

NORTHVIEW ELEMENTARY SCHOOL: AN ITERATIVE PARTICIPATORY PROCESS IN SCHOOLYARD PLANNING & DESIGN

by

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A REPORT

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Abstract

There is currently a dearth of planning literature concerning participatory processes relative to children, particularly in the planning and design of schoolyard or playground spaces. Through a local, place-based, participatory approach emphasizing local knowledge and active listening, this master's report seeks to confirm the value of children in the planning and design of a schoolyard space.

The study took place at the Northview Elementary School in Manhattan, KS comprising students as primary stakeholders, teachers/administrative staff as secondary stakeholders and parents as tertiary stakeholders. Additionally, the study employed Piaget's and Vygotsky's childhood cognitive development theories and five operational play categories in guiding the development of a learning landscape design aimed at supporting and maximizing cognitive development, physical activity and recreation. The report concludes with a set of five (5) recommendations designed to equip prospective researchers in undertaking participatory processes within school settings.

The implication of this study is that sustained stakeholder engagement during planning and design processes of schoolyards will result in spaces reflective of the target audience.



Table of Contents

vi	List of Figures		
viii	List of Tables		
x	Acknowledgements		
xi	Dedication		
xii	Foreword		
xv	Preface		
1	INTRODUCTION		
2	Introductory Paragraph		
3	Project Boundaries		
4	Project Dilemma and Thesis		
5	Research Questions		
7	THEORETICAL BASIS		
8	Project Design Philosophy		
9	Project Process		
10	Childhood Development and Learning		
11	Literature Review Syntheses		
14	Precedent Studies		
16	Elements of Participatory Process Programming		
19	METHODS		
24	Data Collection: Northview Study		
37	Content Analyses		
47	FINDINGS		
49	Student Results		
58	Supporting Stakeholder Results		
62	Study Limitations		
65	CONCLUSIONS		
70	Assessment of Northview Ecological Master Plan		
80	Theoretical Comparisons and Contrasts		
86	Project + Researcher Reflections		
88	Future Research		
91	Recommendations for Participatory Processes Improvement		
96	REFERENCES		
100	APPENDIX A: GLOSSARY		
102	APPENDIX B: LITERATURE REVIEW		
118	APPENDIX C: PRECEDENT STUDIES		
128	APPENDIX D: CODING PROCESS		

List of Figures

01: Introduction

Fig. 1-1: Project Boundary (*Author 2011*)

02: Theoretical Basis

Fig. 2-1: Project Design Philosophy (*Author 2011*)

Fig. 2-2: Project Process (*Author 2011*)

Fig. 2-3: Philosophy of Childhood Development & Learning (*Author 2012*)

Fig. 2-4: Literature Review Map (*Author 2012*)

03: Methods

Fig. 3-1: Northview Elementary Collaboration Timeline (*Weatherholt 2012*)

Fig. 3-2: Northview Elementary Data Collection Method (*Author 2012*)

Fig. 3-3: Recess Observation (*Melvin 2012*)

Fig. 3-4: Recess Observation (*Melvin 2012*)

Fig. 3-5: Recess Observation (*Author 2012*)

Fig. 3-6: Workshop Session (*Author 2012*)

Fig. 3-7: Student Drawing

Fig. 3-8: Recess Observation (*Author 2012*)

Fig. 3-9: Workshop Session (*Author 2012*)

Fig. 3-10: Student Drawing

Fig. 3-11: Recess Observation (*Melvin 2012*)

Fig. 3-12: Workshop Session (*Schneider 2012*)

Fig. 3-13: Student Drawing

Fig. 3-14: Recess Observation (*Melvin 2012*)

Fig. 3-15: Workshop Session (*Burdick 2012*)

Fig. 3-16: Student Drawing

Fig. 3-17: Recess Observation (*Melvin 2012*)

Fig. 3-18: Workshop Session (*Melvin 2012*)

Fig. 3-19: Student Drawing

Fig. 3-20: Interrelationship between data collection and coding categories (*Author 2012*)

Fig. 3-21: Cross-reference between Stakeholder Codes and Operational Play Categories (*Author 2012*)

