extensive sharing of ideas between teachers</td>
<td>rigid infrastructure restricts adaptability no moveable walls or connecting doors building siting restricts expansion poor ADA accommodation</td>
</tr>
</tbody>
</table>

Figure 5. Harborview School Matrix: Case Study Findings
4.4.1 Findings Regarding the Six Design Principles.

Design Principle #1, “The learning environment should enhance teaching and learning and accommodate the needs of all learners” is the focal mission at Harborview. They demonstrate a strong understanding of contemporary educational thought that children learn in many different ways, which calls for a variety of teaching strategies. Teachers are not afraid to (in fact, they expect to need to) adapt the standard district curriculum to what they see will benefit their students. Harborview uses more alternative arrangements (mixed age groupings, looping, etc.) for organizing the school than all of Juneau’s other elementary schools combined. They have created and modeled many programs and curricula implementation ideas that other schools have replicated. They are clearly leading the way for trying new things to respond to the care and compassion they feel toward meeting the needs of all children.

It is interesting that Harborview has not yet broken from the contained classroom model which implies that, at least in attitude, the primary responsibility for learning remains solely with the classroom teacher. The physical environment may be a contributing factor since it is very rigid and antiquated. Additionally, there are expectations from families and among teachers that elementary school is a time of nurturing between a single teacher and an established group of children (the “mother hen” image). These factors all contribute to the lack of overall applicability of Design Principle #6, “The learning environment should allow for flexibility and adaptability.”

The study of Harborview finds the incorporation of Design Principle #4, “The learning environment should provide for health, safety, and security,” and Design Principle #5, “The learning environment should make effective use of all available resources” fundamental to who they are and how they operate the school. These two principles are basic parts of what it takes for the school to be a learning environment that accommodates the needs of all learners. Personal physical and emotional safety and health are emphasized through all aspects of the school.
Harborview’s investment in a full time counselor is evidence of their commitment (only .5 FTE is required; the school uses discretionary funds to provide a full time counselor). Staff also works hard to keep the physical environment as clean as reasonably possible, given the limited custodial support and aged condition of the building. An active program of placing parent and community volunteers on the playground during recess is further evidence of a safe and secure environment.

Harborview staff are extremely diligent in seeking out the resources they need to make things happen. One good example of this is the way that teachers used grant funding to train teachers “in house” in the Reading Recovery method. This allowed several classroom teachers to have the knowledge of the specialized literacy approach rather than spending the funds on one person to obtain the training out of state. This approach also demonstrates the staff’s attitude about empowerment, which is an important part of Design Principle #3, “The learning environment should result from a planning/design process involving all stakeholders.” Harborview staff finds creative ways to solve problems. They engage as many people as they can to participate and to provide the resources it takes to accommodate the needs of all of their learners.

Design Principle #2, “The learning environment should serve as center of the community,” is the outcome that results from the way that Harborview operates. There is a very strong sense of community among the staff and the neighborhood, even as children grow up and move on to other schools. It is common for older children to return to Harborview for community service work or just to visit. Their community is strongly defined around the school, and they acknowledge themselves as one of the many “community groups” that make up Juneau.
4.2.2 Findings Regarding the Learning Environment as Place Theory.

Harborview School’s strength is in its people. The case study demonstrated that both children and adults have a bond to Harborview Elementary. This may be enhanced by its downtown location. Juneau has two distinct neighborhood types – downtown and valley. The downtown neighborhoods are more characteristic of small town America with older homes on small lots, arranged along tree-lined streets with paved sidewalks and picket fences.

There is a strong commitment toward the education of all children at Harborview. Teachers are active and vocal promoters of the whole community of learners. Out of this comes a willingness to try a variety of pedagogical approaches to respond to children’s needs. Teachers are very respectful of alternative programs such as the Tlingit native immersion program and the district-wide Montessori program. Individual teachers share information and ideas extensively so there is a continual growth process underway to find teaching methods that respond to a variety of learning styles.

Several programs originated with teachers at Harborview that are now used throughout the district. This is another indication of the strength of human resources at this school. Teachers have taken a lead role, and been supported by parents, in finding creative ways to address the many needs they see each day. They are a “take action” type of group – they do not sit back and wait for others to solve problems.

The serious limitations of the school’s physical environment further demonstrate the commitment of Harborview’s human resources – its children, teachers, and families. The building is aged and inefficient. It lacks valuable historic character and is poorly set on the limited land area. Still people love Harborview – not for the sake of the architecture, but for the
quality of the people and the generations of positive human interactions recalled. They have created an effective school despite the architecture.

4.2.2 Findings Regarding the Matrix as a Research Tool.

The matrix offered two important findings in this study for Harborview Elementary. First, it helped identify and categorize the specific issues at Harborview relative to both the theory and the design principles. This was useful because it can provide information about the school’s strengths and weaknesses that can be used to make improvement. The essence of Harborview is really defined in the first two design principles as they interface with the theory. The school’s driving desire to accommodate the needs of all learners calls for them to study their shortcomings, which the theory axis of the matrix allows them to easily see.

The second major outcome of the matrix is that it offers a very powerful tool for the future planning and design of Harborview. The renovation of this facility is a priority for the current School Board although no funding is available at this time. The matrix is an organizational element that could frame a highly participatory process to determine the scope, extent, or even the viability of renovation of the facility. Design Principle #1 could be expanded to incorporate the essential elements of the other principles, and other important characteristics that define the unique character of Harborview could be added if seen appropriate. The matrix could continue to be used as a verification tool as the programming and conceptual design proceeds.
4.3 FINDINGS AT JUNEAU MONTESSORI ELEMENTARY.

Figure 6. Photographs of Juneau Montessori Elementary School.
4.3.1 Overview.

Montessori education is a philosophical approach to learning that was developed by Italian Dr. Maria Montessori (1870-1952). She applied her personal convictions as well as her technical training as a scientist and physician (she was Italy’s first female doctor) to the field of childhood development and education, designing what has become known worldwide as the Montessori Method. It is deep and broad philosophy that applies both theory and practical application to the education of children from birth to adulthood. It is based on a belief that the learning capacity of a child is uniquely different than that of an adult, and that childhood offers specific windows of opportunity that are aptly suited for optimal learning.48

In Juneau, Montessori elementary education began in 1992 in a small private setting as an extension to the Montessori pre-school that had been operating since 1983. It transferred to the public school system in 1994 with 17 children in grades 1-4. It has slowly and cautiously grown to the current enrollment of 44 students in grades 1-6. The lower elementary class includes 24 children in grades 1-3 (ages 6-9) and the upper elementary class has an enrollment of 20 in grades 4-6 (ages 9-12). The program is structured as a “school within a school,” meaning that it is a program offered by the school district for children throughout the district, but it is housed within (and somewhat affiliated with) a specific school. Montessori Elementary is currently housed in two make-shift classrooms in the basement of Harborview Elementary School. Prior to the current school year it was located in the Marie Drake building, but was displaced to adjacent Harborview to accommodate an extensive renovation of the (also) adjacent high school that is expected to be complete at the end of 2004.

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<thead>
<tr>
<th>Principle</th>
<th>People</th>
<th>Pedagogy</th>
<th>Physical Environment</th>
</tr>
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<tbody>
<tr>
<td>#1. Enhance teaching &amp; learning, and accommodate needs of all learners</td>
<td>24:1 lower elem ptr; 20:1 upper elem ptr detailed enrollment process ethnic diversity reflected in classrooms highly specialized teacher training average+ teaching experience teachers have full longevity with program</td>
<td>shared pedagogy: &quot;cosmic education&quot; single pedagogy w/ variety in teaching styles complete curriculum variances from standardized curriculum does not use traditional grading</td>
<td>&quot;prepared environment&quot; &quot;environment as third teacher&quot; high variety of activities, work choices double doors connect classrooms tables and floor used for child workspace poor natural light, no fresh air acoustically isolated from rest of school limited space for sharing/evaluating projects oven, stove, refrigerator available</td>
</tr>
<tr>
<td>#2. Serve as center of community</td>
<td>type of school-community partnerships class fundraising = $1,500 per yr. community attends project evaluations ongoing student mentoring, internships high level parental involvement/volunteers SEAFOM has raised $200,000 in 10 yrs.</td>
<td>&quot;education is preparation for life&quot; community service by all children macro community = the world curriculum integrates community involvement home work studies connect home to school 6th grade ancestry project</td>
<td>parent mtgs, events once/month in classrm. extensive student use of phone, fax, internet easy community access to building outdoor tree grove for Wisdom Day</td>
</tr>
<tr>
<td>#3. Results from a planning and design process that involves all stakeholders</td>
<td>staff meets w/ one another weekly week links to school and dist. Admin. no representation on a Site Council SEAFOM interfaces with dist. Planning weekly student mtgs. led by students</td>
<td>child-based management culture teachers are fully empowerment students empowered in project planning high level of shared responsibility for education</td>
<td>classroom used for most planning meetings no collaboration spaces provided</td>
</tr>
<tr>
<td>#4. Provide for health, safety, security</td>
<td>teacher-family partnerships developed Use Harborview nurse, counselor limited staff trained in first aid/cpr parents participate in field trips fire drills, escape plans</td>
<td>Rule of Respect ongoing peer mediation care taking of environment part of curriculum diverse, multi-age student groups progressive conflict resolution plan is used PE curriculum incorporates safety</td>
<td>classroom as a beautiful place children are stewards of their school daily chores indoor shoes</td>
</tr>
<tr>
<td>#5. Make effective use of all resources</td>
<td>continual student and teacher feed back district policies restrict outings SEAFOM provides staff development funding student led work</td>
<td>teacher serves as &quot;guide&quot; social opportunities for students encouraged culture expressed in social &amp; curriculum diverse multi-age student groups teachers continually seek outside resources Montessori materials are universal</td>
<td>student use of telephone, fax, copy machines limited space for developing student projects limited space for sharing/evaluating projects school location supports outings furniture supports multiple uses</td>
</tr>
<tr>
<td>#6. Allow for flexibility and adaptability to changing needs</td>
<td>&quot;refresher&quot; course protects from &quot;the drift&quot; specialized training builds in adaptability teachers, students, parents involved in hiring</td>
<td>life long learning promoted, not content Montessori pedagogy is timeless</td>
<td>openable doors between classrooms site doesn't allow for expansion, modifications building not designed for expansion &quot;somehow, we'll figure it out&quot;</td>
</tr>
</tbody>
</table>

Figure 7. Juneau Montessori Elementary Matrix: Case Study Findings
4.3.2 Findings Regarding the Six Design Principles.

As with Harborview Elementary, Design Principle #1, “The learning environment should enhance teaching and learning and accommodate the needs of all learners” is most relevant to the Juneau Montessori Elementary program. The case study demonstrated that this principle is reflective of the Montessori approach. It encompasses the Montessori idea that learning grows from three essential elements: the trained adult, the physical environment, and the child. How, when, and why learning occurs are all part of the philosophy.

Montessori’s distinct pedagogical direction made the application of the six principles more complex than in the other case studies. During interviews with teachers it was very difficult to categorize responses into single principles – things overlapped significantly; everything seemed connected to something else.

4.3.3 Findings Regarding the Learning Environment as Place.

The Montessori program’s foremost strength is its pedagogy, however the case study demonstrates that it is extremely difficult to separate pedagogy from people or the physical environment. The interdependencies illustrate a synergistic relationship whereby the strength of each of the three individual parts results in an even greater resultant of the whole. The philosophical belief system, as well as the methods for practical implementation, provides the ongoing fuel for everything that occurs in this learning environment. The pedagogy transcends individual people, allowing stability and continuity over the long run. The Montessori approach, for example, allows children to grow through their elementary grade levels with continuity and less stress regarding change. In traditional single graded programs the children change teachers
every year. This usually brings annual adjustments in expectations, acceptable behaviors, and teaching styles for the child.

The Montessori multi-age model allows children to be mentored, and later become the mentors for other children. The entire concept of mentoring is deeply built into the pedagogy in multiple ways, too. Multi-age is more than a label applied over the classroom enrollment configuration. A parent in the elementary program observed,

I like the Montessori multi-age because kids can really see where they will be going in the future. It builds them fully and they look forward to becoming the leaders. Also, since they are in the same classroom for three years they are given a chance to really know their teacher. They know what’s expected and how things will work (in the classroom). This makes them more comfortable with school in general.\(^{49}\)

The multi-age approach that has a practical aspect that reduces parent anxiety, as well. Parents don’t have to make requests for specific teachers and worry what might happen if they child gets mis-matched with the personality or style of the teacher. With Montessori, parents know that they will have a consistent approach no matter who the teacher is, and the fact that their child gets the same teacher for 3 years is an added bonus. Individual teachers can come and go from the program and it will remain essentially unchanged. The lack of trained Montessori teachers worldwide makes it difficult to fill teaching vacancies, but once found, the new teacher brings essentially the same training and philosophical approach to the school.

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\(^{49}\) Author interview with Tonia Kramp, Montessori parent, April 25, 2003 Juneau, Alaska.
I know that many alternative programs have a hard time in the public school system because there is not a strong philosophy that provides the foundation for the program. It may be initially strong because of the teachers and parents that create it, but once they move on or there is a change in administration that no longer supports them for whatever reason, the program struggles and unfortunately, often dies.\(^{50}\)

The pedagogy also transcends the physical environment. Because the environment is intimately connected to the philosophy, Montessori can successfully function in a variety of building shells. Certainly the current basement location of Juneau Montessori Elementary has shown this, as have numerous Montessori schools that are located in very modest structures in third world countries.

Much of Dr. Montessori’s work focused on the physical layout of the learning environment (both indoor and outdoor) to induce desired behaviors from children. Even though she had no formal training in design, Dr. Montessori had genius understanding of the potential for the built environment to influence human beings. The theory of place-making that has been used for this study illustrates significant opportunity for the Montessori approach. The teachers in Juneau’s Montessori elementary program are learning firsthand how the architecture influences and impacts the learning environment. The basement is isolating and the lack of natural light is concerning. Although no direct correlation has been found, standardized test scores in the upper elementary class were the lowest ever achieved in the Montessori program this year. The experiences of the makeshift classrooms in the basement will help teachers carefully consider the Montessori program’s future space needs once the high school renovation is complete and their current temporary location is terminated. Meanwhile, on a national level,

\(^{50}\) Author interview with Christine Trostel, Montessori teacher, February 4, 2003 Juneau, Alaska.
the relationship between Montessori and the built environment is being further considered in work with the North American Montessori Teachers’ Association (NAMTA) and the Taliesin Architects to develop design guidelines for Montessori schools.

4.3.4 Findings Regarding the Matrix as a Research Tool.

Of the four case studies, the matrix was least effective as an evaluative tool for the Montessori Elementary program. It was quite difficult to categorize many of the elements that were identified because they inherently overlap between the theoretical criteria. As with Harborview School, the elements found in the six design principles could be effectively consolidated into the first two. Even those two have “soft” boundaries that make it difficult to categorize any particular element of the school. For example, the principle of the learning environment being center of community is fundamental to Montessori thinking. As discussed, the definition of community itself is broad and certainly is constructed from the participation of all stakeholders (principle #3). The curriculum is specifically designed to accommodate the needs of all learners (#1) and by definition of cosmic education is reliant upon the extensive utilization of diverse resources (#5). So in studying the Montessori model, the traditional lines of a matrix don’t really work.

The significant finding is that very thorough interdependencies exist when one attempts to categorize – it is the connections between the boxes that seem to matter. A matrix for the Montessori school might have dashed to define areas, or even be of a totally different design like a web.

The matrix does, however, function effectively as a communication tool because it demonstrates the school’s shortcomings, in this case, the physical environment that is an
essential element of the program. It will be very useful to have a tool such as the matrix as planning decisions are made for the relocation of the Montessori program to another facility.
4.4 FINDINGS AT DZANTIK’I HEENI MIDDLE SCHOOL.

Figure 8. Photographs of Dzantik’i Heeni Middle School
4.4.1 Overview.

Dzantik’i Heeni Middle School, constructed in 1994, is one of two middle schools in the Juneau School District for students in grades 6 through 8. It is located approximately 6.5 miles north of the older downtown area. It is a replacement school, meaning that it is a new facility that allowed the relocation of the staff and student body from a previous building (Marie Drake Middle School) that was constructed in 1967. Dzantik’i Heeni’s adjacent neighborhood consists of a large mobile home park that is over 30 years old to the south and subsidized low income rental
housing to the east. Approximately ½ mile further toward the east is a middle income single family neighborhood.

The school is constructed on a filled hillside wetland and is surrounded by several hundred acres of city-owned forest. An anadromous stream sets the boundary at the south, eagle nesting trees edge the west side, and old growth spruce forest is found at the northeast perimeter of the site. Because the school site is environmentally sensitive and was very costly to develop, the original development for the building, parking, and one small play field was limited to less than 10 acres. In 1997 a Master Plan was developed that identified school needs for an area of approximately 100 acres around the school. The focus of this plan is to provide educational and recreational opportunities for the school and the community that are consistent with the pedagogical directions at Dzantik’i Heeni. The master plan was developed to support natural history, cultural heritage, and environmental studies using the middle school instructional model.

There are 24 regular academic teachers at Dzantik’i Heeni for a total school enrollment of 708. There are 9 exploratory (“elective”) teachers and 6 specialty teachers (library, counseling, literacy, learning difficulties, and ‘gifted’ math). The school’s academic program is based on the district’s standard core curriculum in math, science, social studies, and language arts, with exploratory courses in music, art, drama, technology, world languages, life skills, and PE.

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51 Jensen Yorba Lott Architects, DZ Master Plan (1999)
<table>
<thead>
<tr>
<th>Principle</th>
<th>People</th>
<th>Pedagogy</th>
<th>Physical Environment</th>
</tr>
</thead>
<tbody>
<tr>
<td>#1. Enhance teaching &amp; learning, and accommodate needs of all learners</td>
<td>29:1 functional ptr detailed enrollment process ethnic diversity throughout classrooms teacher training emphasizes adolescence balanced teaching experience (old, new) low turnover in staff</td>
<td>shared belief system is evident 4 houses provide variety in teaching styles high selection of exploratory courses high variation from standardized curriculum many grants, awards for teaching team teaching used throughout</td>
<td>&quot;physical env. has a lot to do w/ making the house model work&quot; flexible classroom arrangements for activities moveable walls/doors throughout variety in furniture types excellent windows allow natural light, fresh air good acoustical control/space separation spaces flex for sharing/evaluating projects school siting provides beautiful views</td>
</tr>
<tr>
<td>#2. Serve as center of community</td>
<td>high community involvement for projects limited general comm. $ to support programs community attends student evaluations many diverse types of student internships used high level of parental involvement/volunteers active PTO membership, types of events</td>
<td>curriculum invites community involvement all students do community service PTO pedagogical focus on literacy ROPES for 8th graders</td>
<td>high use of building outside of school hours diverse use of school after-hours site Master Plan developed site does not currently support neighborhood high student use of telephone, fax, internet easy community access to building</td>
</tr>
<tr>
<td>#3. Results from a planning and design process that involves all stakeholders</td>
<td>efficient staff meetings w/ clear purpose E mail used for admin-staff communications high level of Site Council participation strong PTO interface w/ school needs active student government</td>
<td>collaborative site based management culture high degree of staff empowerment student empowerment inservice = cross-pollination of houses, teams management = &quot;best decisions are made closest to the kids&quot;</td>
<td>conference room, good library for mtgs. comfortable staff lounge invites collaboration</td>
</tr>
<tr>
<td>#4. Provide for health, safety, security</td>
<td>&quot;deter violence before it occurs&quot; staff provides hall monitoring nurse, counselor in school most staff trained in basic first aid/cpr staff awareness of drug issues monthly fire drills, escape plans police officer presence</td>
<td>6th grade health, personal safety curriculum peer mediation program care taking of environment part of curriculum house model promotes &quot;knowing kids&quot; clear conflict resolution policies</td>
<td>bldg exterior not maintained forested site has led to vandalism incidents bldg. interior has good custodial care bldg. controlled by door locations good visual control by staff health center/nurse office</td>
</tr>
<tr>
<td>#5. Make effective use of all resources</td>
<td>multiple levels of teacher feedback/evaluation Career Day event staff utilizes prof. development opportunities students in variety of teaching, mentoring roles good level of parent participation PTO funds</td>
<td>curriculum supports teacher as coach, mentor many varied social opportunities for students Tlingit culture expressed in social &amp; curriculum project learning supports sch-home interests teachers seek many outside resources</td>
<td>high use student use of telephone, fax flexible spaces support student projects</td>
</tr>
<tr>
<td>#6. Allow for flexibility and adaptability to changing needs</td>
<td>new courses are encouraged students changing houses highly discouraged &quot;incultration&quot; in teacher hiring</td>
<td>life long learning promoted (v. content) extensive adaptation of district curriculum many shared ideas among teachers</td>
<td>moveable walls are great asset bldg. accommodates diff. house arrangements building not designed for expansion wetlands limit site expansion, modifications Master Plan offers many opportunities</td>
</tr>
</tbody>
</table>

Figure 10. Dzantik’i Heeni School Matrix: Case Study Findings
4.4.2 Findings Regarding the Six Design Principles.