Fig. 3-22: Northview Administration + Designer Place - Based Goals (*Author 2012*)

Fig. 3-23: Active/Functional Play Sketch (*Based on Northview photograph by Melvin*) (*Author 2012*)

Fig. 3-24: Constructive Play Sketch (*Based on Northview photograph by Swietek*) (*Author 2012*)

Fig. 3-25: Exploratory Play Sketch (*Based on Northview photograph by Author*) (*Author 2012*)

Fig. 3-26: Games with Rules Sketch (*Based on photograph by Hao 2012*) (*Author 2012*)

Fig. 3-27: Natural Play Sketch (*Based on Northview photograph by Melvin*) (*Author 2012*)

04: Findings

Fig. 4-1: Northview Students Place - Based Goals (*Author 2012*)

05: Conclusion

Fig. 5-1: Northview Ecological Master Plan (*Weatherholt 2012*)

Fig. 5-2: West Playground (*Weatherholt 2012*)

Fig. 5-3: Outdoor Classroom (*Weatherholt 2012*)

Fig. 5-4: Small Outdoor Classroom (*Weatherholt 2012*)

Fig. 5-5: Dry Creek bed (*Weatherholt 2012*)

List of Tables

02: Theoretical Basis

Table 2-1: Elements of Participatory Process Programming (Author 2012)

03: Methods

Table 3-1: Northview Study Student Demographics (Author 2012)

Table 3-2: Northview Elementary Stakeholder Products (Author 2012)

04: Findings

Table 4-1: All Grades Results (Author 2012)

Table 4-2a: Kindergarten Top Responses (Author 2012)

Table 4-2b: Kindergarten Top Responses (Author 2012)

Table 4-2c: Kindergarten Top Responses (Author 2012)

Table 4-3a: First Grade Top Responses (Author 2012)

Table 4-3b: First Grade Top Responses (Author 2012)

Table 4-3c: First Grade Top Responses (Author 2012)

Table 4-4a: Second Grade Top Responses (Author 2012)

Table 4-4b: Second Grade Top Responses (Author 2012)

Table 4-4c: Second Grade Top Responses (Author 2012)

Table 4-5a: Third/Fourth Grade Top Responses (Author 2012)

Table 4-5b: Third/Fourth Grade Top Responses (Author 2012)

Table 4-5c: Third/Fourth Grade Top Responses (Author 2012)

Table 4-6a: Fifth/Sixth Grade Top Responses (Author 2012)

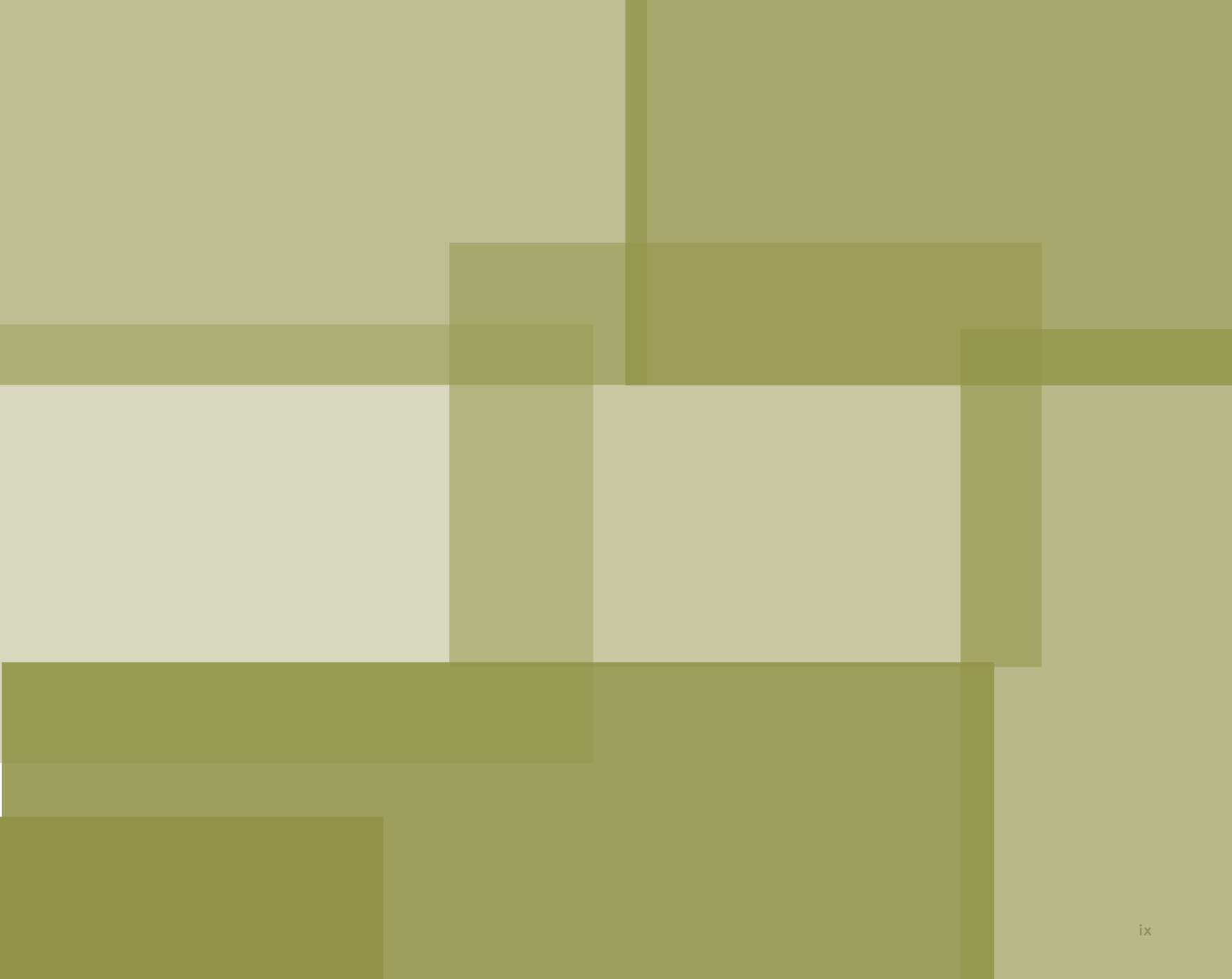
Table 4-6b: Fifth/Sixth Grade Top Responses (Author 2012)

Table 4-6c: Fifth/Sixth Grade Top Responses (Author 2012)

Table 4-7a: Diary Entries Top Responses (Author 2012)

Table 4-7b: Diary Entries Top Responses (Author 2012)

Table 4-7c: Diary Entries Top Responses (Author 2012)



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To the Northview Elementary School, in particular Principal Shelley Aistrup, Kimberly Markward, after school club supervisors and students. Thank you for helping make this report a reality.

Dedication

To Daddy, Mummy, Abe, Kofi, Ewurafua and to my late grandmother, whom I'll never forget, Cecilia Josephine Hanson.

Landscapes of Learning Master's Report Studio Foreword

The Landscape Architecture/Regional & Community Planning graduates of 2012 are the first class to participate in a collaborative studio process leading to completion of their individual master's reports. Seven of these graduates chose to work under the topic *Landscapes of Learning*. The interests of the group were broad: biophilia, access to nature for children, childhood development and special needs, ecological interpretation, participatory design, public play spaces, and landform as art. The common conversation centered around big questions: How can all children have access to nature for learning through play? What creates a rich, outdoor environment for all kinds of children and young adults?

A formative experience in my understanding of landscapes for learning occurred in 2008-2010, when I helped create a learning garden at a local elementary school. One hundred eighty people built the school garden over eighteen weekends. The garden was handmade. Raised planters were built by Boy Scouts and a kind dad with a miter saw. A talented landscape contractor helped build a 14-foot long limestone bench. The Parent-Teacher Organization's unofficial 'dad of the year' made it a family affair — his siblings, mother, father, and children all returned to the garden site for many weekends of work.

Sadly, the garden existed for just 153 days. The voting public passed a bond for school renovation and the elementary school received funds for a beautiful building expansion. The garden turned out to be too difficult to stage around during construction.