Dzantik’i Heeni Middle School has embraced the concept of accommodating the needs of all learners (principle #1). There is a solid belief system in the school that is the basis for all they do. It recognizes the individual needs of children, beginning with a detailed enrollment process that matches learning and teaching styles. Dzantik’i Heeni’s four house organizational system is further evidence of the school’s diversity. The staff consistently responds to children’s learning differences by offering choice and variety in the curriculum, through both the exploratory offerings and the core academic courses. The specialized courses and training by teachers in the field of adolescent development shows that the school’s staff is truly interested in the growth and development of this age group.

The Principal noted how important the building is to allowing the diverse teaching that occurs at Dzantik’i Heeni. “The physical environment has a lot to do with making the house model work” as it can be adaptable to a variety of teaching and learning needs (#6). Furthermore, the variety in furniture, moveable casework, and pleasant aesthetics make it a desirable place to be. The spaces are inviting to non-students, which also invites mentoring from community members and parental involvement.

Dzantik’i Heeni teachers do not rely on the district curriculum for core academics. They seek out diverse resources (#5) that guide the infinite learning opportunities that come with working with young adolescents. They are empowered by the principal to be leaders who inspire others to share in the role of each child’s education. He is not a “top down” manager; instead, he encourages new ideas and courses, noting that “the best decisions are made closest to the kids.”

52 Author interview with Les Morse, Dzantik’i Heeni principal, February 14, 2003 Juneau, Alaska.
53 Ibid.
Staff, parents, and students at Dzantik’i Heeni collaborate extensively in the planning and care of the education that occurs at this school (#3).

The enthusiasm at Dzantik’i Heeni reaches outside of the school and is very effective in creating a learning environment that serves as a center of the community (#2). There is extensive involvement in the school’s curriculum by the full range of businesses, services, and industries throughout Juneau. The annual ROPEs project for 8th graders, the Career Fair, and ongoing projects are all examples of how the community interfaces with students at the school. Conversely, the students provide many service projects to the community and work successfully toward giving as much as they receive.

Physical, mental, and emotional health and safety are valued at Dzantik’i Heeni. The modern building, the caring and attentive staff, and the pedagogical focus on knowing kids all contribute to the school’s ability to feel safe. The house model is one of the school’s biggest assets in that it allows children to stay with the same group of students and teachers all three years. Teachers can be more attentive to social and emotional needs when a personal connection has been made with the student and family.

The school’s beautiful natural site is both an asset and a liability for future flexibility and adaptability to changing needs (#6). The surrounding hillside forest is extensively wetlands which makes development very difficult. However, this has encouraged creative thinking that is allowing alternative facilities such as a high quality trail system through the forest rather than a large open play field. The trail system offers more connections to the pedagogical needs of the school than a traditional sports field. It also offers many possibilities for community use that are expected to deepen the sentiment of the school being part of the greater community of Juneau.
4.4.3 Findings Regarding the Learning Environment as Place.

Dzantik’i Heeni Middle School was designed with the middle school pedagogical focus in mind. It suffers somewhat, though, from being the first public school in Juneau to be programmed with a strong philosophical approach, as well as being the first middle school. This means that there were numerous “lessons learned” simply because it was the pioneer effort. For example, the variety in room sizes, shapes, and orientation is seen more as a problem (because some are smaller than others) than offering multiple venues depending on the specific teaching or learning needs. The case study demonstrated that the strength of this physical environment is that it is very flexible in allowing children and teacher’s needs to be met. This was especially evident in two of the four houses where the physical environment is manipulated to serve multi-purpose functions.

Along with the building and site itself, the case study demonstrated that majority of teachers and families are very supportive of the ideals of the middle school model. They support project-based learning, they are willing to learn new grading and assessment systems, and they endorse multi-age grouping. This acceptance of diversity in the learning environment comes, in part, because Harborview Elementary is a feeder school to approximately 30% of the Dzantik’i Heeni student body. The fact that a significant number of families are already familiar with varied approaches makes Dzantik’i Heeni comfortable.

This learning environment demonstrates many interactions and interdependencies that support its function as a place. People, pedagogy, and the physical environment are working with one another to move beyond being a group of spaces that are meeting the minimum curricular expectations made by a Board of Education. The school responds to a pedagogical approach that is understood and supported by most teachers and parents, and is placed in a physical
environment that supports the majority of its critical needs. The school does a good job of reflecting and growing from the values, culture, and assets of the community that it serves.

4.4.4 Findings Regarding the Matrix as a Research Tool.

The matrix helped understand the complexity of Dzantik’i Heeni as a learning environment. The middle school model is not a commonly known philosophy in Juneau, even among families with children who are early adolescents. The matrix offers significant opportunity as a communication tool to express the nature of middle school. The six design principles could be replaced with the attributes of good middle schools (discussed in the historical background), to allow a more specific study of the school as a middle school place.

The matrix also allows teachers to see how their expertise in pedagogy relies on the interactions of their techniques in the physical environment. Dzantik’i Heeni staff demonstrates an interest in education that goes beyond their responsibilities to the children in their house. The matrix could become a valuable tool in teacher training to provide insight on how each part of a school is connected to other parts, thus helping teachers grasp a deeper understanding of their own role as educators.
4.5 FINDINGS AT FLOYD DRYDEN MIDDLE SCHOOL.

Figure 11. Photographs of Floyd Dryden Middle School.
4.5.1 Overview.

Floyd Dryden Middle School is located in the Mendenhall Valley and serves a current enrollment of 662 children in grades 6 through 8. The school facility was constructed over three phases, one in 1971, the second in 1974, and the final phase in 1984. Its site is a part of Adair-Kennedy Park which is approximately 30 acres in size. The park has multiple sports fields (baseball, football/soccer, and track), and hosts the only sports stadium in Juneau. The Mendenhall Valley has significantly more developable flat land than the older downtown area of
Juneau, and as a result, saw its primary growth as a suburban housing area throughout the decades of the 1970’s and 1980’s. When constructed, the school was considered remote with undeveloped forests surrounding it. Today, it has residential neighbors on all sides and has approximately 1/3 of its student population within walking distance of the school.

The average pupil-to-teacher ratio (PTR) at Dryden is officially 22.5 children per teacher, but at any given time approximately ¼ of the staff is on “prep time” rather than in the classroom with students. This translates to an effective PTR of approximately 29:1.

The academic program at Dryden is based on the district’s standard core curriculum in math, science, social studies, and language arts, with exploratory class offerings in music, art, technology, world languages, life skills, and physical education.

The school is scheduled to begin an extensive renovation in the summer of 2003. Phase I will cost approximately $5.5 million, which is less than half of the total renovation needed. The second phase has not yet been funded. The project will include replacement and upgrade of nearly all systems in the school, but it will not affect the functional or programmatic operations. The project has focused on aspects of the physical plant only, and the very limited budget for phase I has prevented much creative dialog about substantive upgrades.
<table>
<thead>
<tr>
<th>Principle</th>
<th>People</th>
<th>Pedagogy</th>
<th>Physical Environment</th>
</tr>
</thead>
<tbody>
<tr>
<td>#1. Enhance teaching &amp; learning, and accommodate needs of all learners</td>
<td>29:1 functional ptr teachers set student placement, ethnic diversity in classrooms, teacher training emphasizes content, balanced teacher experience (old, new) low turnover in staff</td>
<td>belief system based on community perception, less variety in teaching styles, methods, fewer exploratory courses; more adv. courses little variation from standardized curriculum, limited collaborative team teaching, higher national test scores than DZ recognized lack of accommodation to the needs of all learners</td>
<td>limited activity zones in classrooms, few moveable walls/doors between classrms, designated teacher area, predominately desks used for students, fixed windows w/ poor quality glazing, good acoustical separation between classrms.</td>
</tr>
<tr>
<td>#2. Serve as center of community</td>
<td>6th grade outdoor education, hunting program limited comm.$ to support programs, projects, few student internships, adequate parental involvement/volunteers, low PTO membership, types of events, $18k fund raised per year by PTO</td>
<td>curriculum doesn't invite comm. involvement, no community service component</td>
<td>high community use of facility after-hours, gym, classrooms have primary use after-hours, site encourages community athletics use, student use of internet, easy community access to building</td>
</tr>
<tr>
<td>#3. Results from a planning and design process that involves all stakeholders</td>
<td>weekly staff mtgs. for basic communications, E:mail used for admin.-staff communications, Site Council advisory to administration, Site Council = 50% + parents, PTO interface w/ school staff, no student government</td>
<td>limited site based management culture, teachers have primary responsibility</td>
<td>library used for planning meetings, minimal staff lounge limits collaboration</td>
</tr>
<tr>
<td>#4. Provide for health, safety, security</td>
<td>staff provides hall monitoring, nurse, counselor in school, staff trained in basic first aid/cpr, awareness of drug issues, monthly fire drills, escape plans, limited police officer presence</td>
<td>6th grade health, personal safety curriculum, peer mediation program, AK Discovery: Duck, Jordan Creek ReHab grade level model limits &quot;knowing kids,&quot; clear conflict resolution consequences, discipline policies coordinated by teachers</td>
<td>building in poor overall condition, vandalism is an ongoing concern, reasonable custodial care, poor visual control of bldg.</td>
</tr>
<tr>
<td>#5. Make effective use of all resources</td>
<td>teacher feedback/evaluation, school policies support outings, staff development opportunities, students in teaching, mentoring roles, parent participation in classrooms, PTO funds</td>
<td>curriculum does not support teacher as coach, social opp. for students separated from school, limited cultural expression in curriculum, limited school-home interest connections, teachers seek outside resources</td>
<td>limited student use of phone, fax, copying, no spaces for developing student projects, no space for sharing/evaluating student work, school location limits outings, school location limits volunteerism</td>
</tr>
<tr>
<td>#6. Allow for flexibility and adaptability to changing needs</td>
<td>no new courses offered in recent years, teachers included in new hire process</td>
<td>content learning promoted (v. life long), little adaptation of district curriculum, many shared ideas among teachers</td>
<td>few moveable walls, infrastructure restricts adaptability, building's core is over capacity, site allows limited expansion, modifications, site offers program support, changes over time have not followed program</td>
</tr>
</tbody>
</table>

Figure 13. Floyd Dryden School Matrix: Case Study Findings.
4.5.2 Findings Regarding the Six Design Principles.

Floyd Dryden Middle School has many challenges in enhancing teaching and accommodating the needs of all learners. Many of the teachers try to use aspects of the middle school pedagogical model, but they have not been able to break from the traditional grade level organization, initiate alternative assessment, or expand exploratory offerings. Design principle #1 was developed to encourage schools like Dryden to reach out of the schooling paradigm and into the learning paradigm. The case study demonstrated that they utilize more of the traditional junior high approach that relies on standardized curriculum and is not dependent on collaboration or diversity. The physical environment has both caused, and continues to support this model. The predominate use of desks with attached seats, few moveable walls, and the general low aesthetic quality of the space creates an uninspired setting for teaching or learning.

There is extensive community use at Dryden (#2) but it does not function as a center of community. There is an expectation by the community that the facility be available for use after hours by the public, but there is not a collaborative ideal about community that drives pedagogical decisions at the school. The district’s standard curriculum is not dependent on community involvement, and there are very few funds to support teachers in any community activity that requires fees (including transportation). Consequently, the school functions well as an academic center rather than a community center.

Teachers are very supportive to one another, sharing ideas and providing emotional encouragement. However, staff is not empowered at Dryden, which leaves many people feeling like it’s too much work to get involved. The dissolution of the Student Council (due to the lack of teacher interest in coaching) is one example of the limited involvement that Dryden takes on in the school (#3).
There is a strong focus on health and safety at the school (#4). The study revealed that there is a strong effort to make children responsible for their action. There are clear policies on behavior and consequences are consistently administered. The grade level organizational model makes it very difficult for teachers to get to know kids, though, since children change teachers each school year. The physical environment has been a detriment toward health and safety, as well; it is deteriorated and aesthetically empty.

A small group of parents are dedicated and hard working toward providing the resources that Dryden teachers and students need but cannot get with limited district budgets. They accommodate most of the financial assistance requests that are made by teachers each year. Some teachers pursue resources outside of the school, as well (#5), and are effective in making special projects and programs work. They encourage parental assistance in the classroom, especially when there is topical expertise.

Dryden has potential for some long-term flexibility and adaptability to changing needs (#6). However, the current two-phase, $5.5 million renovation project does not consider wholesale facility changes that would improve the school’s ability to serve as a contemporary middle school. Sadly, there has been little consideration for the programmatic needs. The renovation has been dominated by a “fix it up and move on” attitude.

4.5.3 Findings Regarding the Learning Environment as Place.

Floyd Dryden School is an excellent example of the consequences of not understanding the interdependencies of people, pedagogy, and the physical environment. The staff at Dryden is caring and professional in their work. However, they stand somewhat alone with the awesome responsibility of providing for each child’s education. The case study revealed that teachers
know that the school is not accommodating the needs of learners, and they know that their own
teaching is stifled by the need to meet standardized test requirements.

I have to always be aware that we (teachers) are all driving toward a standardized
(graduation) test which is only one learning style. That is the reality I have to live with,
although I try to offer different learning opportunities when I can. To me, (standardized
testing) is a conflict, although I understand the need to weigh the cow, the direction we
want to go in, that is, what we say, is different than what we do.54

The pedagogical framework is constructed around the district’s core curriculum that is
dominated by the traditional approach of lecture, textbooks, and worksheets. This pedagogy is
linked to the adult people in the school in that it gives clear direction to teachers on what material
they are to present. (This points out a distinction of the theoretical framework that is discussed
further in chapter 6.0.) In this way it serves the functional portion of the definition of pedagogy,
that is, the “science of teaching”55 but it does not necessarily address the creative part of that
same definition, the “art of teaching.”

It did not require a case study to point to physical deficiencies in the Dryden school
facility. The study did, however, illuminate the opportunity that Dzantik’i Heeni school had
when they were able to construct a new facility to serve a middle school philosophy. There was a
general acceptance by the School Board and district administration such effort was not needed
for the current Dryden project; that a renovation would bring the school to an equal playing field
with its cross town rival. The physical environment is, and will continue to be, a serious barrier

54 Author interview with Mary Capobianco, Dryden teacher, April 30, 2003 Juneau, Alaska
in developing this school as a fully operating middle school. This illustrates the strength of the theory - there are interdependencies. Unfortunately, they are negative, rather than positive in nature.

4.5.4 Findings Regarding the Matrix as a Research Tool.

As with the other case studies, the matrix was a useful way to organize the information at Dryden, illustrating several opportunities as a research tool. It could certainly be a communication tool if there developed interest in renovating or replacing Dryden to become a more functional middle school. It would serve much the same purpose as was seen at Dzantik’i Heeni to educate people about the essential characteristics of middle schools and how they differ from junior high schools.

The matrix might have been useful in helping prioritize the scope of the current renovation. Only about one-half of the total identified work is being done under the current phase, and there is no funding on the near horizon for phase two. The matrix could have been structured with the various replacement components of the renovation on the “x” axis, and the theoretical considerations on the “y” axis. This likely would have led to discussions of the relationships and interdependencies of all the aspects of the school that were being considered for renovation. This may have resulted in different priorities of the current work, and could also have provided valid justification for funding for the second phase.
5.0 CONCLUSIONS.

5.1 Overview.

This study has drawn several important conclusions about the U.S. Department of Education’s Design Principles and the Learning Environment as Place Theory. It also identifies important uses of the matrix to articulate the complex issues of America’s public school system. The research has revealed new information that can offer improved planning and design processes to designers and educators whose work focuses on the development of viable, effective schools.

The specific goals of this study were to:

1. better understand the U.S. Dept. of Education’s Six Principles for school design,
2. consider the significance of the researcher’s theory of the “Learning Environment as Place” developed through this study, and
3. identify potential interactions between the design principles and the theory through the use of a matrix tool.

The research that is summarized in the matrix (figure 14) grew out of the findings of each case study and is the focus of the conclusions herein. It synthesizes the data gathered throughout this work and demonstrates that school facilities have a critical role in the activity of learning; they have lasting influence on the institution’s ability to fulfill its necessary and desired functions. American educator John Dewey’s comments in 1916 continue to apply today. “We never educate directly, but indirectly by means of the environment. Whether we permit chance environments to do the work, or whether we design environments for the purpose makes a great difference.”

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<tbody>
<tr>
<td>#1. Enhance teaching &amp; learning, and accommodate needs of all learners</td>
<td>pupil-to-teacher ratios, enrollment process, ethnic diversity in classrooms, specialized teacher training, teaching experience, teacher longevity at specific school</td>
<td>shared belief system: teachers/students, varieties in teaching styles, methods, # of specialized (diverse) courses, variations from standardized curriculum, grants, awards for teaching, national test scores</td>
<td>variety of activity zones in classrooms, movable walls/doors connect classrooms, designated teacher area, furniture types: desks v tables, windows allow natural light, fresh air, acoustical control/separation, space for sharing/evaluating student projects, oven, stove, refrigerator available</td>
</tr>
<tr>
<td>#2. Serve as center of community</td>
<td>type of school-community partnerships, community $ to support programs, projects, community attends student evaluations, type of student internships, parental involvement/volunteers, # of PTO/membership, types of events</td>
<td>curriculum invites community involvement, community service component, hours of operation outside of school, types of uses of school after-hours, space provided in bldg. for non-school uses, site encourages neighborhood use, student use of telephone, fax, internet</td>
<td>easy community access to building</td>
</tr>
<tr>
<td>#3. Results from a planning and design process that involves all stakeholders</td>
<td>purpose/frequency of staff meetings, administration-staff communications, Site Council participation, PTO interface w/ school staff, Student government participation</td>
<td>site based management culture, teacher &amp; staff empowerment, student empowerment, shared responsibility for education</td>
<td>space available for planning meetings, staff lounge invites collaboration</td>
</tr>
<tr>
<td>#4. Provide for health, safety, security</td>
<td>volunteers for hall monitoring, playground nurse, counselor in school, # of staff trained in first aid/cpr, staff awareness of drug issues, field trip policies, fire drills, escape plans, police officer present</td>
<td>health, personal safety curriculum, peer mediation program, care taking of environment part of curriculum, diverse student groups v. ‘clicks’, conflict resolution policies, DARE program</td>
<td>evidence of wear and tear, # of vandalism incidents, space for on duty police officer, bldg. security: door locations, locks, cameras, custodial/maintenance, groundskeeping quality, health center/nurse office</td>
</tr>
<tr>
<td>#5. Make effective use of all resources</td>
<td>teacher feedback/evaluation, school policies support outings, staff development opportunities, students in teaching, mentoring roles, parent participation in classrooms, PTO funds</td>
<td>curriculum supports teacher as coach, mentor, # of social opportunities for students, culture expressed in social &amp; curriculum, school/home interest connections, teachers seek outside resources</td>
<td>student use of telephone, fax, copy machines, spaces for developing student projects, space for sharing/evaluating student projects, school location supports outings, school location supports volunteerism</td>
</tr>
<tr>
<td>#6. Allow for flexibility and adaptability to changing needs</td>
<td>policies regarding new courses, policies re: interior modification, hiring policies support pedagogical focus</td>
<td>life long learning promoted (v. content), adaptation of district curriculum, shared ideas among teachers</td>
<td>moveable walls, infrastructure (structure, utilities), building designed for expansion, site allows for expansion, modifications, types of changes over time, # of upgrades/improvements per year</td>
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Figure 14. Summary Matrix: Design Principles Learning Environment as Place Theory
5.2 Increased understanding of the U. S. Department of Education’s Six Principles for School Design.

There are two significant things that have been learned about the U. S. Department of Education’s Six Principles for school Design. The first clarifies meaning and application of the principles. The second considers their relevance.

5.2.1 Clarified Meaning and Application.

The meaning and application of the design principles were demonstrated in four important ways that are discussed in this section. They include:

#1. Design Principle #1 as a powerful reflection of 21st century schools,

#2. The school facility that is designed for multiple delivery methods looks and functions differently than schools designed for traditional group instruction,

#3. Specific characteristics can be found in schools that function as diverse learning environments,

#4. Design Principles #2-6 are actually elements of, and/or resultants of Design Principle #1 rather than unique design principles in their own rights, including

- Interpreting Principle #3 as empowerment,
- Health and safety (Principle #4) are fundamental human needs rather than design principles,
- Schools demonstrate human and material resourcefulness (Principle #5),
- The need for flexibility and adaptability (Principle #6) is predictable.
#1. Design Principle #1 captures the essence of what defines the 21st century education model. Through many years of work with people of all ages, teachers have developed deep personal understandings of how truly diverse the human species is when it comes to learning. The scientific community has reinforced this experiential understanding through brain research and social study over the past two decades. Most educators agree that the traditional “factory model” of education does not work for today’s students. The notion that all students can learn the same things at the same time, in the same place, and through the same methods is being questioned. Principle #1 emphasizes an educational environment that is more responsive to diverse individual needs. For the physical environment, this means that children need to be able to move comfortably and freely so variety in furniture, room shapes and layouts is desirable. Pedagogically, it means embracing and utilizing a single (as with Montessori) or multiple (as with Dzantik’i Heeni and Harborview) approaches that can accommodate diverse learning needs and promote life-long learning rather than specific content. The study has demonstrated that accommodating the needs of all learners is an essential characteristic of the 21st century learning paradigm, and schools that place a greater emphasis on diverse teaching and learning are more exemplary of this educational reform model.

#2. The study has demonstrated that school facilities that are designed for multiple delivery methods look and function differently than those designed for traditional group instruction. Many of today’s schools are places where learners are actively engaged in participatory processes of doing real things rather than just receiving information from the teacher. In this setting, control is loosened by the teacher and greater freedom of movement is given to the student, both inside the main classroom and
throughout the school. The self selection of cycles of work and rest, and choices of interaction with others or isolation were observed in both the Montessori and Dzantik’i Heeni environments. This approach empowers a child, building responsibility for his or her own learning.

Even with young children, Best Practice teachers are careful not to inculcate day long dependency on teacher instruction, directions, and decisions. They see their overriding long-term goals as nurturing children’s capacity to run their own brain, set up and conduct their own inquiries, keep track of and evaluate their own efforts.”

The ability for the school to function in this model had a very strong dependency on the physical environment. This was especially evident at Dzantik’i Heeni

#3. Three of the four case studies, Montessori, Dzantik’i Heeni and Harborview Schools showed many of the important characteristics of functioning as diverse learning environments. The degree to which these characteristics existed, and the degree to which they showed interdependencies with one another varied was certainly connected to the design of the facility. The Montessori school demonstrated this most clearly. Their current location in a basement space that was never intended to function as a classroom has created significant challenges even though the issues of pedagogy and people are very strong. Also, Floyd Dryden School’s focus has not been to accommodate

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the needs of all learners, so its built environment lacked the qualities that were considered important for meeting this design principle.

**#4. This study has revealed that Design Principles #2-6 are actually elements of, and/or resultants of Design Principle #1 rather than unique design principles in their own rights.** A learning environment that serves as Center of Community (#2) is, in fact, a school that is accommodating the needs of all learners (#1). A sense of community is constructed from the fulfillment of social and emotional needs within a group. Societal expectations are creating a demand for workers who can collaborate with others, share ideas, and work as a team. Authoritarian teaching is incompatible with the new demand for thinking and problem-solving skills. Even in the workplace, we’re recognizing how much collaboration actually goes on in American life and how valuable group problem solving is, compared to perpetual competitiveness and isolation. When socialization activities are placed in the same realm as cognitive learning, the synergistic resultant is an emotional connection to the learning environment that provides a sense of community.

Design Principle #3, “The learning environment should result from a planning and design process that involves all stakeholders,” was originally developed to emphasize the importance of collaborative work in the formation of new schools. This study applied the concepts of collaboration to the ongoing operation of the school. The original principle offered value to projects that are “are on the boards” but not to existing schools. More importantly, if the concept of collaboration ends when the construction project is

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58 Fiske, Edward (1992). *Smart Schools, Smart Kids*, Touchstone, N.Y p. 65  
finished, one must critically consider if there was really a sense of collaboration to begin with.

This principle illustrates the importance of empowerment for all people who are involved with schools. Children, teachers, parents, and the entire community are stakeholders in a learning environment that accommodates the needs of all learners because empowerment, like socialization, is a basic human need. People need to know that their voice is valued, especially in a large institution like a public school system that is influencing the life of their children. This is the concept of democracy in education which American leaders and educators have promoted for more than 200 years.

The study demonstrated that providing for the health, safety, and security of a learning environment is not so much a design principle as it is a fundamental premise. For the goals of public education to be achieved, there must be created a physical, psychological, and emotional environment that allows the learner to be receptive to the subject content. Human beings are naturally wired to learn; it is intrinsic to their existence. The degree to which positive learning experiences can contribute to overall growth and development has been studied by psychologists for many years. Figure 15 depicts Abraham Maslow’s well known model that uses a triangle to illustrate the concept that all humans must first have their basic needs of safety and belonging met before they are motivated to move up the hierarchy to fulfill more complex needs. C.

![Figure 15: Maslow’s Hierarchy of Human Needs](image)
Carney Strange and James H. Banning have applied Maslow’s theory and model to post secondary educational settings, illustrated in Figure 16.

![Figure 16. Strange & Banning’s Adaptation of Maslow’s Theory.](image)

According to our model, an educational institution must present first an inclusive, safe, and secure environment for all students. Without a fundamental sense of inclusion and security, the pursuit of more fulfilling educational experiences is a daunting task. Without a basic sense of belonging to the campus community, free from threat, fear, and anxiety, attempts at other more lasting goals will likely fail. 60

Simply put, the learning environment must meet the human needs for health, safety, and security or it will not be able to accommodate even the most basic educational needs.

Making effective use of all resources (#5) is also an essential part of a learning environment that accommodates the needs of all learners. This design principle was developed with two primary issues in mind – the human and tangible resources that teachers and children need to have a fulfilling educational experience, and secondly, the world natural resources that are invested in the construction of school buildings. This study focused on applicability of this principle for existing schools; it did not consider schools that were under design or construction. This study identified many of the important human and material resources that are needed to operate schools. This study did not consider the concepts of sustainable construction resources or life cycle costing.

because the case studies were focused on existing school programs and buildings. However, many of the issues presented in the school’s role as center of community are relevant to contemporary livable communities issues that emphasize a systemic approach to all types of human and material resources.

The emphasis of Principle #5 is that school designs have the potential to maximize available resources through multi-purpose and shared use, technology, and natural/cultural resources to become places that support continuous opportunities for teaching and learning. Good teachers have understood the pedagogical implications of this principle for many years. The study showed that even teachers who rely on standardized district curricula are constantly seeking out human and material resources to make the learning interesting and relevant. As the educational emphasis moves from schooling to life-long learning, the role of schools is changing from that of teaching subjects to teaching learning. It is not reasonable to expect teachers to thoroughly know every subject when the emphasis is on life-long education. He or she must draw upon on a myriad of resources to participate in the educational process and serve more as a coach and mentor to each student. Making effective use of resources is another way in which the needs of all learners are being accommodated, and therefore it is actually a part of Design Principle #1.

America’s educational system has undergone substantive changes in the past 400 years. As evidenced in the historical summary (fig. 1) education has moved along with social/political eras; this trend can be expected to continue. Education defines its people in many ways while simultaneously trying to reflect its social and cultural ideals. All aspects of the learning environment undergo change; some more than others. The
expectations for the educational institution and for learners themselves have greatly expanded and changed. The mission to “Americanize” the population through a single pedagogical belief system and methodology has been replaced with multiple learning styles and diversity. If the school’s purpose is to accommodate the needs of all learners, then it must be a place that can be flexible and adaptable to change, both literally and figuratively. If diverse teaching and learning is not a goal, then adaptability and flexibility is much less important.

The building will either lead, or follow the pedagogical direction. As was seen at Dzantk’i Heeni School, the lack of flexibility and adaptability of the physical facility significantly prevented the new pedagogical approach to take hold at the old facility. Once a new school was designed that placed a priority on flexibility and adaptability, the new philosophical agenda was able to flourish.

5.2.2 Relevance of the Six Design Principles.

This study has demonstrated that the design principles are more than a tool to guide the architectural design of school buildings. They have strong pedagogical connections to the 21st century educational reform movement, thus they imply a relationship between the built environment and learning. The six design principles were intended to support and align with the institutional movements toward school reform. However, the philosophical perspective emphasized in the design principles does not necessarily align itself with what makes a school successful. Not all schools are moving toward the new learning paradigm but are still demonstrating success. So an over-riding question of the relevance of the six design principles
has been raised by this study: What is their purpose if it is not to articulate the elements that make up effective schools?

There is a prevalent, ongoing debate of what really matters in education (this discussion has actually been ongoing for centuries). The current era of accountability focuses on making a single type of outcome be the indicator that school has been effective. The ultimate concern is that each child has achieved minimum academic skills that can be demonstrated through a standardized test. This approach is consistent with a long tradition of American society’s desire for knowledge in quantifiable, scientific ways (although qualitative research has grown in acceptance in the past several decades). Additionally, modern America cultivates individuality through competition (eg. sports heros, movie stars) and an entrepreneurial ethos – find an idea, make your million (ala Bill Gates). Nearly every aspect of American life is influenced by the notions of right way/wrong opinions, self-fulfillment through the exclusion of others, and conquering the unknown. It is, therefore, not surprising to have the political face of the public school system expressive of standardized tests for both student and teachers, and have the value for personal life success after schooling defined by salary and social status.

The definition of success itself becomes more complicated when trying to apply the design principles. For example, the case study at Floyd Dryden School illustrated that they are not functioning as a school that enhances teaching and learning and accommodates the needs of all learners (principle #1). They operate in a somewhat “modernized” junior high model that admittedly by the staff, does not necessarily work well for all students. Yet, the standardized test scores are higher at Dryden than those of the other middle school in Juneau that demonstrated a closer alignment with the design principles.

On a national level, there is a very strong emphasis being placed on tangible outcomes such as test scores to define success. Standardization has become the current educational
It is widely accepted among educators that paper and pencil tests do not effectively measure educational success for all children. They only reflect specific cognitive skills and are subject to extensive inconsistencies of human behavior. As noted by the teacher at Floyd Dryden School,

> I have to always be aware that we (teachers) are all driving toward a standardized (graduation) test which is only one learning style. That is the reality I have to live with, although I try to offer different learning opportunities when I can. To me, (standardized testing) is a conflict, although I understand the need to weigh the cow, the direction we want to go in, that is, what we say, is different than what we do.\(^{62}\)

The design principles are based on school characteristics that were developed by a well respected group of experts under the organizational efforts of the U.S. Department of Education. Yet they are significantly contrary to the educational assessment and expectation mandates created by political leaders. All of the schools in this study struggle with reconciling these differences, and thus, the question of relevance for the design principles themselves is created. This study indicates that the principles are relevant considerations of the school reform model, but they are not very meaningful for schools that have chiefly directed their energies toward being successful in the fulfillment of the national political agenda. This clearly demonstrates the complexities of America’s democratic institution of education.

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\(^{61}\) [http://www.nclb.org/next/overview/index.html](http://www.nclb.org/next/overview/index.html)

\(^{62}\) Author interview with Mary Capobianco, Dryden teacher, April 30, 2003 Juneau, Alaska.
5.3 Significance of the “Learning Environment as Place” Theory.

A second goal of the study was to consider the theory that schools become places, rather than spaces, when they demonstrate relationships and interdependencies between people, pedagogy, and the physical environment. This idea has been critical to making this study a rich assessment of the diverse elements that make up schools.

It is very typical of American culture and its “way of knowing” to want to have a single answer to any given problem (and the more quantitative, the better). This is especially true in the current political climate of public accountability, wherein the school system is being demanded to produced substantive evidence that learning has occurred. The standardized test is the measure to which the very complex and intangible field of teaching and learning is being held accountable. Nurturing a child through many years of development to become a respectful, responsible, contributing member of society has not yet been found to be measurable by a standardized test.

This study has pointed to the difficulties to try to find a single, most important element around which the public educational institution can evolve. The use of the theory to frame and guide this research has demonstrated that many things work together to produce learning environments. The ideals and expectations of America’s educational system have historically grown through many variations and eras of its people, pedagogy, and physical environments. The institution can be expected to continue to evolve as these three defining elements are shaped by cultural and social change.

The theory has also shown that when greater levels of dependency and interaction occur between people, pedagogy, and the physical environment, a stronger sense of place results. For example, the Montessori School’s high degree of interactions between the three theoretical
elements results in a school that fully shares the responsibilities of learning with children, teachers, parents, extended family, and the community. The high levels of involvement and interaction between families and the deeply rooted feeling of commitment have built a strong sense of place that is sustained even after the children have outgrown the academic offerings.

Out of an understanding the relationship between the physical environment and behavior comes the fundamental human need for belonging and interaction in a greater community. The Montessori children and families have made emotional connections to an intangible realm of school that have resulted in drawing personal meaning from their experiences. These feelings and emotions stay vivid long after the child has left the school. This demonstrates the essence of place-making. Places, over the long term, are constructed from a legacy of lives that have come before and will come after specific individuals, interacting with the experiences and physical environments that shaped them in unique ways.

5.4 Influences and Outcomes of the Matrix as a Research Tool.

As noted in the Findings, the matrix has emerged as a valuable research instrument in the study of schools. The complexities discussed above conclude that there are multiple elements that contribute in varying ways and degrees toward the formation of the entity known as school. Given this multiplicity, an organizational tool such as a matrix allows the complexity to be broken down and categorized so that specific new understandings can result. In this study, matrices were useful in understanding where the current educational issues historically originated, and in the gathering of new information from the case studies.

The process of overlaying two distinctive elements (the six design principles with the theory) allowed new information about both to emerge. Through this effort, the matrix opened a
new area of study, the interdependencies of one element with another. These relationships and
teractions are not yet fully understood. Schools in urban centers such as Boston, Minneapolis,
and Portland (Oregon) have minimized core facilities and “built” schools from the extensive
etwork of downtown resources (people, curricular offerings, and physical environments).
Cyberschools are growing, too, as technology becomes more accessible, making the necessity of
the school classroom questionable. Understanding how the various elements of schools are
dependent upon one another opens totally new ways of thinking about school. It is this action of
overlaying one area of study with another and seeing a new result that provides the most
potential for future use.

In the extensive documentation and existing literature on the subject of schools and
school reform, there has not been found any other similar use of a matrix. It is, in itself,
powerfully new information for the future study of school, especially when considered with the
theoretical premise across one axis. Just a few ideas of how the matrix could be used include
planning new facilities, reviewing designs, assessing current schools, distributing resources
(human, material, financial), or testing a variety of curricular approaches. Additionally, a
weighting factor could be applied within the matrix to apply relative importance to the
characteristics.

This instrument could allow a significant amount of communication among the many
diverse interests in education. Ultimately, this could result in increased understanding of issues
other than those known by the specialty interest. For example, teachers could have a better
understanding of the architecture they work in, and conversely, designers could better understand
pedagogical concerns. This communication could allow a synergistic resultant of a facility that
was better designed for its intended use. This could, in turn, lead to a new definition of the
educational equity that Benjamin Franklin constructed over two hundred of years ago. Rather
than making sure everyone gets the same thing, schools might be able to provide everyone what they need.

5.5 Study Limitations.

5.5.1 Location.

The case studies used in this research were limited to four schools in Juneau, Alaska. While the choice to use the schools from the same community helped narrow the study to a manageable level, it is also recognized that this choice did not necessarily provide the widest variety in school types. The schools were all located within the same school district, so the pedagogical base was less diverse than might have been with a wider selection of schools in different districts and states. However, it should be noted that the selected schools were very typical of those throughout the state of Alaska and much of the United States.

5.5.2 Potential Researcher Bias.

The four schools were selected because of a base of familiarity. Raising three children in a small town such as Juneau made it impossible to not have personal knowledge about at least some of the schools. This prior knowledge could arguably appear biased to some people, and therefore a limitation of the study. There are only two middle schools in the community and both have provided personal experience as a parent of a child enrolled. Additionally, both middle schools were known to be philosophically quite different from one another, and they were known to be opposite in their physical environment offerings. Rather than excluding these middle schools
from the study, they seemed like unique opportunities to consider. Having personal experience with all of the schools then became viewed as an asset because it provided consistency to all case studies, and it provided personal understanding of many details of the schools that might otherwise take extensive study to unpack.

5.5.3 Limited Sample.

A final limitation in the choice of case studies was the lack of a high school, especially since much of the expectations of America’s public school system are considered the outcomes of the secondary education level. Juneau has only one high school at this time (although a second high school is in the schematic design phase). It is further complicated with an extensive renovation project that is occurring while school is in session. The overcrowded situation (capacity is 1150; enrollment is 1650) combined with the renovation has created significant disruption in all aspects of the school’s operations. A case study of this school at this time would not have resulted in reliable information. Perhaps a high school in another school district could have been studied, but this would have created logistical difficulties and been inconsistent with the reasons for selecting the other schools.

5.6 Future Work.

There are numerous opportunities for future work that could grow from this study. The first is consideration of the design principles for the development of design guidelines. Although the design principles provide an important philosophical basis for the design of schools that are indicative of 21st century learning, they do not, in themselves, communicate specific criteria or
building components that will help move a design idea into reality. Design guidelines typically include both narrative and graphic descriptions that could work as a communication bridge to help designers and educators understand one another’s ideas about the physical space of a school. They could be used to inform practitioners in the following important ways:

a. serve as a standard for school planners and architects in the design of new schools,

b. function as an evaluative tool for existing schools whereby the principles and the guidelines can be the conversational basis for discussion of how/if the school can be modernized to address current needs,

c. be considered as an evaluative tool for architectural design awards programs.

Figure 17 illustrates how study of the design principles could be expanded into design guidelines. The physical environment characteristics noted in matrix have been used to illustrate how a classroom that accommodates the needs of all learners (principle #1) might look.
Figure 17. Design guideline considerations for Principle #1: The Learning Environment Should Enhance Teaching and Accommodate the Needs of all Learners.
The differences found between Dryden and Dzantí’i Heeni Middle Schools offer a second opportunity for future study. These two schools demonstrated two very different types of outcomes: Dryden focuses on meeting national political outcomes (the product), and Dzantí’i Heeni works toward the national pedagogical goals (the process). The students from these two middle schools merge into the community’s single high school. They begin high school with differing systemic values and expectations, built from their previous school experiences. How are these changed, or maintained through the high school years? How does the high school reconcile the pedagogical differences that their students have grown up with? It is interesting to note that the high school is widely known to operate in a traditional departmental organizational model that is not reflective of the school reform movement. The principal of the high school is the spouse of the middle school principal that utilizes the more contemporary approach. These two administrators could provide some very interesting perspectives in the study of the high school’s ability to be a learning environment that accommodates the needs of all learners. This could be studied through the high school experiences of specific students who were considered successful in their middle school years. A variety of high school issues such as academic involvement, their facility likes and dislikes, and social groups could be studied. It could demonstrate new relationships and interdependencies between two specific types of schools (middle and high) that might provide some insight into the important considerations for both learning environments.

The matrix offers significant potential for use in professional school planning and design. It has been very effective in organizing diverse and extensive amounts of information into a concise and understandable format. The project goals, overlaid with the theoretical premise could be used as criteria for a specific school project. These could provide a “fill in the box” format to help designers and educators see the full impacts that the new design might offer. It could also
be used as a design validation tool as reviews occur throughout the design phases to ensure that resultant decisions were made with the overall goal of making the new school function as a learning place.

5.7 Closing Remarks.

It seems most fitting to end where it all began. In January, 2002, as this study was beginning to take shape, I asked the Juneau City & Borough Manager to consider why schools seem so important to people. Schools have been a passionate topic of extensive debate from the Assembly Chambers to the grocery store for the 20 years that I have lived in Juneau. There are ongoing challenges to bring unity to divergent opinions between two elected bodies, the Board of Education and the City Assembly, who each have important objectives and concerns for a top quality public education institution in Alaska’s capital city. It has been very interesting to step away from the position as professional staff on school facility matters into the position of a researcher and consider a seemingly simple question like, “Why are schools important?” Mr. Palmer’s reply has guided much of this study and seems only fitting to close this work,

Schools are the vessel; the container for our future. Good education can occur on the grass outside a block building in the Belize countryside, or it can occur in the newest, wired classroom of a wealthy suburban neighborhood in Silicon Valley. The buildings are only a part of it; what occurs inside is priceless. Schools, as an institution, are a major component of a community. They provide focus for family, for children, for peer development, and for preparation of children to move into society that is beyond, yet part of, the school itself. The answer to the question seems simple, we care about schools
because schools represent the future of our children and our wellbeing as a society. They define who we are.
6.0 APPENDIX

6.1 HARBORVIEW SCHOOL CASE STUDY

6.2 JUNEAU MONTESSORI ELEMENTARY CASE STUDY

6.3 DZANTIK’I HEENI CASE STUDY

6.4 FLOYD DRYDEN CASE STUDY
6.1 HARBORVIEW ELEMENTARY SCHOOL CASE STUDY.

6.1.1 Principle #1: The Learning Environment should enhance teaching and learning and accommodate the needs of all learners.

People.

There are currently a total of 16 regular classroom teachers at Harborview. All teachers function in a self-contained model, meaning that the classroom teacher is responsible for the majority of each child’s learning, in all academic subjects. Physical education (PE), library instruction, music, and counseling are provided outside the basic academic services. Children receive 2.5 hours per week of instruction for these other subjects with such instruction being provided by specialized teachers in spaces outside the regular classroom. The overall average pupil-to-teacher ratio at Harborview Elementary is 23.5:1. The K-2 grade levels have slightly lower PTRs and the upper grades average about 27 students per classroom due to the actual number of children enrolled at specific grade levels.

As part of the basic budget, the district provides 2.75 full time equivalent (FTE) positions per elementary school building. They require that at least .5 FTE be used for a counselor, and another .5 be used for a librarian. The Site Council of each elementary school decides how to distribute the remaining 1.75 FTE positions. Harborview has selected to use .75 FTE for PE, an additional .5 FTE for counseling, and .5 for music instruction.

Students are assigned to classrooms by an established set of criteria that is based on trying to balance all classrooms with regard to ethnicity, gender, and abilities. Parents may make requests for a specific philosophical approach or learning style, which will be
considered along with other factors as class assignments are made. For example, if parents desire mixed age groupings, then this will be noted, however specific requests for a teacher without sound educational reasoning are usually denied.

Teachers enjoy working at Harborview and demonstrate this with longevity. District policies allow teachers to have “building rights” which allows them to have priority in placement when vacancies or cut-backs occur. Many teachers have worked at the school for more than 10 years and five have been there for more than 20 years. Some have changed teaching focus, such as a regular classroom teacher transferring to a PE teacher position, but most who have done this have wanted to stay at Harborview more than accept the specialty position at another school.

**Pedagogy.**

A variety of pedagogical approaches are used by individual teachers at Harborview, but none have recognizable labels. There are currently six mixed aged classrooms and ten single grade classrooms, four of which are “looped” (see explanation below). Mixed aged groupings are determined in two primary ways: by the teacher’s desire to work with multiple ages and/or the school’s need to distribute children to meet desired pupil-teacher ratios.

We try to offer multi-age opportunities for all age levels but that is not currently the case. Accountability and benchmarks are very difficult for multi-age. It can be difficult for teachers to provide adequate instruction without proper experience or training. Burn out is a big factor.\(^6\)

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\(^6\) Author interview with Sue Baxter, Harborview School teacher, February 13, 2003 Juneau, Alaska.
Looping is also used at Harborview, wherein a group of children stay with the same teacher as the group advances in grade level. For example, a class might begin as first graders with the teacher and the next year all the students and the teacher advance to second grade studies. This allows teachers to form longer lasting relationships with the children, thereby understanding and being able to respond to their educational needs more thoroughly. It also provides the teacher a type of internal incentive to seek solutions to difficult behaviors and learning issues because he or she realizes that the specific child will stay with him or her rather than being passed on to a new teacher the following year.

Harborview uses the district-wide curriculum as the pedagogical base. Since it is a standards based system it allows flexibility in the specific delivery of most subjects. The lower elementary classrooms utilize learning centers and themes more extensively than the upper elementary levels that rely more on textbooks and workbooks. “There is a reluctance (among Harborview teachers) to leave curriculum untouched. We pay close attention to the materials the district provides, but teachers modify a lot to meet the needs of their kids.”

There are several types of special services delivered to children who qualify according to the district wide criteria. Extended Learning (EL) is a “pull out by grade level” program which means that children are removed from their regular classroom for a specified period of time to work with other children in their grade level with gifted abilities. The teacher uses a lot of project based learning in the EL program that develops skills in research and allows children to expand their abilities beyond traditional delivery methods.

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64 ibid.
The district uses an inclusion model to serve children with cognitive limitations or special learning needs. Harborview has built acceptance of all kids with diverse needs into the classroom experience. They emphasize meeting the needs of all types of people – both kids and adults. It was interesting to view a student research project that incorporated the special needs of the student’s friend who is disabled into the study. 65 There is widespread acceptance of differences.

**Physical Environment.**

Originally constructed in 1952 with an addition in 1954 and the gymnasium added in 1974, Harborview’s design follows the traditional double-loaded corridor concept. A total of 21 classrooms are arranged in a repetitive unit pattern on each of two floors. Although it is constructed on a flat site, the main level is raised approximately 4 feet to allow the basement to have a limited amount of natural light via fixed windows at approximately 6 feet above the finish floor.

The regular classrooms are identical, each 1,000 s.f. in size and have a teaching wall, built in casework, sink, and ribbon awning windows located several feet above the finished floor. There is uniform florescent lighting, one telephone, and a designated teacher’s desk area. Each classroom has computers, the quantity varies with teach interest and age of children. All classrooms are used in the self-contained model, that is, none have doors or folding walls to provide an internal connection between rooms.

There are two kindergarten classrooms that are about 1,250 s.f. and have direct access to the front playground. They each have a single toilet room and designated storage room.

65 ibid.
Three classrooms have been adapted from previous designated uses. Two of these were made from the former school library that has been relocated to the adjacent building. A wall was constructed in the center of the library that now divides it into the same grid unit as other classrooms. The third classroom was originally the school’s lunchroom, but since the school’s population has grown beyond the capacity of this space, the children now eat lunch in the gymnasium.

6.1.2 Principle #2: The Learning Environment Should Serve as Center of the Community.

People.

Harborview prides itself on being a strong school community. “We honor and cherish the parents and families of Harborview.”\textsuperscript{66} The staff works hard to welcome and involve parents and the greater Juneau community into the school. Several of the lower elementary level teachers write newsletters to parents, keeping them informed on various classroom activities, and a school-wide newsletter is produced monthly to keep all parents aware of major events.

The Parent-Teacher Organization (PTO) has about 20 active members. In recent years it has been difficult to recruit parents to serve as PTO leaders, but when help is needed for activities and events, there is a strong effort from families to participate. The PTO raises funds for a variety of school programs. Occasionally, they host parent education events, too.

Harborview receives financial assistance from several local businesses to support special projects and events at the school. For example, McDonald’s has provided drinks

\textsuperscript{66} ibid.
for the annual Fun Run for many years. Additionally, Harborview has developed an active database of goods and services that parents have offered toward supporting the school.

Harborview staff maintains close relationships with one another. “We have formed a community; it’s a nice place to come to work; life needs are met in a variety of ways.”67 This is demonstrated in the longevity of teachers at the school, and also through the close friendships that have formed between teachers and their families.

**Pedagogy.**

Pedagogically, building a sense of community outside of the school is not really emphasized among Harborview’s younger students. However, the upper elementary children become more aware of their place in the community through special projects and outings in the 4th and 5th grades.

The school uses special events to reach out to the community of parents and families that make up all of Harborview. The emphasis is to engage families beyond their child’s individual classroom, to experience Harborview as a full community. The annual winter and spring concerts, and the Spelling and Geography Bee competitions, bring many families to the school.

The school uses “Friday Fun Nights” approximately once per month as a fund raising event that brings younger siblings and friends to the school who don’t normally attend. Classroom teachers and parents take turns hosting the activities (games, movies, food) and sharing profits with the PTO. The fun nights help build bridges from the child’s

67 ibid.
life at school to the whole family so they are comfortable with Harborview as a fun and safe place for both educational and social needs.

**Physical Environment.**

Harborview’s location as the only downtown elementary school makes it a very active community facility, although the lack of parking makes the school difficult to access by community volunteers and parents during the school day. The school gymnasium is used extensively after-hours. It has an outside entrance and toilet rooms located in the immediately vicinity which allows easy, secure separation of the gym from the remainder of the school. Community use primarily consists of recreation sports such as indoor soccer and basketball, however, the gym is also used for special activities and events from organizations such as cub scouts.

The school library is used for community meetings approximately five times per month, and specialized classrooms such as the computer lab are used by the school district for staff training.

The outdoor covered play area and the school playground are used by much of the community, mostly on a drop-in basis. Most of the surrounding neighborhood has small residential lots without nearby park spaces so Harborview’s outdoor space often serves as a neighborhood “back yard.” As such, it supports the concept of community by bringing together neighbors and friends (even those without children enrolled at Harborview).

The school is used extensively for childcare and recreation programs. Its downtown location makes it convenient for working parents. An active before and after school program operates for Harborview children, and during the summer months the program expands to include children from throughout the Juneau community. Enrollment
in the school year program averages about 30 children, and the summer program has many more.

6.1.3 Principle #3: The Learning Environment should result from a planning and design process that involves all stakeholders.

People.

Harborview School’s principal holds staff meetings approximately three times per month. They are scheduled for one-half hour after school, but often extend to more than an hour because staff is highly interested in being involved and informed. The topics are set by principal and are included with important information dissemination.

The teachers at Harborview participate in a wide range of planning activities and committees. Approximately 50% of the staff serves on at least one district-wide committee. Participation in district-wide issues makes Harborview visible to the rest of the district. It also helps break the feeling of isolation that is common to the self-contained classroom model used for elementary school. The staff holds “Literacy Lunches” every Tuesday, to share information and implementation strategies on the district core curriculum in reading and writing. They also have standing committees for groups of teachers with similar interests, for example, upper elementary reading, or primary math strategies.

In the spring of 2002, an ad hoc teacher committee was formed to provide input to the district administration regarding the rearrangement classroom spaces due to the remodel of the adjacent high school that displaced programs from the adjacent Marie Drake building. Unfortunately most of the work that they did to prioritize needs and
identify possible alternatives was not considered. This frustrated the staff that was involved and undermined the empowerment and site authority that the school values.

One of the first Site Councils formed in the Juneau School District was at Harborview Elementary. Parents and staff have actively embraced the concept of site based management since it was first offered in the mid-1980’s. Harborview’s Site Council is made up of staff and parent representatives from all interests of the school. It participates actively in hiring the school principal and makes critical budgeting decisions.

The Site Council is viewed by everyone as an active decision making body. Being on it is not (seen as) a chore; people are willing to serve and take on the responsibilities. They are pro-active and seek support outside the school for what kids need.68

**Pedagogy.**

The Site Council’s role at Harborview extends beyond the standard administrative responsibilities. It has made a priority of seeking outside funding for under-served populations in the school. It has been effective in gaining grants for the English as a Second Language, and the after school Homework Support Club.

Harborview Elementary staff has functioned as an empowered group for many years, despite changes in school administration. One example of this is how the principal has allowed the classroom teachers to implement the policies on class placement and balancing. There is probably no more sensitive a topic than the placement of children into
specific classrooms. Each year teachers categorize all of their current children within the established criteria. The placement teams meet for about a month to reconcile the enrollment, including the requests of parents which are actually the last layer of the process, to decide where students should be placed for the coming school year. “As the classroom teachers, we know the kids the best, and work really hard to respond to their needs.”69

Physical Environment.

The Harborview facility does not have a large meeting space. The library, which is located in the adjacent Marie Drake building, is used for most meetings including the Site Council. It has comfortable tables and chairs (that are actually sized for adolescents rather than elementary ages) and adequate area to lay out materials or work in small groups.

There is a staff workroom located adjacent to the school office that is comfortable for up to 20 people. It is equipped with a range/oven, microwave, sink, and dishwasher. It is also centrally located in the school so it is most convenient for all staff. This space is used mostly by teachers, although parents will sometimes use it when working on a project or committee with staff.

Teachers typically meet in classrooms with parents. They also use the classrooms for small groups to plan special activities or do committee work. Teachers rely extensively on the use of e-mail with one another to coordinate meetings and communicate student issues.

68 ibid.
69 ibid.
6.1.4 Principle #4: The Learning Environment should provide for health, safety, and security.

**People.**

Harborview utilizes the full time nurse and full time counselor for the immediate physiological and psychological health issues. A police officer works with Harborview children in the DARE program, and many volunteers contribute time to help on the playground during lunch recess. The Coast Guard provides ongoing volunteers for this purpose.

The school has a Peer Mediators program, whereby older students are recruited to assist as non-biased problem solvers when disagreements occur. The mediators receive training in conflict resolution and communication skills.

**Pedagogy.**

The “SCOTS” program demonstrates how a shared responsibility for the physical and mental health and safety of children is used at Harborview. This program is used by a team of teachers and specialists to comprehensively address difficult issues that arise with children. They first identify and focus on the child’s needs, then plan interventions, identify resources, and schedule follow ups which address the specific issues.

It grows from concern for all aspects of the child’s development. It might be a behavior issue that initiates SCOTS, but we know that the child’s academic and social progress is also tied to behavior so all the issues must be dealt with.  

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70 ibid.
This collaborative approach was designed by staff and administrators at Harborview and has been implemented at all of the other elementary schools in Juneau.

**Physical Environment.**

The school facility is very old, but is reasonably sound with good daily custodial care. Maintenance is adequate, but teachers have very low expectations because most of their requests (such as interior painting, furniture repairs, etc.) are not granted. The exterior of the building has been neglected and has extensive faded paint, mildew, and damage to the exterior finish material.

The school has four primary points of entry, none of which are highly supervised. Signs are located at each entry requesting that visitors check in at the office, but the office location is not in an obvious location and is remote to three of the four entry points.

The main entry is well marked with a bright, attractive exterior art mural overhead. However, once inside the building, the entry is a drab elongated ramp that elevates upward toward the central corridor. It is not welcoming.

6.1.5 **Principle #5: The Learning Environment should make effective use of all available resources.**

**People.**

Teachers at Harborview extend their knowledge and skills by participating in staff development opportunities throughout the school year. The district sets aside funds to assist teachers in attending conferences or specialized training.
Parents are an important resource for the school and provide a lot of help in the classrooms, especially for the younger age groups.

Parent involvement slows with older children. It gets harder for parents as kids get older. Some parents go back to work so they have less free time. Kids also want more independence, or it can be because the parents feel that children don’t need as much help, which is not true.\textsuperscript{71}

The PTA provides financial resources and logistical assistance for enrichment activities and projects that contribute significantly to Harborview’s effectiveness. An average of $30,000 is raised per year that is used to support a variety of enrichment programs. One such program is “Artist in the Schools” which develops large scale, collaborative visual and performing art projects with children. The statewide Arts Council helps select and coordinate artists that travel throughout the state to work with interested children after school and during lunch recess over a period of several weeks.

A second example is the “Discovery Southeast” naturalist program that provides a year round naturalist and three outdoor experiences per year for children in 3rd, 4th, and 5th grades. The PTA funds this project, as well.

There are several fund raising events per year at the school that are organized by classroom teachers, parents, and children to pay for special projects such as a class field trip. The purpose of such events is two-fold: they help provide necessary funds to special events, and they engage students and families in reaching out to the many resources of the community to support the educational mission.
Pedagogy.
Harborview actively seeks out the human and material resources of the community to support its teachers and programs. It is part of their belief system in life-long learning. The school’s administrative assistant has taken a lead role and has a personal commitment to making connections between the talents and resources of the community and the children at the school. For example, in 1995 she organized a reading mentoring program that brought many community people, from “moms at home” to the Lieutenant Governor into the school as reading mentors. The program has been highly successful and is now expanded to other schools and is implemented by Big Brothers/Big Sisters.

Teachers seek out the resources of the community, as well, and are very creative in using what they find. The school’s art program is an example of this. Without a district supported art funding or curriculum, teachers have been on their own to implement visual and performing arts. Harborview utilizes a local artist as a substitute teacher during scheduled times to provide art instruction to children in the classrooms, while the classroom teachers meet to plan and discuss issues related to special education needs.

Although the time with the artist is limited, it allows all kids to have at least some access to art. The artist also leaves materials and ideas with the classroom teacher to further expand on. The result is that Harborview kids make up a high percentage of the kids in the district wide Extended Learning Art program.\footnote{ibid.}
Teachers have also used training funds to leverage impacts in the classroom. Staff longevity and a shared beliefs system at Harborview have allowed instructional approaches to be spread and shared. For example, when it was anticipated that funding for the Reading Recovery program was ending, Harborview teachers took it upon themselves to expand the program training, despite the lack of direct program funds, from one specialist to three primary level classroom teachers. This allowed three classrooms to have access to the special reading techniques provided in the training rather than the previous 5-6 children who received the specialized services during the school year under the official Reading Recovery program.

Several Harborview teachers have utilized the neighboring Mountainview Senior Center as a learning resource. They have worked with residents and program managers to have elderly visitors in the school. Some of the relationships have been so successful that the older person became “adopted” by the teacher and students and helped in the classroom for many years. This concept has been especially important in the Tlingit immersion program, since elders in the native community take on an important mentoring role in the development of children.

The staff at Harborview believes that school needs to be a fun place, too, so they seek out the resources and solve logistical challenges to make things work. They host many events to emphasize this, including the annual Fun Run, Staff v. Student basketball game, and the Student/Teacher Talent Show. They are committed to children have healthy attitudes about school; making it a place where they want to come.

**Physical Environment.**
Location of school encourages parent participation during the school day. A large portion of the community’s work force is located in the downtown area so working parents can often take off an hour to come help with a specific classroom activity.

Harborview is located adjacent to Juneau-Douglas High School. This provides good opportunities for older students to assist with activities and mentor younger children. High schoolers have served as classroom assistants, playground companions, and provided help for specific projects. Several students have been guest speakers at assemblies and the annual promotion ceremony.

The downtown location also allows class outings to a wide variety of community resources including museums, businesses, and government buildings. A popular annual trip for all 5th grade students is to visit a cruise ship at the downtown dock facility.

The wide central hallway at Harborview is used in multiple ways as a school resource. Art work is displayed on the upper half of the walls through most of the year, and the hallway has also been used to host a “Gallery Walk” in the school, decorating the halls with twinkle lights and student art. On the upper floor, children can often be seen sitting on the floor conversing with another child or working with an adult one-on-one. This activity occurs on the main floor, too, but not has often because there is greater movement through the building on this level.

All of the classrooms have telephones that connect directly to outside lines. Upper level teachers allow children to use the telephone to access community resources more often than teachers of younger aged children. Computers are also present in all classrooms, but some teachers rely on the computer lab for instruction and limit student access to the internet.
6.1.6 Principle #6: The Learning Environment should allow for flexibility and adaptability to changing needs.

People.

“I love teaching at Harborview.” Harborview administration has supported many creative employment arrangements to allow teachers flexibility in accommodating personal needs. Job sharing, part-time status, and extended leave are have all been used. These are allowed by teacher contract, but the office and family culture at Harborview are very supportive of non-traditional staffing arrangements that provide personal support to teachers.

Pedagogy.

The philosophy of life long learning is valued at Harborview, although this approach sometimes conflicts with meeting required standards. “I can easily come up with a list of reasons that kids are not meeting the CORE (district standards) because there are so many factors that influence learning. CORE doesn’t allow for flexibility and doesn’t address the different rates in which children develop.”

A priority at Harborview is class size, because teachers believe that individualized attention is the basis for a sound learning environment. It is supported through good communications on multiple levels, and by clear expectations. “Expectations are really important. Kids need to know what’s expected. At the same time there needs to be

73 ibid.
74 ibid.
enough room for differences." Teachers at Harborview share ideas and experiences to continually adapt their methods and maximize opportunities for children to learn.

**Physical Environment.**

The school site is small, even by Juneau standards where land use is a driving factor in virtually every public building project. The main (only) north-south highway limits land in the westerly dimension while an existing arterial limits land use toward the east.

Immediately to the north is another school building, Marie Drake, which Harborview has occupied a portion of since 1994. To the south is another high-traffic city street.

Compounding the small site is the way in which the building has been placed on the land. It essentially splits the lot, creating parking and a small playground in the front, and more parking and a larger playground in back. Vehicular traffic concerns and a lack of funding for playground supervision limit the school’s ability to maximally use the site.

The building’s structural plan is regular with exterior and corridor walls providing primary bearing. Rooms are laid out along an established grid, divided by a central corridor. The resultant design is highly inflexible in the transverse direction; the depth of rooms is set and would be very difficult to modify effectively. Longitudinally, it is possible to adapt the rooms, but access still needs to be made from the central corridor.

Historically there have been some modifications of this type in the facility. There are no moveable partitions or inter-connecting doors between classrooms to support alternative organizational strategies such as team teaching.

The multi-story building with split level access creates other difficulties for flexibility and adaptability. The interior of the building is not currently compliant with

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75 ibid.
contemporary accessibility requirements; ADA is met through exterior routes which is a less than desirable solution in a northern rainforest climate. The upper floor of the school has functional limitations due to code restrictions that require the separation of younger and older children in stairways to present trampling in the event of an emergency. This is an inherent design problem with the structure that would be very costly to remedy.

The basement has had many uses over the years, with the north end starting out as a multi-purpose space, which later became a library, and is now used for district offices since modern codes restrict its use for classroom due to exiting requirements. The mid-section of the basement houses an indoor rifle range that has been closed since 199 due to lead contamination and gun control issues in schools. The south end provides two temporary classrooms for the Montessori program, since their original space in an adjacent building is currently being used for high school classes due to an extensive remodel of Juneau Douglas High School.

The Harborview facility was not designed with expansion in mind, except that the gymnasium was constructed under a separate phase. Originally, it had 10 classrooms for a student capacity of approximately 250. The building’s core spaces (performance stage, offices, nursing, etc.) have been stressed as the student population has grown to the current level of 370. The office is undersized, the staff workroom is small, the library is now located in an adjacent building, and there is insufficient parking for staff, let alone visitors. The school does not have a welcoming entry and there is no central gathering/orientation area such as a commons. Modifications to address these shortcomings would be very costly and disruptive to the existing school.

The effects of a crowded school are difficult to quantify, but are certainly felt by staff and students.
Kids need freedom to make their physical space their own. They need to have a physical space that provides flexibility and multiple use. My teaching style means that multiple things are going on. My teaching suffered in the small space that I was assigned to earlier this year. Kids were too tight. I could see it in their shoulders. They need room around their heads to think.\textsuperscript{76}

\textsuperscript{76} ibid.
6.2  JUNEAU MONTESSORI ELEMENTARY CASE STUDY.

6.2.1 Principle #1: The Learning Environment should enhance teaching and learning and accommodate the needs of all learners.

People.

The Montessori program is “self-selecting” in that families request placement in the program, rather than being assigned to it. Placement typically occurs at the first grade level with enrollment preference given to children who have attended privately operated Montessori pre-school. Once enrolled, a child stays with the program throughout his or her six elementary years. There are a limited number of openings for new students above first grade as families move away or leave the program. A thorough enrollment process is used for children entering the program. It includes an application, observation at the school, a parent meeting, and sometimes a visit by the child in the classroom. A lottery is held when the number of applicants exceeds the spaces available. Since it is a district-wide program, the location of a child’s residence is not a factor in attending, however school bus transportation is not provided to children outside of the Harborview attendance area. The detailed enrollment process is designed to inform families of the pedagogical and functional aspects of Juneau’s Montessori elementary school.

Each classroom balances gender and age to create a diverse, yet balanced classroom. The balance is based on pedagogical beliefs that children should be truly mixed in the classroom community, rather than letting one type (age, gender, ethnicity, socio-economic status, etc.) dominate the group. This is especially important in a program where the children stay enrolled for multiple years because the class make-up does not significantly change.
Adults are thoroughly trained in the pedagogy. Montessori teacher training programs vary, but the majority of authentic programs result in a post-graduate education degree. The Montessori approach is significantly different from most higher education teacher training courses. The teacher is trained as an observer, coach, and mentor with a fundamental response toward each individual child’s needs being met within the philosophical framework of the Montessori Method. They are trained to see interdependencies between the child, the adult, and the environment. The teacher’s primary role is to follow the child’s own natural educational path by removing the obstacles to his or her learning that are unknowingly placed in the way by adults. The teacher is seen as an equal to the child (for example, teachers are often referred to informally by their first names) to help children feel they have the same status as the adults.

The Juneau Montessori Elementary Program currently has a total of four Montessori trained adults. Two of these function as primary classroom teachers, a third provides music, Physical Education, and library instruction to the children, and the fourth assists in the lower elementary classroom as part of a required practicum for the state teaching certificate. There are also assistants who work with children with special needs for designated portions of the day. There is a conscious effort for the adults not to dominate the environment by their presence. For example, the PE/music teacher works with the children during the scheduled planning period for the regular classroom teacher. Having four Montessori trained adults allows the two regular classroom teachers to participate in professional training, or have approved leave, while having a substitute teacher who can provide continuity to the program. One of the regular teachers is an
assistant high school soccer coach so during the spring soccer season he travels with the team, leaving his Montessori classroom in the capable hands of his trained assistant.

**Pedagogy.**

Montessori education builds upon the idea of naturally occurring developmental planes, each plane being unique to a physiological, psychological, and spiritual stage of human life that occurs across cultures. The ideas are fully developed into a methodology that incorporates a wide variety of integrated curricula. At the elementary level, the curricular focus is referred to as “cosmic education” because children at this stage of development need all of the great things of the universe as their “textbook” for learning.⁷⁷

Accommodating the needs of all learners is fundamental to the Montessori approach. The thing that makes it unique to traditional public school approaches, however, is that the diversity of learners is captured under a single philosophical approach. The Montessori Method is deep and broad and incorporates many of the contemporary labels in education such as phonetic reading, whole language/math, constructivism, and cognitively guided instruction (CGI). Perhaps Montessori teacher Rick Trostel sums it up best,

> Whatever you have heard, whatever preconceived ideas you have about Montessori are probably true. It is unstructured allowing children to move freely and choose their work. True. It is very rigid, prescribing what children can and can’t do. Also true. It is the paradox of these seeming opposites that makes

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Montessori a complex approach that meets the complexity of human development.\textsuperscript{78}

The Juneau Montessori Elementary program is clear in its adoption of this pedagogy. Teachers are fully trained in the method through rigorous post-graduate studies that are certified by the Association Montessori Internationale (AMI). Three of the four teachers have Master’s degrees in education which were achieved through their study in Montessori. The teachers share and demonstrate the pedagogy in numerous ways: through information given to parents and the general public, participation in conferences and workshops, and outreaching to other teachers throughout the community and state of Alaska.

**Physical Environment.**

Montessori education demonstrates significant understanding of the role of the physical environment in supporting and enhancing teaching and learning. The “prepared environment” as it is called, reflects the needs of the child for specific developmental planes. For 6-12 yr. olds, the entire world is part of the classrooms; “cosmic education” sends child out to discover. Thus, the walls within the classroom provide only a piece of the overall physical environment. As such, it is arranged to support and encourage the child’s experience. Open shelving that is accessible to students at all times is used to house and display objects (natural and human-made) that exemplify the curriculum. Specially designed Montessori materials are the basis of the pedagogical approach,

\textsuperscript{78} Author interview with Richard Trostel, Montessori teacher, April 21, 2003, Juneau, Alaska.
supplemented by a wide variety of books and objects that are also used in lieu of traditional textbooks.

The teacher is charged with preparing the environment to meet children’s needs. “Both the teacher and the environment must strike the imagination of the child. It is my responsibility to constantly consider what I am doing with my approach and the classroom itself to inform and instruct each child.” The teacher creates connections for children between the indoor classroom environment and the natural environment. These connections incorporate objects from nature (shells, rocks, bones, feathers, etc.) as well as psychological and spiritual connections to other people and cultures (antique glass bottle, arrowhead, African drum). Trostel likens the classroom to an irresistible natural history museum in which the teacher is the curator.

The Montessori physical environment looks and feels different than most other elementary classrooms. Various sizes of tables and chairs (to respond to the multiple ages of children) are used in lieu of desks. Some are grouped together and some are isolated for individual work. Short table trays called “ckowkies” (an East Indian word meaning small table) provide work surfaces for children who choose to sit on the floor. The uniform florescent lighting system is interrupted with incandescent task lamps and twinkle lights. Throw rugs are used to define zones in the classroom, such as the large rug in the upper elementary classroom that defines the group gathering area. Smaller rugs (mats) are used by children for individual work on the floor. They roll out a mat before starting their work, and while the work is underway other children respect the mat as meaning that work is in progress so “do not disturb.”

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80 Ibid.
The physical environment encourages free movement and children are allowed to manipulate the environment, primarily through furniture movement. They can be seen working on the floor, at tables, or out in the hallway. They may be cuddling with a soft pillow in a getaway corner reading a book, or sitting with several other students at a table sharing ideas about the development of a group project. Children choose when to take a break, so one might also observe a child eating snack with a friend or out in the hallway skipping rope to “let off steam.”

When a Montessori class is “normalized” (a Montessori term that, in essence, means everything is going smoothly) the adults are hard to notice. The teacher can be found working quietly on the floor with an individual child or doing a lesson with a small group. In lieu of the traditional teaching station at the front of the room, instruction occurs throughout the classroom in many different locations, by both the teacher and the children themselves. “The buzz of activity demonstrates that children are self-directed and engaged; their needs are being met.”

Given the importance of the physical environment in Montessori education, the current classroom location has created a significant challenge to teachers and the program. At 930 s.f. for lower elementary and 800 s.f. for upper elementary, the classrooms are small by district standards, which allow approximately 1100 s.f. for lower elementary programs and 1000 s.f. for upper elementary. Space guidelines allow additional square footage for 6th grade; space is calculated as part of middle school at 125 s.f. per student.

81 ibid.
It is very difficult to make the Montessori approach work in a small space. The materials on the shelves are not decoration – they are our learning materials. Being able to freely move around the classroom and have space to lay out work is critical. Children are with one another for many uninterrupted hours per day and need basic ‘elbow room’ to maintain healthy relationships and interact with each others’ work as needs and interests dictate.  

The quality of the basement space also makes the physical learning environment challenging. It has very little natural light, only small opaque windows in each classroom located nearly 7 ft. above the finish floor. The ceilings are low with exposed plumbing and electrical lines, and the basement is isolated from other important functions of the school (office, library, toilets, other classrooms). Electrical power is limited, including data cabling in the classrooms which restricts the way that the classroom can be arranged. Also, because the classrooms were established for a temporary two-year time period, there is little support for installing casework or making costly modifications to electrical or plumbing.

The environment is the third teacher for Montessori students (the other two being the adult and the child). Because we are a small program and not fully understood by school administrators we tend to be given a low priority for our space needs.

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82 ibid.
83 ibid.
When displacement became necessary due to construction activities at the high school, Montessori parents and staff had to argue and plead with school administrators to maintain a location at Harborview School. They had finally, after some rough beginning years, established a positive working relationship with other staff and programs at Harborview (this is an ongoing challenge for any ‘school within a school’ program). Unfortunately, by the end of the debate on where to temporarily house the Montessori program, the parents and teachers felt relieved to have even a dark basement for their classrooms!

6.2.3 Principle #3: The Learning Environment Should Serve as Center of the Community.

People.

Juneau Montessori Elementary recognizes several types of communities around which the program evolves. On the micro level is the community of teachers, children, and their families, who are enrolled in the program. The make-up of the Montessori program closely reflects the ethnic and socio-economic diversity of the City & Borough of Juneau. 75% of the children are Caucasian and 25% are ethnic minorities including Alaska Native, Asian, Hispanic, and African-American. This community is analogous to a family. Close, long-lasting friendships between children and families have been nurtured through the Montessori program. An unfortunate side-effect has resulted from this, in that labels of elitism have been given to the program by uninformed outsiders who superficially view the closeness of families and teachers as inappropriate to a public institution or robbing the public system of all the best families.
It’s hard for some people to be outsiders looking in. We try to be very open and inclusive, while at the same time maintaining the integrity of who we are. Some people who don’t understand us think we threaten the stability of the overall public system by trying to be something different.\textsuperscript{84}

The Southeast Alaska Friends of Montessori (SEAFOM) was formed in 1993 to provide financial and logistical support in the development and expansion of Montessori programs in Juneau and Southeast Alaska. Since 1993, SEAFOM has contributed thousands of hours and more than $200,000 toward this end. This organization provides a second level of community to the families at Harborview. It hosts activities and fund raisers that raise public awareness of Montessori, facilitates the partnership of Montessori in the Juneau School District, provides teacher training, and makes networking connections between the Montessori pre-school and elementary schools. This group is currently forming a public Montessori Adolescent Program that will open in August, 2003.

Montessori children are an active part of the human resource base of the greater Juneau community. Empowered by the adults that support them, Montessori children have participated in community rallies, testified at state legislative hearings, and volunteered for numerous community projects without the requirement of a teacher-prescribed school assignment. Participation in the community in which they live is both an opportunity and a responsibility that Montessori children learn.

Juneau Montessori Elementary’s macro community consists of the world. Dr. Montessori’s work began in Italy in the early 20\textsuperscript{th} century, and over the course of a

\textsuperscript{84} ibid.
century has spread to every continent. Although an exact number is not known, it is estimated that there are more than 200 public Montessori elementary schools in the United States and many more private ones. Children in Juneau’s program make connections to other Montessori schools and to people of the world as a matter of course. The curricula is rich in multi-cultural studies. Juneau’s program celebrates diversity through the integrated study of geography, language, history, and cultural traditions. Each winter the children study a variety of holiday traditions including Kwanzaa, Korean New Year, Hannakuh, Basque Winter holiday, Chinese New Year, etc. The research and study of the seasonal holidays of other cultures happens alongside the predominant Christian holiday of Christmas that occurs for most of the children. This gives them a larger global perspective of their beliefs in context with those of other people throughout the world.

Juneau’s elementary Montessori learning environment is, essentially, a social organization that defines, and is defined by people who construct community.

A sense of community is constructed by engaging one family at a time. It’s not just the child who we are reaching, and it’s not just to raise funds. This is collaborative family work that grows from an attitude of ‘I want to help; I want to be a part of this’ rather than begging or nagging from the teacher.85

**Pedagogy.**

85 ibid.
“Education is a preparation for life.” Children in Juneau’s Montessori elementary program are preparing for their lives as members of multiple communities (local, regional, world). They are learning to make ongoing connections through their studies. The assignment of homework in the upper elementary classroom demonstrates the concept of being part of a community. Children have weekly homework assignments throughout the year, but the teacher has changed the traditional meaning of homework. Rather than taking work that is assigned at school home to complete, children bring experiences from their work at home to school. The assignment is to write an essay about that work (whatever it may be) each week, then share it with the group at school. The topics vary widely because there is an acceptance that work has many different meanings, from baking cookies to going on a walk with the dog. There are multiple pedagogical connections to this assignment. First, children learn that most work has a joyous aspect to it, especially when there is choice. Secondly, they are developing writing skills that are fundamental to literacy. Most importantly, they are sharing a part of themselves with classmates – bringing their home life to school.

Homework takes on a stronger connection to the local community when children choose a community service activity as a part of their homework. Once per month, one of the homework assignments must demonstrate the child’s participation in the community. The project can be done any time during the month and is totally the child’s choice (with endorsement from parents or mentors). A small sample of the numerous projects includes: helping assemble/serve “Meals on Wheels” to shut-ins, cooking/serving a meal at the homeless shelter with a church group, feeding birds/cleaning cages at the Raptor Rehabilitation Center, and talking/playing cards with elderly patients at the nursing

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86 Montessori, Maria, as presented by Christine Trostel during Author interview Feb. 4, 2003, Juneau, AK.
home. The children take a lot of pride in their active involvement in the community and enjoy sharing their stories with their peers. “The life lessons gained through homework are as essential as the math strategies the children learn in class.”

The Montessori elementary experience culminates in an in-depth research project for all of the sixth grade children on their family ancestry that exemplifies the concept of a world community of humans. The students spend the final eight weeks of the school year incorporating all they have learned through Montessori understanding their personal place and time. They use of the skills they have learned such as developing timelines, graphing characteristics, drawing maps, and displaying cultural artifacts. They may use audio or video recorders for interviews, use the internet to track down a deceased relative’s military experience, or travel to visit a place that has significance to their own past. Children choose their own definition of “family” and decide what strategies and tactics they will use to share their studies. This is a very rich experience for children, especially for those whose immediate families may not have traditional biological connections.

The ancestry project builds a sense of family for these kids that expands far beyond the time, place, and people they currently live with. It is the bridge between childhood and adolescence wherein, developmentally, children are beginning the search for self. It is very powerful.

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**Physical Environment.**

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87 Author interview with Christine Trostel, Montessori teacher, February 4, 2003, Juneau, Alaska
88 ibid.
Despite their poor location, teachers have worked diligently to make the basement classrooms contribute to a sense of community for the children and families in the program. The two rooms open to one another with two double sets of 4’-0” doors (16 ft. total) so that activities can flow from one room to the next as appropriate. The classrooms are used for parent meetings approximately once per month. Additionally, they are the venue for the annual cultural celebration and for parent education workshops to help families learn more about the Montessori Method. Approximately four large gathering events occur per year and usually include potluck dinners for the whole family. The current classrooms are too small for this function, but creativity in utilizing the hallway for the food line and eating picnic style on the floor has helped address the physical shortcomings. There is nearly 100% student/family attendance at every event.

The children perform music and plays several times during the school year. The year’s study culminates with a dramatic musical in which all of the children are cast. Both classrooms are converted into a theatre, including backstage and audience spaces. With input from the children, the teachers write the play and lyrics. The children, with help from a few parents, build the sets and props. This annual event celebrates the growth of each child and exemplifies the interdependencies between people, pedagogy, and the physical environment through the functioning of a community.

The outdoor tree grove is the site for an important annual event that begins the school year. On the first day of school families gather to celebrate an Alaskan version of a Russian tradition known as “Wisdom Day.” New friends and old meet and greet with all of the excitement and anxieties that the new school year brings. Many families from

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89 ibid.
the Montessori pre-school attend, as well. The gathering celebrates the opportunity that
school provides to learn. Teachers share a few inspiring words, everyone joins in the
traditional songs (some of which are introduced during the pre-school years), then hugs
are shared by children and parents as the oldest children in the class take the hands of the
youngest ones and proceed into the school. Parents, meanwhile, are wiping the tears
away!

6.2.3 **Principle #3: The Learning Environment should result from a planning and design
process that involves all stakeholders.**

**People.**

The Montessori elementary students hold weekly student meetings that are led by
students. The agenda for the weekly meeting is established during the week as students
identify topics that need to be shared with the group. These range from such things as
sharing ideas for class projects (such as a litter pick-up event) to discussions of what to
do about the increasing number of broken pencils. The facilitator is established by
rotation; every student will be a facilitator at least once during the school year. A time
limit is established for the meeting, although students can request that the time be
extended by the teacher if discussions warrant it.

The Montessori teachers hold periodic meetings (approximately monthly) to plan
group activities, provide pedagogical support and feedback to one another, and to
coordinate program logistics. Since they are a small staff, they use one another as
professional sounding boards to suggest strategies for difficult classroom issues. Since
they share the same philosophical base, their common language and understanding presents a collaborative, rather than competitive, setting for resolving problems.

The Montessori teachers also attend Harborview School staff meetings and are actively involved in staff training and special committees that work on school-wide issues. At the same time, they must participate in district-wide issues since the program is officially organized under the School Superintendent. The Montessori teachers carry somewhat of a double load of responsibility as a “school within a school” program. They are a part of Harborview Elementary, yet they are not. At times it creates tension and confusion over who the actual stakeholders are, especially when financial or logistical resources are at stake.

Parents in the Montessori Elementary program participate on two levels, as well. There are classroom and program activities that directly relate to their child(ren)’s enrollment. These include volunteering in the classroom, chaperoning outings, and attending school events. Two to three parents in each classroom drop in to join the children for lunch each day. The classrooms, especially upper elementary, have two to three projects (pie sale, flower sale, candle sale, etc.) each year to raise funds for outings. These events are typically led by parents, with child assistance in carrying them out.

Nearly every parent is also active in SEAFOM, raising funds and providing logistical support to maintain the elementary and pre-school (and upcoming adolescent) Montessori programs. SEAFOM has an annual paid membership of approximately 50, and additional people who participate on specific projects or issues but do not pay the $5 per year membership fee.

The teachers keep parents informed on both classroom and SEAFOM issues and activities through a weekly newsletter that goes home with the children and is sent via
e-mail to parents. In addition to functioning as a bulletin board of announcements, the newsletter shares discoveries the children have made during the week, and provides parents with ongoing insight to the daily happenings. It engages them and empowers them to be active stakeholders in their child’s education.

**Pedagogy.**

The primary stakeholders in the Montessori program are the children. “Ownership comes from meaningful work that is self-selected based on points of interest. Choosing work builds dependence on one’s self and one another.” Children are taught that their education is both an opportunity and a personal responsibility. Teachers reinforce them by empowering them through direct involvement. One example of this is the way that the teacher planned for the relocation of the classrooms to their current temporary location. Children were taken into the planning process including visiting the spaces during their previous use as offices and storage. They articulated their ideas for their new classrooms in graphic (2-D and 3-D) and written form. The teacher provided scaled 2-D furniture forms that they could arrange on their final floor plan or model. Some students performed surveys to determine what features their peers wanted in the new design. This planning activity provided ownership of the new classrooms from the very start and addressed potential anxieties about relocating to the basement space.

Special meetings are held with students and teachers to plan events such as the annual winter camp. Every aspect of the trip (transportation, food, activities, financial, etc.) is planned with extensive student involvement. This is an important part of the pedagogical focus that empowers children to own their own education. Teachers provide
support and guidance by reviewing the budget with students, confirming travel reservations, etc. and parents help with chaperoning.

Pedagogically, the challenge for Montessori is to involve all stakeholders, but not to “over-involve” them since it is essential to let children take the lead their own learning. “Sometimes it’s hard for adults to step back and let the kids take the lead. First, because they are caring and supportive, and secondly because we have so much fun – they want to be a part of it!” Trostel tries to identify who the stakeholders of various issues really are. When they are political or involve the administration of the whole program, parents are called to actively participate. Conversely, when it is a classroom issue then she works hard to let the children resolve it. For example, caring for the plants in the classroom is a student responsibility, and if plants don’t get watered they will eventually die. Occasionally an unhealthy looking plant will be seen on a shelf until a child takes responsibility for it and waters it or replaces it. The teacher does not nag about the plant watering chore, but this is likely to come up as an agenda item for a class meeting once the child has rescued it.

Physical Environment.

The current small size of the Montessori classrooms limits some collaboration efforts. Still, as discussed in the principle #3, Center of Community, the space accommodates a variety of meetings and events as best it can. Teachers are also very creative in working with limited resources. At the start of the school year, for example, they used the hallway to display the designs for the new classrooms. When students returned for a new year,
their work from the previous Spring greeted them and their families. This clearly indicated the empowerment of students as primary stakeholders.

6.2.4 Principle #4: The Learning Environment should provide for health, safety, and security.

People.

The Montessori elementary program utilizes the resources of Harborview School to support children’s physical, psychological, and emotional health and safety issues. Harborview has one full time counselor and a full time school nurse that serve the Montessori children as needed. All of the Montessori teachers have had basic training in First Aid/CPR.

The Montessori children and adults participate in the scheduled fire drills and escape plans with Harborview Elementary, and the teachers participate in district-wide training sessions on health and safety issues.92

Montessori teachers and families have built an active partnership through the education of the children that allows teachers to understand and be involved in a lot of different family issues. Teachers can help identify and diagnose problems before they escalate into potential harm. The families know one another, as well, because the children develop lasting friendships that extend beyond the school day. “Montessori helps me feel connected to all aspects of my sons’ development. I know that they are in a safe place, physically and emotionally, where they are understood.”93

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92 See case study on Dzantik’I Heeni Milddle School for further information on district wide health and safety issues.
93 Author interview with Tonia Kramp, Montessori parent, April 23, 2003 Juneau, Alaska
Pedagogy.

There is a pedagogical focus on health and safety in the Montessori program. It is called the “Rule of Respect” and teaches children to care for and respect themselves, for others, for the tools they work with, and for the natural and built environments. “This is the only ‘rule’ we have in our classroom. Each time the children try to make new rules, they find themselves already covered by this simple phrase that completely orders the health and safety of the society.”

There is a progressive conflict resolution plan used in the Montessori program that focuses responsibility for the conflict on the children involved. When confronted with a conflict a child knows that he or she can choose to: 1. ignore the behavior and walk away (this is exercising self disciplines), 2. speak assertively to the individual, but without anger in your heart (no retaliating words or actions), or 3. utilize the services of a peer arbiter (lower elementary children have this a rotating role, upper elementary students use peers who naturally rise to this role). The last resort for resolving conflict is to seek the assistance of an adult. The teacher will reinforce this progressive plan if called to help resolve an issue. “The reality is that very little serious conflict happens in a Montessori classroom. Through modeling, children are given skills to communicate and clear steps to go about solving problems. Of course teachers are always nearby should something escalate to a point of physical or emotional danger.”

Children receive recreational safety instruction as part of their Montessori physical education program. This includes bicycle safety and repair, cold weather protection, orienteering, and limited swimming skills. The PE program integrates with
other studies such as science and incorporates skills in team building and group
dynamics.

**Physical Environment.**

The Montessori classrooms are accessed off of a main school corridor, connecting to a
stairway that leads up to an exterior exit. The upper elementary classroom also has a
direct exit to the outside, and the lower elementary classroom has interior access to the
upper elementary space. Power outages are more challenging in the current classrooms
because of the limited amount of daylight, especially in the winter.

Dr. Montessori believed that learning environments should be fundamentally
beautiful to where they appeal beyond the five senses. They should not be decorated with
commercial items that adults think children like. Instead, they should be naturally
beautiful, appealing to the senses, and expressive of the children’s work. Furniture and
materials must always be in good condition and appropriate to the task they are used for.
Children learn how to properly carry a chair, for example, so it does not damage things or
hurt others as it is moved around. The classroom is to be a comfortable place for children
and adults.

Juneau’s Montessori classrooms often have fresh flowers on a table, have dusted
shelves that are organized sensibly, and display art work on the walls that is organized
like a gallery. At lunch time, children remove their food from their lunch boxes to their
place settings which include place-mat, plate, and appropriate utensils. The classroom
lights are lowered and each table has a burning candle to create a calm social ambiance
while children eat their meal and converse. Social graces are emphasized.

94 Author interview with Richard Trostel, Montessori teacher April 21, 2003 Juneau, Alaska
Children care for this environment in many ways. They first change shoes when entering the environment, replacing outdoor shoes with indoor ones. There are daily chores that rotationally change each week that include dusting, sweeping, vacuuming, caring for plants and pets, welcoming visitors, etc. Everyone has a job during lunch, either setting up or cleaning up and everyone participates in special cleaning chores such as the mid-year project of clearing out cubbies.

6.2.5 Principle #5: The Learning Environment should make effective use of all available resources.

People.

Montessori curriculum uses student-led research extensively. This means there are multiple teachers at all times – the child, his or her peers, the trained adult, parents, and community mentors. Children often choose their study topics, within a framework that the teacher has provided. The research builds from printed materials, electronic mediums, and direct personal experiences with others (interviews, surveys, etc.). It may include natural or cultural exhibits or original art work on the topic as well. The role of adults is to help students make the connections of their studies to the resources of the world. They are trained to be observers, coaches, and mentors, and are constantly balancing the need to actively step into the child’s activity with the need to step away to let the learning naturally unfold.

Work is assessed by using multiple strategies and resources, as well. Presenting work to others is common, with input and feedback from peers and adults (there are no

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95 Author interview with Christine Trostel, Montessori teacher, February 4, 2003, Juneau, Alaska
traditional grades in the Montessori program). Children receive “questions and compliments” from their peers during weekly homework sharing, and a panel of teachers from Harborview evaluates the 6th grade ancestry projects.

The Montessori teachers are evaluated by the Harborview principal as part of the district’s standard professional evaluation. Additionally, parents provide feedback to teachers through an annual survey. At the request of the Montessori teachers, the program has been periodically reviewed by peer teachers from other Montessori public school programs.

District policies at the elementary level make it difficult for children to be released from the building for “going out” (a Montessori term meaning field trip) trips. Parents must sign their child out of school for travels off campus if the classroom teacher is not attending the outing with the children (which of course he or she cannot do unless the entire class goes out).

**Pedagogy.**

The Montessori Method relies on extensive natural and human resources outside of the classroom to contribute to the child’s education. Diverse cultures and ideas are expressed through a global perspective that emphasizes the child’s life as a small but critical link to the rest of humankind.

Our approach embraces all of humanity – how people have expressed their needs throughout time. One of the Great Lessons is the ‘Fundamental Needs of Humans’ where we investigate the spiritual and material needs of humans across time and culture. We look at history as both vertical and horizontal, and utilize
broad and deep investigation into the resources and ingenuity that have brought human beings to where we are today. We help children feel gratitude for what has been done for them throughout time by many different human beings. And we help instill a sense of responsibility to create places for those who will come after us.\^96

The Montessori materials are the primary curricula that has been used virtually unchanged since they were designed by Dr. Montessori in the early 1900’s. The materials are of very high quality, beautifully constructed from hardwoods, dense plastics, and enameled metals. They are inviting to touch and are recognized by children and adults as being very special. A set of classroom materials typically lasts more than 20 years, making it significantly more durable than textbooks and without concern for becoming outdated.

The curriculum also relies on an extensive amount of natural and human-made objects. Artifacts from around the world are collected and donated by families or made by hand by teachers. There are many picture and reference books in the Montessori classroom that are used in children’s research, as well as a diverse collection of fictional and non-fictional literature. Games, puzzles, and musical instruments are also used for both lessons and recreation.

Consumable resources of the classroom such as paper, pencils, and glue are managed by the children in the upper elementary classroom through a “supply store.” At the start of the school year, each child receives a check book register with an account balance set by the teacher. When the child needs supplies, he or she “purchases” them

\^96 ibid.
from the banker who manages the store. The transactions help the children understand the concept of resource allocation. They become more aware of being wasteful and are more conscientious of conservation and recycling.

Physical Environment.

The classroom furniture invites the use of many types of educational resources. The open shelving makes materials attractive and immediately accessible to the children’s needs. Long before ergonomics were a recognized field, Dr. Montessori thoughtfully designed furniture and shelving that was suitable for children’s body sizes. The shelving and ckowkies in the Juneau Montessori Elementary classroom were constructed by parents. The tables and chairs were supplied by the school district. Unfortunately, they were retrieved from district storage so they are a mix of used furniture that are functionally adequate but are not aesthetically pleasing.

The children have access to computers (including internet access) and telephone in the classroom. The upper elementary students utilize the telephone and internet significantly more than the lower elementary students since their research is more mature and their independence is greater to allow “going out” trips. Adjacent to the telephone are the resources that children need to arrange outings without extensive help from adults, such as a telephone directory and bus schedules. Children have limited access to the copy and fax machines that are located in the Harborview School office.

The previous upper elementary Montessori classroom had a small room that illustrated how the physical environment can support project based learning which built on the idea of maximizing all available resources. The adjacent room was used extensively for special projects. One example was a project developed and executed by
three 6th grade children on the study of a prehistoric village of Skara Brae, north of Scotland. The children actively planned the project over several weeks, then collected materials to construct a scaled model of the village. This was a busy and messy effort. Having the project room allowed them to work with one another, teachers, and mentors without disrupting other efforts in the main classroom. At the same time, they were only an open door away from the teacher’s supervision. This space could have been significantly improved with a window between it and the main classroom.

Both the upper and lower elementary classrooms are set up for ongoing presentations to the full group of children. Peer evaluation is used extensively so a large group gathering is provided as a basic part of the interior classroom layout.

6.2.6 Principle #6: The Learning Environment should allow for flexibility and adaptability to changing needs.

People.

The Montessori learning environment is ordered by the trained adult and provides many opportunities for children to adapt it to their daily needs. This is primarily done through the child’s ability to choose their work, which occurs within a structured framework in accordance with their experiences and abilities. The teacher serves as a guide to those choices, monitoring each child’s progress with extensive written and mental notes.

Montessori teachers exercise significant flexibility in understanding how the physical environment and the teacher’s techniques must be adapted to meet children’s needs. He or she must constantly be considering how to modify and adapt so that the expected child behaviors can result. There is ongoing personal constructive critique
among Montessori teachers that connects the educational philosophy with actual classroom practice.

**Pedagogy.**

Montessori differs from other approaches in the consideration of pedagogical flexibility. The method has proven itself from inception to be highly effective in educating children and has not been significantly altered. However, the value of such education is measured differently. Montessori education does not typically support standardized testing. Montessorians believe that the success of a child’s education is found in other, less measurable elements such as high self esteem, self confidence, and a deep appreciation for the diversity of human beings. The product of education, that is, the ability/skills for a child to read and do math, are considered the by-products of the Montessori approach.

“We teach children, not subjects. Children are learning how to learn and loving what they learn.”

Montessori teachers are committed to their pedagogical training and participate in professional conferences and “refresher” training courses to actively maintain their unique philosophical base. “Teaching Montessori is very demanding, especially in the public sector. We worry about what we call ‘the drift,’ which is falling away from our philosophical base and training. A school within a school is especially vulnerable to ‘the drift.’” These connections are also part of the life-long learning that Montessori teachers take on themselves, so they can model such values to their children.

**Physical Environment.**
The Montessori classrooms have several features that encourage flexibility and adaptation of the physical environment. The first is the double set of 4 ft. doors that can partially or fully convert the two spaces to one.

When it was clear that we had to move to the basement, we made sure that the two sets of double doors would be installed. This was actually an improvement over our previous space that could not be converted. It is very important to be able to adapt the classrooms to multiple uses.\textsuperscript{98}

The kitchen that is accessed from both Montessori classrooms demonstrates flexibility for a variety of program needs. It is used for dish washing and cooking projects, but it also functions as a science lab. A plant shelf with grow-lights houses botany studies, and a variety of projects that need water are accomplished on the long countertops in the kitchen.

A serious limitation of the current Montessori classrooms is the lack of physical space for expansion capability. The program expands from the base upwards, meaning that it increases by adding more students in the early years (typically first and second grade) that then move up through the 6\textsuperscript{th} grade. The small rooms will make it very difficult to add new students next school year. This chokes the growth of the program that can lead to instability in the upper levels, especially for the adolescent program that is scheduled to begin next school year. As with so many other things in Montessori, no single element (even something as seemingly simple as the size of a classroom) can be

\textsuperscript{97} ibid.  
\textsuperscript{98} ibid.
considered in isolation. Teachers and parents made numerous attempts to convey their concerns about classroom size and expansion to school officials when temporary arrangements were being made for the current space. Despite their support for slow growth of the program, placing the program in the current rooms did not reflect a full understanding of the problem. “I’m not sure how we are going to have the expected 30 children in the lower (elementary) classroom next year. Somehow, we will figure it out.” Resourcefulness has been a key to making the Montessori elementary program work.

\[99\] ibid.
6.3 DZANTIK'I HEENI MIDDLE SCHOOL CASE STUDY.

6.3.1 Principle #1: The Learning Environment should enhance teaching and learning and accommodate the needs of all learners.

**People.**
Students and teachers at DZ are organized around the middle school “house” model. The organizational idea in this model is to break down the overall size of the school into smaller units where students and staff can get to know one another better. DZ was originally designed for 3 houses, but now has 4 houses: Cedar, Hemlock, Alder, and Spruce. The original division of 3 had less than 200 students per house when the new school opened in 1994. However, as the school filled to its current capacity of approximately 700, the house size became too large to effectively implement the pedagogical approach, so the school reorganized into 4 houses, each with approximately 175 students. All students are given a “home base” teacher who oversees the child’s overall progress and coordinates primary contact with his or her family and other school logistics. There are typically 28-30 children in each home base classroom.

Each house consists of 6 to 8 teachers in team groups of 2. Students remain in the same house for all of the years that they attend DZ. Movement between houses is very rare, and is discouraged by the principal. The regular district elementary school program brings in students at the 6th grade, however the Montessori program and the Charter School program enter children at the 7th grade level. Change rate between houses is very low. 6th grade is separated in two of the houses; all three grade levels are integrated in two of the houses.

Parents may request that their child be placed in a specific house when they enroll at DZ (usually 6th grade) however, many placement requests are denied. Many parents
make requests based on where their child’s friends are placed or the reputation of a teacher that may or may not be realistic. The principal and staff must balance each house so it represents the whole school while also trying to be attentive to the learning styles of each child. Parents who make requests based on pedagogical preferences rather than specific teachers have more success in having their request approved. The goal at DZ is to have “each house be a microcosm of the overall district (community) population in ethnicity and socio-economic background.”

This is difficult at times because the school’s attendance area is determined by location of student residence. DZ’s boundaries include both the wealthiest and the poorest neighborhoods in the community. Statistically, this makes the population appear to be “average” but there are other issues that emerge because of this make-up.

There is very little staff turn-over at the school. Seven of the current teachers have worked at Dzantik’i Heeni since it opened in 1994. Most of these teachers have worked in the Juneau School District for more than 20 years. 18 Teachers have taught at this school for more than five years.

**Pedagogy.**
The house model was adopted by the Juneau School District in the early 1980’s. It provides a 4-1/2 hour block of time each day that teachers spend in “core curriculum” which includes language arts, math, science, and social studies. The district standards are the basis for all of the curricula used at Dzantik’i Heeni, but there is significant variation in details and implementation of the curricula. Method and approach vary in each house, and to some extent between the teams of teachers within the houses. Different teachers

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100 Author interview with Les Morse, Dzantik’i Heeni Principal, February 14, 2003, Juneau, Alaska.
overlay different lenses on the standards and how they can best be applied. As the school’s primary leader, Morse works hard to honor the expertise that teachers have in knowing their kids’ needs best. He works to break down the bureaucracy and empowers teachers to go develop their ideas. “It’s possible to make things happen better on the house level – 8 people can build consensus (whereas a whole staff may not be able to).”

There is extensive use of project based learning throughout the school. Most of the teachers at Dzantik’i Heeni believe that active doing is the best type of learning for this age group. They use projects for learning in different ways. Some identify a project that incorporates several areas of study and then frame the specific requirements for the students. Other teaching teams develop a standard of assessment that allows the students to then develop a project around. This variation occurs according to the specific interests and beliefs of the staff, and to some extent the abilities of the specific children they work with.

House loyalty among teachers is very high. This has both positive and negative aspects. Teachers find “team mates” and get really excited about collaborating on projects, curricula, teaching methods, etc. As a result of the dedication and friendship that builds between teachers, the house starts to take on a specific flavor. The negative aspect of this is that people (teachers, parents and children) can view this competitively which can result in a “my house is better than your house” attitude. When Dzantik’i Heeni first opened most teachers used their in-service training to develop specific curricula. In-service training now occurs across houses; this builds camaraderie throughout the school between academic teachers and exploratory teachers, and between houses.

101 Ibid.
Physical Environment.
The previous building (Marie Drake Middle School) that housed the Dzantik’i Heeni school program was a significant limitation in fully implementing the middle school house model prior to 1994. The older two-story school has small classrooms that are physically separated from one another along narrow hallways. There are no shared group areas and concrete walls prevent openings from being easily made between rooms. Adolescent students had no social gathering areas (indoor or outdoor) since the site was very small and had no outdoor spaces for school use or parking (the building footprint is approximately 28,000 s.f on a site that is a little more than 1 acre).

The Dzantik’i Heeni physical environment “has a lot to do with making the house model work.”102 Academic classrooms are located on the second floor of the building. There are many moveable walls between classrooms (see floor plan in appendix) that are used at least occasionally by most teachers and extensively used by others. There is also variety in the shape and size of classrooms. The houses shift locations in the school building every few years because of variations in the amount of storage and the different of views to the outside landscapes (approximately one-half of the school has a sweeping view of the ocean channel and mountains while the other half has an undeveloped forest within 50 feet of the building). It is challenging to move teams every few years, but moving around contributes toward an overall sense of belonging to the school. It prevents teachers from putting down roots down in a specific location, which can result in less sensitivity to the total school’s needs.

102 ibid.
The school is furnished with minimal built-in casework. Instead, there are moveable low cabinets and open shelf units on wheels that can be arranged as furniture. Their low (30”) height allows the tops to be used as tables for layout or special materials for projects. Tables and chairs are used extensively by two of the houses; the other two use desk units that have integral seats. Some teachers group the desks together; a few were observed using traditional rows with a “front of room” orientation.

6.3.2 Principle #2: The Learning Environment Should Serve as Center of the Community.

People.

Dzantik’i Heeni has many families and community members involved in a variety of events. The greatest involvement is at the house level, between parents and teachers. Parents are very supportive of programs and projects at the house levels. Two of the houses have more than 50% of the parents actively participate. Additionally, each house raises about $6,000 per year which is primarily used to fund projects or assist students who cannot afford to participate in house-wide programs or activities.

The Parent-Teacher Organization (PTO) at DZ Middle School has approximately 85 active (dues-paying) members. Other people help with specific events when asked but do not pay the $5 per year membership fee. The PTO’s primary mission is to raise funds to support literacy. Fund raising efforts such as Scholastic book sales and See’s candy sales allow enrichment literacy materials to be purchased, primarily for the school library. The PTO holds monthly business meetings with 5-6 people typically in attendance. Email and telephone calls are the primary communication methods used to

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103 Author interview with Sherri Wolfe, Dzantik’i Heeni parent, March 16, 2003 Juneau, Alaska.
gain participation for various events. During the 2002-2003 school year, the PTO has sponsored a “Visiting Author” event and a “Community Story Tellers” event. Both of these free public events brought many people from the greater Juneau community into the school.

We don’t really rely on the outside community to provide direct dollars (to DZ). We may need to do more of this to maintain things like the breakfast program whose grant is expiring. The parents are very generous in giving funding, food, and logistics help when asked. The school maintains a scholarship program that is primarily built from parent donations. This assures that all students can participate in programs like the annual skiing trips even if their families cannot afford it. 104

Pedagogy.

Much of the pedagogy at Dzantik’i Heeni is based on the concept that the school is the center of community. Teachers at the school believe that projects invite involvement from the community while also sending children out into the community. Project based curricula supports the notion that learning is more thorough, more deeply understood when it has relevance to the lives of students. “It’s more than a 2-way street, it’s actually an intersection. Teachers and administrators are constantly looking for, and making connections so children and their families can understand the richness of their place – all it has to offer – and realize that they are an important part of the place and have something to give back.” 105 Every child at Dzantik’i Heeni participates in some type of project based learning experience. Two of the houses use project learning extensively.

104 Author interview with Les Morse, Dzantik’i Heeni Principal, February 14, 2003 Juneau, Alaska.
105 Ibid.
One of the fundamental premises of project learning is that it is reality-based so connections to the community are often made with people in a variety of careers.

Students are encouraged to think about ways they can contribute to the greater community in self-sustaining ways, rather than being dependent on the outside community providing financial contributions. One example of this is a group of children, parents, and teachers who are currently cleaning and repairing abandoned bicycles donated from the police department. The kids participate in a bike clinic and learn the basics of safety and repair. The local hospital has donated helmets to give to children who do not have one, and the bicycles, once cleaned and repaired, are given away to kids who cannot afford to purchase a bike.

Children at Dzantik’i Heeni participate in many programs and events that build on the pedagogical connections to the community. Discovery Southeast, a non-profit environmental education organization interfaces with Dzantik’i Heeni students and teachers extensively. They provide assistance with science projects, involve children in stream protection efforts, and provide mentoring to students with interests in environmental science. Students and the greater community are also connected through the Alaska native cultural and heritage studies program. In January, 2003 for example, a traditional Tlingit Ku.eex, or potlatch was held at the school as the culminating event after a semester long study of a controversial Alaskan issue: Native subsistence rights. The “White Bear Project” required extensive teamwork and collaboration throughout the study of the very complex and emotionally charged topic of the rights of people who desire a traditional way of life. The Ku.eex brought together 250 people: children, teachers, community leaders, and ordinary citizens in this most memorable celebration.
that included food, gifts, singing, dancing, and ceremony. The ceremonial highlight was the adoption of three DZ teachers into the Teikweidi tribe of the Tlingit people.

There is a recycling program currently developing within the school which will invite the community to drop off recycle-ables. “It’s more than a fund raising event – it’s the nurturing and caring for the community.”

Two of the academic houses at Dzantik’i Heeni require all of their 8th grade students to participate in ROPES (Right Of Passage ExpereinceS). At the start of the school year each child chooses as subject of personal interest which offers challenges to his or her intellectual, physical, and emotional/spiritual growth. They must find a mentor in the community who can help them study their topic and coach them toward their goals. In the spring, during the final week of school, students present their project to a panel of community judges who assess their passage into adulthood.

One of the houses that does not participate in ROPES instead requires each child to complete a year long community service project of their choice. It is not as formalized as ROPES, but it is based on the same general goal: to engage students in reality based education that has personal relevance and makes connections to his or her community.

**Physical Environment.**

Dzantik’i Heeni Middle School is constructed on a filled hillside wetland and is surrounded by several hundred acres of city-owned forest. An anadromous stream sets the boundary at the south, eagle nesting trees edge the west side, and old growth spruce forest is found at the northeast perimeter of the site. Because the school site is environmentally sensitive and was very costly to develop, the original development for

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the building, parking, and one small play field was limited to less than 10 acres. In 1997 a Master Plan was developed that identified school needs for an area of approximately 100 acres around the school. The focus of this plan was to provide educational and recreational opportunities for the school and the community that were consistent with the pedagogical directions at Dzantik’i Heeni. The master plan was developed to support natural history, cultural heritage, and environmental studies using the middle school model. This is manifesting itself in the development of a trail system around the school with interpretative landmarks and a nearby cultural/environmental learning center.

The school was specifically designed to accommodate a multitude of community uses during non-school hours. These include community sports leagues, meetings, religious services, performances, and many special events. The school has been used for local election central headquarters, a Catholic bishop’s memorial service, special summer day-camps, youth symphony rehearsals and performances, and regional basketball tournaments. Requests for using school spaces are managed by the Juneau Community Schools office. Aside from the high school, DZ is the most popularly requested facility for meetings and special events. The Commons Area is especially popular with its central location at the front of the school, its flexible open space and comfortable, inviting aesthetics.

For the past two school years, the school day has extended with many activities and educational programs for children due to funding from the “21st Century Learning Grants.” This has allowed the building to open with at 7:00 am with breakfast snack program, social gathering, and basketball in the gymnasium. After school hours, snacks and transportation are provided to students as they participate in extensive clubs,

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107 Author interview with Les Morse, Dzantik’i Heeni Principal, February 14, 2003 Juneau, Alaska.
enrichment classes, and social opportunities until 5:00pm; these have also been funded through the federal grant. This has been a very effective program, extending the school day so that kids have a healthy and safe place to engage in activities and socialize.

6.3.3 Principle #3: The Learning Environment should result from a planning and design process that involves all stakeholders.

People.

Dzantik’i Heeni Principal Les Morse values interactions with his staff, parents, and students, demonstrating his belief that everyone has something positive to contribute to the school. Morse schedules ½ hour weekly staff meetings for the purpose of interactive, collaborative discussions on important school issues. However, he is very protective of staff’s time and often cancels the weekly meeting if there is not a specific reason to meet with everyone face-to-face. His primary tool for one-way communication is e-mail. Morse sends out one e-mail per week to cover general announcements, reminders, etc.

Parents participate in school decision making primarily through the Site Council, which is an elected body of parents and teachers (and one student) empowered by School Board policy to make many financial and operational decisions. The Dzantik’i Heeni Site Council meets monthly and tends to address broader policy issues that may affect Dzantik’i Heeni’s interactions with local or state school boards. Morse notes that Site Councils at Juneau’s schools vary with the leadership style of the principal, as well as the
interests of parents and teachers. The Dzantik’i Heeni Site Council’s bylaws encourage multiple years of service (no term limits) to maintain a long term, big picture view.

The Dzantik’i Heeni Student Council provides a forum for student participation and collaborative in decision making. All three grade levels are represented, with each home base providing a member to the council. The weekly meeting, which is regularly scheduled before school for approximately ½ hour, is facilitated by a teacher. The council plans two main events during the year: Spirit Week Activities and the 8th Grade Dance. They organize fund raising events such as “Candy Grams” at Valentine’s Day and “Weekenders” which are after-school parties held approximately monthly, and they solicit donations from community businesses to raise funds for the events. They sometimes take on special projects like expanding the school’s recycling program. The Student Council interacts with teachers, administrators, parents, and community members in helping make the school a collaborative and participatory organization.

A number of social and service clubs also exist at the school and involve a wide variety of children, teachers, and parents. A Character Building program and a Culture Club emphasize and celebrate diversity. Before and after school activities incorporate a wide variety of adolescent interests including art, technology, jazz band, and board games. The Dzantik’i Heeni sports program maintains a “no cuts” policies as much as possible, allowing the maximum number of students to participate in competitive sports without considering their individual abilities.

Pedagogy.

109 Author interview with Les Morse, Dzantik’i Heeni Principal, February 14, 2003 Juneau, Alaska.
Morse’s management style is based on the idea that “the best decisions are made closest to the kids.”\textsuperscript{111} He relies on the house model that empowers teachers to collaborate with one another to make the decisions that they feel are best for their students. The academic house teachers meet regularly, often 2-3 times per week. They meet more often as teams than as an entire house. Each teacher is provided with 1.5 hours of planning time per day in their employment contract. Both house-wide and team meetings are collaborative in nature. Teachers use this planning time to design new projects, discuss ways to improve previous projects, or identify specific curricula to meet the district-wide standards.

“In-service days” (scheduled calendar days without student attendance) occur four times per year and are used at Dzantik’i Heeni to “cross pollinate between the houses and academic teams.”\textsuperscript{112} Teachers share their ideas and experiences by presenting and discussing with teachers from other groupings. Special collaboration efforts such as “6\textsuperscript{th} grade math release day” (all 6\textsuperscript{th} grade math teachers meet for a full school day to address specific curriculum issues) and Teachers as Friends group (breakfast meetings between teachers twice per month to constructively critique and provide feedback) also help to empower teachers to share in important decision making. The goal is to “reduce teacher isolation, build trust and build a culture throughout the school.”\textsuperscript{113} In this way, teachers become actively involved in their school and collaborative decision making becomes spontaneous.

\textbf{Physical Environment.}

\textsuperscript{111} Author interview with Les Morse, Dzantik’i Principal, February 14, 2003 Juneau, Alaska
\textsuperscript{112} ibid.
\textsuperscript{113} ibid.
The school facility provides several different types of spaces that can be used for meetings and activities that encourage participation from all stakeholders. The media center is used for many meetings including regular staff meetings and Site Council. The furniture in the media center is aesthetically and ergonomically comfortable. Tables can be easily arranged to accommodate a variety of seating arrangements. The fabric covered wood framed chairs have a “tip back” feature that allows a person to slightly recline. The school also has a small conference room located directly adjacent to the Commons and the main office. This can be used for small groups to meet and collaborate.

The school does not have dedicated planning areas, so teachers typically gather in classrooms to plan activities and share ideas. Their workroom is somewhat remote from the classrooms so casual interactions are difficult. Teachers rely extensively on the use of e-mail with one another to coordinate meetings and communicate student issues.

6.3.4 Principle #4: The Learning Environment should provide for health, safety, and security.

People.

Dzantik’i Heeni utilizes the expertise of several different kinds of professionals to address a variety of physical, psychological, and emotional health and safety issues at the school. The school has one full time counselor and a full time school nurse. A police officer is also assigned to the school, to work with kids who have specific concerns and to generally emphasize personal safety for everyone. “The most important safety thing we can do for our students is get to know them. For example, if parents are not able to
attend student conferences, our teachers will contact the family and make arrangements to meet at the parent’s work place or at their home.”¹¹⁴

Staff and administration at Dzantik’i Heeni comply with all federal, state, and local laws regarding health and safety. The Drug Free Workplace Act of 1988 requires that teachers maintain “drug free” personal health as a condition of employment, and the Juneau School District provides an ongoing drug awareness program.

The District is required by state statute to provide information and training to all employees on child abuse, F.A.S. (Fetal Alcohol Syndrome), blood borne pathogens, drug-free workplace, and gender equity and sexual harassment. Through district level designated in-service days and building designated days, all staff participate in on-going education related to goals and priorities.¹¹⁵

Dzantik’i Heeni holds monthly fire drills, practices escape plans with students and staff, and has had procedures in place for many years to respond effectively to power outages and earthquakes. The staff handbook describes these in detail, and staff at the school periodically practices drills and procedures.

Hall monitoring is done by all of the staff with the focus being to deter all types of violence before it occurs. Teachers are encouraged by the administration to have open eyes toward all students.

¹¹⁴ ibid.
¹¹⁵ JSD staff handbook, Handbook http://www.jsd.k12.ak.us/district/jsd_info/staff_handbook
Field trips off campus require authorization from parents in accordance with district policy. Most children take 5-6 off-campus school trips per year. These are typically for special civic or cultural events in the community such as the Olympic Torch Relay, the Juneau Symphony, or visiting speakers through organizations such as Rotary. Additional outings are made by children who are studying community issues, such as a trip to the legislature to watch the state Senate in session, or visiting the local police station to learn how suspected criminals are handled. Transportation for large group field trips is typically provided by commercial vehicles such as tour buses who provide their services at free or reduced costs. Small groups of students or individuals are typically transported by private vehicle, either by a teacher, parent, or community mentor.

Fingerprinting is required for all teachers and for parent volunteers who work directly with children at the school on a regular basis. This is a district wide policy that helps maintain personal security for students.

**Pedagogy.**

Dzantik’i Heeni Middle School utilizes a peer mediation program that is coordinated by the school counselor. The program trains students to serve as active listeners and assist in conflict resolution. Students who demonstrate the ability to listen to both sides of an issue and have a respectful attitude toward diversity are invited to become Peer Mediators during their 8th grade year. They attend two retreats per year where they learn specific skills that are aimed at helping the school to be an emotionally safe place.

Dzantik’i Heeni utilizes an Internet Use Code of Conduct and provides conflict resolution as part of the required 6th grade Health program. There is an emphasis on building communication skills among all people at the school.
Physical Environment.

Dzantik’i Heeni School has two main entry doors, used by children, parents, visitors, and most staff to enter the building. They are located front and center of the building, in a logical and obvious location from the parking area. Secondary doors are used for exit only (locked from the outside). Clear emergency exit diagrams are posted in convenient locations. The administration office is located in close proximity to the main entrance and the principal’s office has a view to a portion of the entry.

Other safety features of the facility include a back-up diesel generator capable of providing sufficient power to maintain minimal heat, power, and lighting for the building. All of the classrooms have windows that allow natural light, and each classroom has at least one openable window (although it is an awning style with a limited opening span. The gymnasium has high corner windows to allow natural light in the event of a power outage. The building has contemporary fire and life safety systems and is in full compliance with codes, including the Americans with Disabilities Act (ADA).

Vandalism has occurred periodically since the building was under construction; the construction contractor actually encountered several vandalism acts included fires and damaged equipment. Vandalism has typically included broken windows, graffiti on exterior brick walls, removal/tearing shingles, and broken exterior light fixtures. Several serious break-ins to the building occurred during summer, 2002 causing damage to casework, interior doors, and furniture. The thieves (who were caught and prosecuted) were young adults and one juvenile, and they primarily stole equipment and small amounts of money. The isolated site with extensive forested surroundings and limited stable neighborhoods around Dzantik’i Heeni has made it subject to more vandalism than
other schools in the district in recent years. Design work is currently underway to provide
motion-activated lights on the forested side of the building to deter vandals.

6.3.5 Principle #5: The Learning Environment should make effective use of all available
resources.

People.

Teachers, children, parents, and community members all have a role in providing
education at Dzantik’i Heeni. Students take on mentoring and instructional roles much of
the time in two of the houses, and to some degree in the two others. The Alder House
uses mixed age groupings extensively, encouraging kids to work in groups that allow for
both leadership and follower-ship. Older students learn to be leaders who encourage
participation and respect from everyone in the group. In time, the younger children
become good leaders themselves by having been mentored in a positive way by older
peers. Friendships form across grade level that reduces traditional competition between
students.

In addition to their roles as instructional leaders, teachers are given Staff
Development opportunities throughout the school year. The district sets aside funds to
assist teachers in attending conferences or specialized training.

All of the staff and students at Dzantik’i Heeni recently participated in their first
Career Day, allowing children to work directly with more than 75 community members
who brought their jobs to school. Professionals volunteered their time to present two, one
and one-half hour sessions with the children in hands on activities that reflected the
nature of their daily work. A Career Fair was set up in the gymnasium with tables of information and displays about jobs throughout the Juneau community.

**Pedagogy.**

Much of the Middle School philosophy is based on the idea that a large variety of resources need to be used to respond to the diverse and complex needs of adolescents. Morse emphasized that “We want to support having complex thinking leaders – both the teachers and the students.”¹¹⁶ This requires creativity and resourcefulness from staff to continually spark the interests of students. The Alder House has studied Howard Gardner’s Theory of Multiple Intelligences, finding that both teachers and students appreciate the different ways that people gain knowledge. This awareness provides children a foundation for life long learning that occurs outside of, and far beyond, the traditional classroom and textbook.

Co-nect School – professional development and technology integration; provides teachers with teaching strategies that integrate the use of technology into all aspects of the curriculum and approach. The school originally received grants that introduced Dzantik’i Heeni to Con-nect; their offerings have been so successful that the school continues to contract with CO-nect for staff training.

**Physical Environment.**

The principal and staff at Dzantik’i Heeni consider many elements outside of the walls of the school to be part of the learning environment. One of the most immediate is the forest

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¹¹⁶ ibid.
that surrounds the school. It provides many opportunities for education, especially in the areas of science and community service.

The school has several elements designed into it to specifically support the middle school pedagogy, which emphasizes the idea that learning occurs everywhere and that one important role of the school is to help children connect themselves with the many diverse opportunities in the world. This is accomplished through the use of telephones, computers, televisions, and A/V equipment that help to electronically connect the school to the world. Dzantik’i Heeni’s technology rich environment has allowed teachers and students to communicate easily and find the resources to support their interests. Dzantik’i Heeni also maintains a web site that provides information about their school to the world.

The school also provides physical spaces to encourage the use of community resources. The large Commons area is often used to greet visitors and mentors for special events such as the recent Career Fair. Moveable walls and furniture allow classrooms to expand into presentation areas so that expert panels can address a large group of students. The library provides a comfortable large open space for a variety of meetings and presentations. These features help visitors feel welcome and their input valued because they know they will not be confined to a traditional classroom setting to present and share information.

6.3.6 Principle #6: The Learning Environment should allow for flexibility and adaptability to changing needs.

People.
The hiring of new teachers emphasizes “inculturation” - looking for people who will continue the pedagogical direction that has already been created. This also provides some variation that helps keep the pedagogical approach fresh. Morse has had two teachers transfer into Dzantik’i Heeni from Dryden Middle School; they are teachers who prefer to work in a house model. Similarly, he has lost a couple of teachers over the years to Dryden where a more traditional junior high approach is used.

Dzantik’i Heeni does not allow children to change enrollment between houses unless unsolvable problems have persisted. In this case, flexibility has been outweighed by stability since a fundamental goal of the middle school model is to allow teachers and students to work with one another for multiple years. Morse indicated that in the past six years, only a small handful students have changed from one house to another.117

**Pedagogy.**

Curricula is frequently modified at Dzantik’i Heeni. The core courses are always offered and teachers are required to align curricula with the district standards. However, teachers at Dzantik’i Heeni are constantly thinking of new and different ways of presenting materials. Among the core subjects, math has the least flexibility and is typically taught from textbooks. Other subjects rely on a large variety of materials including fiction and non-fiction books, music, plays, oral history, and interviews. These are continually changing as teaching approaches vary to accommodate the needs of the children. Students learn to test materials to determine their authenticity and relevance, to look for original source materials rather than automatically believing what is typed on a page.

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117 ibid.
Projects are refined as they are presented over multiple years; teachers who use a lot of projects stagger successful projects in three year cycles so that children will not have the same project during their three years in the school. New projects are developed on an ongoing basis as teams of teachers discover new opportunities.

Morse has noticed that teachers who have greater experience with adolescents often have more creativity in their approach. They have more confidence in “breaking out of the box” and still being able to have their students master required standardized tests. Morse has also noticed that the exploratory teachers have more difficulty integrating with academics and bringing new ideas and methodologies forward. This is possibly due to the fact that they are scheduled outside of the house block, with children enrolling in a variety of exploratory classes so the core group of students does not necessarily stay together.

 Teachers provide ongoing review of the entire school program and incorporate new classes as student and staff interests develop. In recent years, a non-graded course called “Toolbox” was added to each child’s daily schedule. It organizes all students in the school by grade level and house, and provides skills for presentations and speaking, much like Toastmasters. Exploratory classes that have been added in recent years include Introduction to Tlingit language and Multi-media Technology. No courses have been removed from the master schedule.

**Physical Environment.**

The change from three academic houses to four demonstrates the adaptability of the facility for changing organizational structures. Most of the classrooms are organized as a
ribbon along the upper floor corridor and many have interconnecting doors or movable partition walls. This allows the houses to be shaped with varying numbers of classrooms and still have close proximity to all classrooms in the house.

The two-story design of the school causes some limitations in adaptability over time. The upper level rooms are primarily for the academic houses while the lower level rooms are used for exploratory courses and school administration. It would be very difficult to effectively have classrooms on the lower level. Conversely, it would be costly and difficult to move exploratory classes such as art, life skills, technology, and music to the upper levels since these spaces have specific needs that are different from the more generic classrooms. So the proportion of regular classrooms to specialized rooms (for exploratory courses) is unlikely to change very much over time. This means that the facility will continue to work as long as the pedagogical direction does not significantly change.

The school currently has no hot lunch program. An analysis is recently begun to assess the improvements that would be needed at DZ to accommodate such a program. The layout of the school, especially the way it is “set into” the hillside, is expected to make modifications costly and difficult. The hot lunch program demonstrates the difficulty that this school will have in making substantial program changes over time.

The DZ site was limited in development to 10 acres. This was due, in part, to the wetlands fill permit that was necessary to construct the school in the selected location. Impacts to the wetlands had to be minimized to obtain the fill permit. The steep site and poor soils (for construction of buildings) also made it infeasible, cost wise, to develop

118 ibid.
more than 10 acres. The impact of these planning decisions is already seen at the school, and they will continue to limit the school’s options in the future. Presently there are no outdoor social/recreation spaces for students. Morse has been working with City & Borough of Juneau architectural staff to design an outdoor basketball area, a covered and fenced bicycle area, and improving the landscaping to make the small areas close to the school inviting to students. The challenge with each of these ideas is finding appropriate space on the site that does not require a wetland fill permit or conflict with existing parking and vehicle circulation. These issues would be compounded if an addition to the building was needed. The facility design did not consider a future addition.

The site and surrounding forest and wetlands provide a rich and adaptable textbook for environmental education studies at Dzantik’i Heeni. Most children are involved in a variety of learning and stewardship projects on the land surrounding the school building. The trail that is currently being designed to access the forest will improve its use for learning and recreation while protecting the forest. The City & Borough is currently working to place approximately 300 acres around the school into a protected zoning classification that would provide greater assurance of the forest remaining an outdoor classroom to Dzantik’i Heeni for the foreseeable future.
6.4 FLOYD DRYDEN MIDDLE SCHOOL CASE STUDY.

6.4.1 Principle #1: The Learning Environment should enhance teaching and learning and accommodate the needs of all learners.

People.

Students and teachers at Floyd Dryden are organized around grade level, which is further broken down into two-teacher teams. School staff and administrators describe this organization as being a reflection of what the community of parents wants. They feel very strongly that separated grade levels are the best way to organize adolescent students. The team teaching model allows common prep time and the opportunity for collaboration while maintaining autonomy and clarity of specific roles and responsibilities. Most teachers actually use the team to maintain good communications rather than as a collaborative teaching approach.

Philosophically, Dryden tries to be consistent with the middle school model. They do this with the team organization whereby smaller groupings of students are made to support the variety of developmental needs of the children. 7th grade, for example, is divided into 4 teams, each with approximately 55 students each. Each year, the students receive a new team of teachers as they advance through the grade levels. The idea behind the smaller groups is that teachers are more able to understand what their students need, be responsive to a smaller number of parents, and students feel more connected with specific aspects of school. “One of the big barriers to learning is fear, on numerous levels: fear of acceptance by others, fear of the unknown, etc.”

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1 Author interview with Mary Capobianco, Dryden teacher, April 30, 2003, Juneau, Alaska.
The two-teacher teams are responsible for the core academic courses in social studies, math, language arts, and science. The school schedule allows teams to have approximately 1.5 hours per day together, while students attend their exploratory classes. During this time they work on scheduling assignments, integrating projects, and becoming more aware of what the other teacher is doing so that due dates and student expectations are consistent rather than conflicting.

Parents may request that their child be placed with a specific teacher or team; it is not necessary to justify the request with pedagogical reasons. The school principal tries to honor all requests, regardless of the basis for the request. However, the classes must first be balanced for gender, ethnicity, and academic abilities. Teachers provide input and recommendations for the placement of students for the following year based on the need to balance the classrooms.

All students are assigned to an “Academic Skills group” that meets approximately 20 min. each day. Teacher teams choose a concentration area for this period. Two of the current groups in use this year are middle school support (organization, time management, etc.) and reading skills. There are typically 28-30 children in each Academic Skills Group.

The staff at Dryden is very stable. Last school year (‘01-‘02) four teachers departed for various personal reasons, such as moving away from Juneau. Four teachers have worked at Dryden for more than 20 years.

Pedagogy.
Separation of grade levels is generally viewed as a positive attribute at Dryden. Children are allowed to work with their peers, many of whom they have known since the start of...
school. There are few elementary classrooms that use mixed aged groupings, so the single grade configuration is the arrangement most familiar to students and families. Looping has been discussed among Dryden teachers at times, but never implemented.

Dryden was constructed as a junior high, which was the prevalent approach for grades 7-9 throughout American from 1940-1980. Although the name on the building now reads “Floyd Dryden Middle School” it has a long tradition in the junior high model that families of the Mendenhall valley seem to like. It is very familiar to parents because most attended junior highs themselves. Dryden has also tried to incorporate contemporary ideas and teaching methods, and the staff is continually working to fulfill parent expectations. When teachers were discussing the possibility of changing the grading system to a system advocated by middle school proponents, Dryden parents raised serious concerns. As one parent told a teacher, “I don’t care what kind of grading you use in the classroom but when the report card comes home I want to see A, B, C, D, F.” As a result of this pervasive attitude, Dryden uses traditional grading throughout its program.

Most teachers at Dryden follow the district curricula pretty closely, although they take advantage of learning opportunities as they come along. “For, example, after the Sept. 11, 2001 terrorist attack, I shifted our studies from the district’s curriculum of the Pacific Rim to study the Middle East social and political issues.” According to Capobianco, some teachers vary the curriculum more than she does, according to their comfort level and strong personal interests that may lead them to other areas. Personally, she likes using the district curriculum and teaching the same course each year. “I like it because I’m able to polish the stone rather than start new each time.”

\( \text{\scriptsize \cite{ibid}} \)

\( \text{\scriptsize \cite{ibid}} \)

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\( \text{\scriptsize \cite{ibid}} \)
There is an understanding in the school district administration that not all kids learn in the same way, but that the standardized testing required by local, state and federal mandates forces teachers to teach in traditional ways.

I have to always be aware that we (teachers) are all driving toward a standardized (graduation) test which is only one learning style. That is the reality I have to live with, although I try to offer different learning opportunities when I can. To me, (standardized testing) is a conflict, although I understand the need to weigh the cow, the direction we want to go in, that is, what we say, is different than what we do.\(^5\)

As the school’s pedagogical leader, the principal supports teachers at Dryden in preparing students for standardized tests. This year, for example, he visited every classroom, giving the students a general pep talk, but also discussing with them test taking strategies and specific techniques. This minimizes anxieties, especially for 6\(^{th}\) graders, while also relaying the importance of good test performance.

It’s hard for me to tell if this really paid off since this is only my second year here and I’ve not yet seen this year’s test results. But the Dryden kids scored better than DZ last year in every subject and they seemed to like the prep session we did.\(^6\)

Dryden has also increased the number of advanced math and advanced language arts classes. Milliron observed,

\(^5\) ibid.
Some people may say that offering more of the higher level classes is not accommodating the needs of all types of learners, but I see it differently. Allowing more students to achieve the high academic levels they are capable of opens doors for them in high school, while it responds to their personal capabilities to achieve. It also allows the regular classroom teacher to better meet the needs of the average and low-average students because he or she is not having to cover the higher end students, which can be very demanding.  

Project based learning is commonly associated with the middle school model, but has broad applications. “Teachers use the elements of project based learning in many ways, although they may not be saying such. We focus on goals, looking at what we are trying to send students toward. Then we use the full range of strategies to take them there.”

**Physical Environment.**

Floyd Dryden Middle School is a one-story structure that whose building footprint has remained intact since the completion of all phases in 1984. The interior has been modified somewhat over the years, mostly by the elimination of the hot lunch program in the late 1970’s (elimination of the hot lunch program occurred throughout the district, not solely at Dryden and is the center of extensive current debate in the community). The former kitchen space was remodeled to meet maintenance and storage needs.

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7 ibid.
8 Author interview with Mary Capobianco, Dryden teacher April 30, 2003 Juneau, Alaska.
Student growth in the Mendenhall Valley rapidly exceeded the capacity of Dryden within 5 years of completion of the final addition. By the late 1980’s two isolated modular (portable) classrooms were added to the east end of the site. These were intended to remain for only a few years but are still in use, as the building remains filled beyond its planning capacity. Also, several interior spaces not originally intended for classrooms have been incorporated to address the bulging population. The performance stage has been converted to two classrooms, and it has been necessary to utilize an interior storage room with a low ceiling and poor air quality for a classroom, as well.

The primary social gathering area is the Commons. This space was originally programmed as a flexible, adaptable, multi-purpose open academic area that could accommodate multiple teaching and learning needs. The area (as well as the nearby library) was designed with the open classroom concept in mind. However, the space suffered the fate of many other open classroom concepts (see 2.14, Historical Background) since the pedagogy was not aligned with the staff’s idea of how the school should be used. Modular walls were put up one year after the school opened, isolating the area primarily for acoustical reasons. By the mid-1980’s the space was given the title “Student Commons.” The upcoming renovation project will remove the modular walls and replace them with insulated, framed walls. The Commons is currently used for classroom space (due to overcrowding) and is used for two lunch periods. The low ceiling restricts it from being used for performances. Parent and staff meetings are usually held in the library as there is no conference room in the school. The library is both functionally and aesthetically more pleasing than the Commons, even with its worn furnishings and deteriorated interior finishes.
Three sets of classrooms are separated by moveable walls at Dryden, however they are not extensively used because of the pedagogical model being used in most of the school. Classrooms are uniform in design within each phase that they were constructed. For example, rooms of the original core and the 1974 addition are approximately 750 s.f. in size, and the final 1984 addition’s classrooms are 840 s.f. There are several odd sized classrooms that have been adapted from previous uses due to the overcrowded condition at the school. Each regular classroom has a formal teaching wall with chalk/dry erase board and bulletin board, providing a frontal orientation for the classroom. There is built-in casework in many rooms and most rooms have sinks.

Tables and chairs are used by a few teachers; the majority use desk units that have integral seats. Teachers often group the desks together in different arrangements, depending on class activities and the behaviors of specific groups of kids. A few teachers prefer using traditional rows with a front of room orientation. “The patterns and types of our furniture are pretty much an issue of dealing with what you get. If we had more tables and chairs I think more teachers would be interested in using them.”

6.4.2 Principle #2: The Learning Environment Should Serve as Center of the Community.

People.

Dryden has many parents and community members who provide support to a variety of school-community events. The Parent-Teacher Organization (PTO) has approximately 10 active members. However, many other people help organize and/or attend specific events. There are no dues for PTO membership. Their primary mission is to “provide

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9 ibid.
10 Author interview with Barbara Kubota, Dryden parent, April 28, 2003 Juneau, Alaska.
general support to the school and to keep families connected to their children’s learning."11 The PTO used to participate as a part of the Site Council, but the groups began functioning separately in 2002.

Few teachers participate in the PTO except to provide funding requests in the form of written proposals. The chief fund raising event each year is magazine sales that net $15-18,000. These funds are used to fulfill requests made by teachers for program and facility enhancements that are not provided by the school district. The PTO’s priority is for the funding to reach to the most kids possible. The PTO holds monthly business meetings with 10-12 people typically in attendance. They also host special topics such as having a local police officer speak to parents about the realities of drugs in the community. These meetings draw an audience of approximately 50 people.

Although the school has no formalized partnerships with local businesses, significant assistance for special programs has been provided by community organizations. One example is the outdoor skills program that provides a 3-4 day focused program on various aspects of hunter safety and wilderness survival to all sixth grade students as part of their science program. The local gun club provides .22 rifles for shooting at the rifle range, and 4-H volunteers provide instructors to help teach safety.

**Pedagogy.**

Many teachers encourage active participation in the greater Juneau community even though the curriculum itself does not necessarily promote it. There are periodic school-wide projects to encourage children to get involved in community projects such as the annual litter pick up in early May. Additional projects occur on by teams and grade

11 ibid.
levels, as teachers find opportunities in the community. This year there was an avalanche awareness program for 5th graders that brought community experts to the school to work with students. With the help of the PTO, teachers have initiated projects with the students, such a flower bulb planting project and a canned food drive for the local Food Bank. Discovery Southeast, a non-profit environmental education organization interfaces with Dryden students and teachers. They provide assistance with science projects, involve children in stream protection efforts, and provide mentoring to students with interests in environmental science.

Students and the greater community are also connected through the Alaska native cultural and heritage studies program. Dryden hosts a Culture Club and has an Indian Studies teacher who works with all classrooms to integrate native culture and traditions into their learning. A number of social and service clubs also exist at the school and involve a wide variety of children, teachers, and parents.

**Physical Environment.**

Floyd Dryden Middle School’s proximity to Adair Kennedy Park allows shared use of parking and sports fields, making efficient use of Juneau’s limited land. The site is also home to an important anadromous stream, Duck Creek, which has been undergoing extensive restoration efforts through a collaborative agency and citizen effort. Most of the school is developed, however, a large spruce tree grove of is located at the westerly portion of the site and is identified for potential future parking.

The school has served a variety of important community functions for many years. These include community sports leagues, meetings, and adult education classes.
Dryden has approximately 5,400 hrs. of community use per year, split nearly equally between adult and youth activities.  

6.4.3 Principle #3: The Learning Environment should result from a planning and design process that involves all stakeholders.

People.

Floyd Dryden Principal Tom Milliron uses staff meeting to communicate important general information to staff. He always starts the weekly morning meeting with announcements of events and issues of the Juneau Education Association (the teachers’ union). Each month, one of the 30 minute meetings is used to present a safety topic such as drug/alcohol awareness or procedures for suspected child abuse. Weekly grade-level team meetings are held with the principal, as well. These meetings usually last 45-60 minutes with the primary purpose being to enhance communication between administration and the teaching staff. This is where the teachers have the most opportunity for involvement in the operations of the school.

There is extensive use of e:mail at Dryden, by both teachers and administrators. Milliron distributes a daily bulletin that includes excerpts from the on line publication “Ed.net Briefs.”

Parents participate in school decision making primarily through the Site Council. It is an elected body of parents and teachers who meet monthly and primarily serve in an advisory role to the school administration. “They take on hot issues that are high profile for the whole school like cross walk safety. The council is valuable in that it provides the

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12 Statistics provided by Juneau Community Schools Director Joyce Kitka, May 16, 2003.
heartbeat for the community of parents want.” The council membership is more than 50% parents, and most of the Site Council parents are also the leaders in the PTO. There is one student position on the Site Council that is filled most of the time.

There is no longer a student council at Dryden. There was a collective decision between students and staff to discontinue the student council due to a general lack of interest. Some also felt that the historical role of the site council had not been valuable, and thus, has contributed to the lack of interest.

**Pedagogy.**

At Dryden, the topics for “in-service days” (scheduled calendar days without student attendance) are established by the principal, although he makes an effort to get input from teacher about what kinds of topics they would like to have. The development of in-service topics demonstrates the general attitude toward responsibilities at the school. School wide issues are generally seen as being administrative responsibilities, while things happening in the classrooms with kids are seen as the teachers’ responsibilities. When asked if staff feels empowered to make change at Dryden, one teacher replied, “It varies. Teachers are sometimes unified in what needs to change; other times we realize that the system is just the way it is and we accept it.”

Dryden parents generally do not demonstrate a high level of shared responsibility toward their child’s education. The primary role rests with the individual teachers, and parents provide the support and encouragement to the teachers as much as possible. Teachers try to respond to what parents seem to want without necessarily seeking their

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14 Author interview with Mary Capobianco, Dryden teacher, April 30, 2003 Juneau, Alaska
input. This causes frustration for some parents who want to try more contemporary approaches to adolescent education.

**Physical Environment.**

The media center is used for most group meetings including regular staff meetings and Site Council. The school does not have a conference room; the principal’s office is often used for small meetings (2-5 people).

The school does not have dedicated planning areas, and the overcrowding has forced many spaces to be used for instruction that were never designed to accommodate teachers or students. There is a small workroom with very modest food preparation facilities, and the teacher workroom is little more than a copy room.

6.4.4 Principle #4: The Learning Environment should provide for health, safety, and security.

**People.**

Dryden staff talks a lot about the need to maintain a healthy, safe school. The principal greets children each morning outside the school, and tries to connect with them on a personal level. The purpose is not to look for problems, but instead set a tone that welcomes kids and gives the expectation that adults are always visible and watching.

The 6\textsuperscript{th} grade health curriculum includes character education and an anti-bullying component. “We have no tolerance for bullying. Kids with anger issues are promptly put in anger management classes.”\textsuperscript{15} Teachers are active in the hallways between classes,

\textsuperscript{15} Author interview with Tom Milliron, Dryden principal, May 5, 2003 Juneau, Alaska.
when the majority of aggressive behavior tries to occur. Teachers have also developed staggered release times that have decreased the congestion in the halls between classes.

Regarding discipline, every team of teachers determines the basic expectations for student behavior, then coordinates these expectations throughout the grade level. “We try to be uniform in creating general policies. We use a progressive discipline model so we want to be consistent, especially between team teachers.” ¹⁶ Discipline is presented as responsibility to the children. Teachers work to build responsibility in a number of important areas such as organization, timeliness, and self control. For example, grades are posted each Monday that reflecting the student’s work up through the previous week. This helps kids see where they stand in comparison to others. They can immediately notice if work has not been turned in or if make-up is needed. Teachers use this as a tool for expectations, not humiliation.

Monthly fire drills and practice escape plans occur with students and staff. Since many of the school’s spaces have no exterior windows, procedures are in place, and practiced, to respond to power outages and earthquakes.

**Pedagogy.**

Dryden Middle School utilizes a peer mediation program that is coordinated by the school nurse (who is also a certified teacher). The program trains students to serve as active listeners and assist in conflict resolution. Students who demonstrate the ability to listen to both sides of an issue and have a respectful attitude toward diversity are invited to become Peer Mediators during their 8th grade year. They attend meetings and retreats

¹⁶ Author interview with Mary Capobianco, Dryden teacher, April 30, 2003 Juneau, Alaska.
where they learn specific skills that are aimed at helping the school to be an emotionally safe place.

The school utilizes an Internet Use Code of Conduct and provides conflict resolution as part of the required 6th grade Health program. There is an emphasis on building communication skills among all people at Floyd Dryden School.

The district health curriculum is presented to all 6th graders; some additional material is presented in 7th grade biology.

**Physical Environment.**

The school has one set of main entry doors, and a secondary set at the east end of the building that access the modular classrooms. Most children, parents, visitors, and staff enter the building through the main entry, directly across from the parking area. Secondary doors are used for exit only (locked from the outside). Clear emergency exit diagrams are posted in convenient locations. The entry does not have visual control by any office or classroom. This has contributed to vandalism of the toilet rooms that are located along the long entry way.

All of the exterior windows are covered with plexi-glass panels to reduce breakage. However, the panels naturally lose clarity over time, and vandalism has damaged them with scratches and burns to the point where many do not provide clear visibility. Most of the windows are not openable, either. The building has aged fire and life safety systems and lacks compliance with the Americans with Disabilities Act (ADA). The upcoming renovation project will address major code concerns but will not replace exterior windows.
6.4.5 Principle #5: The Learning Environment should make effective use of all available resources.

People.

Teachers at Dryden have the most contact with kids’ families. They keep parents informed through e:mail and the telephone “homework hotline.” Teachers try to involve parents by having them share special skills with relevant classes and participating in field trips. 6th grade parents are typically more involved in the school because there are more concerns about the transition from elementary to middle school.

Teachers are offered many staff development opportunities, but it is very difficult to take advantage of these during the busy school year. “Professional development courses are a two-edged sword. I want to give my staff opportunities to get good new information to keep their licenses renewed, but I also want them in the classroom where they’re really needed.”[17] Many teachers participate in summer courses or evening courses, especially when grants have offered to provide paid attendance.

Pedagogy.

Dryden staff encourages home-to-school connections as specific projects or events occur during the year. There is an emphasis on sharing personal interests and home life at the beginning of year as kids are getting to know one another.

Many teachers use one another as resources as they seek out ideas on curricula, projects, etc. Sometimes these are team partners, and other times they are exploratory teachers or just colleagues who they connect with. They give feedback and ideas to help combat isolation and becoming overwhelmed. Tangible resources from the district are

very limited due to lack of funds or even lack of access to resources, such as busses for field trips, so relying on one another’s human resources is essential.

In February, 2003, the school Dryden held a Health Fair that involved all of the students and many community organizations. The day long event was held in the gymnasium and addressed a variety of health topics. Prior to the Health Fair, students had participated in a survey to identify the kinds of health issues they were interested in. The event was very effective in informing students and helping them understand the many health resources that are available in the community.

**Physical Environment.**

The school provides the basic school resources that teachers rely on, although the facility is aged and worn, and in need of replacement at this time. The school has telephones, computers, televisions, and A/V equipment. The library’s fictional and reference collection is minimally adequate, but general curricular materials are available.

The school is used a lot by the community, but the location of the school is much more of a factor than the quality of the spaces. There are very few suitable places in the Mendenhall Valley for public meetings, clubs, etc. so Dryden’s physical location makes it very desirable. Teachers in general are very supportive of the community’s use of the building, and most of the visitors who use classrooms during non-school hours are respectful of the teacher’s space. However, the building’s design actually makes some aspects of community use a challenge since it is difficult to close off sections of the building and maintain emergency exiting so public areas are difficult to supervise. The public toilet rooms adjacent to the gymnasium have been severely vandalized during non-
school hours. Staff’s reaction has been to insist on vandal-resistant materials in the renovation project; full height stainless steel wall panels will be used.

6.4.6 **Principle #6. The Learning Environment should allow for flexibility and adaptability to changing needs.**

**People.**

Staff at Dryden participates in teacher hiring through the use of committees. The principal seeks involvement from teachers that will interface extensively with the new hire. He also involves a member of the Site Council when possible so that the community pulse can be reflected in the hiring. This kind of expanded involvement helps keep the hiring process fresh, adapting it to the needs that are most pressing.

Dryden Middle School doesn’t use parent surveys or curricular feedback, but they encourage parent participation on the Site Council and the PTO. In terms of course offerings, parents and teachers are relatively satisfied with the offerings because new exploratory courses have not been added for many years. The principal’s current proposal to cut back the band program to allow additional higher level academic exploratory classes has caused extensive debate among parents, staff, and administration.

**Pedagogy.**

Although teachers rely extensively on the district’s standard curriculum, they are always looking for ways to improve teaching and learning. One teacher indicated that she enjoyed teaching the same subject areas with students of the same grade level over multiple years because she can concentrate on refining the curriculum. Over the course of
many years, a teacher can become very proficient at doing a few subject areas very well. Flexibility is replaced with refinement when there is a strong focus on content.

Dryden teachers encourage life long learning by relating the curriculum to real life as much as possible. However, they don’t make wholesale adaptations to meet individual students’ interests. “We try to make links to real things because you want them to be engaged. They are told that they probably won’t like everything, but they can see that some things are needed to take them down the road that goes somewhere.”

Physical Environment.

The school has sufficient flexibility in its general plan that it could be arranged around an alternative organizational structure, such as a middle school 3-house model. The limits on flexibility come from the width of the main building core which causes a significant amount of area that has no exterior face for windows. However, since structural load bearing occurs on the interior walls, it would be possible to adapt the interior zone to an enclosed courtyard. The effect would be that the overall school would be significantly smaller.

Unfortunately, a $15 million, two-phase renovation project will begin in the coming weeks which does not consider extensive renovation in this manner. The renovation originated with a maintenance focus and did not incorporate opportunities to adapt the school to better serve the middle school model. There was initial interest in trying to align the scope of the renovation with contemporary programming needs of the school, but resistance came from the school district staff. The result is that the renovation

18 Author interview with Mary Capobianco, Dryden teacher, April 30, 2003, Juneau, Alaska.
will not be incorporating a programming phase that considers the pedagogical or people needs for the school.

Floyd Dryden’s site has some flexibility since it is closely connected with the park. This makes it possible for the school to reach beyond its building walls and become more involved in many offerings that parks provide. For example, there is ample space for the development of a “Learning Landscape” that could combine environmental education, science, and recreation for the school and community. To date, the outdoor environment has not been understood as a school resource, except for the sports facilities that are used for Physical Education.