The learning garden had become a talisman to me. In it, I saw a kind of landscape I had never made in a professional firm. The garden was decidedly humble and handcrafted, made of creamy Kansas limestone and native plants bought or donated and dug in a few at a time. The garden was 'quiet' aesthetically: native wildflowers and grasses, crushed stone paths, tree shade, planters with compost-rich soil. The garden was designed for diverse experiences: learning across the grades and curriculum, quiet time, and play. There was always a puddle somewhere, reflecting leaves and strands of switchgrass. During the fall it was completed, 4th graders would run to the side of the garden intern at recess to ask if they could help weed, or mulch, or rake. When the news sunk in that the garden was gone, I looked at its photographic ghost in satellite imagery. How could so many people want something, work so hard to make it happen, and yet it could not survive?

The humble learning garden had answered a creative drive for me. I had wanted to make social sculpture: to bring a socially-significant place to life beyond words and images. The garden's absence opened me to questions about landscapes of/by/for learning.

The 2012 Landscapes of Learning studio became a forum for these questions. Seven master of landscape architecture and master of regional and community planning students selected the studio as the crucible for their final year's projects. The graduate student researchers conceived of

their bond as a colloquium, where each shared information freely to raise the expertise of all.

Though each student defined his or her own project, all projects engaged the community of Manhattan, Kansas (the setting for Kansas State University); and all projects questioned what we as future landscape architects and planners assume about landscapes for children. In nine months' time, a diverse set of projects took shape to address a range of questions:

If we assume access to nature to be beneficial to children, are some children denied access due to socioeconomic status and its impact upon housing choice?

Jonathan Knight, Wichita, Kansas

In a neighborhood with no parks, can an oversized middle school property serve a joint use for school and neighbors?

Shuang Hao, Manhattan, Kansas / Suihua, China

How can an elementary school in a flood plain landscape meet diverse schoolyard needs while also interpreting the hydrologic cycle for children?

Laura Weatherholt, Tulsa, Oklahoma

How can a schoolyard be designed to be a therapeutic environment for all children, with an emphasis on benefiting those children with autism?

Chelsey King, St. Peters, Missouri

How can planners and landscape architects improve community participatory design methods for determining what children need and desire in a

school landscape?

Kweku Addo-Atuah, Accra, Ghana

Contemporary schoolyards often lack creative expression. How can humanities research serve as evidence for the design of a functional schoolyard that is also a sculptural work of art?

Rebecca Melvin, Seattle, Washington

In the temperate Midwest United States, interiorscapes are seldom a feature of public schools. How should an interiorscape be designed to integrate the natural and built environment within an existing high school?

Sukaina Fakhraldeen, Kuwait

The reports address landscapes of learning at a range of scales: from city planning to interior scale. The projects also exhibit a great variety in conceptual approach: from personal and poetic design driven by humanities knowledge to participatory design process including nearly one hundred students. What is not evident in the list of questions is the interrelationship between projects. The individual report which follows will provide a point of reference. The individual researcher's goals will be made clear, but will also be linked to a collective annotated bibliography made by the studio. Some reports refer to the work of other students, as several projects were interdependent, but each report is original work, completed by the individual author.

As a whole, the 2012 Landscapes of Learning master's reports do not focus narrowly on the most popular topics of the day: encouraging active play and control of childhood obesity. Instead, our holistic approach demonstrates creative and scholarly inquiry representing a breadth of themes in contemporary discourse about experiential learning environments for children.

Assistant Professor **Katie Kingery-Page**
Major Professor to the Landscapes of Learning Students
April, 2012

Preface

As set forth in the preceding Foreword, each member holds an individual interest under the Landscapes of Learning Master's Report Studio. The researcher was motivated to work against the little effort demonstrated by planners and landscape architects in adequately engaging children in the planning and design process. Because children play an integral role in the successful use of play spaces developed by these professionals, it is necessary to acknowledge the input of these core users. Adopting such an inclusive approach may help negate the frequency of underused outdoor play areas and begin to address the lingering question of why some children choose to remain indoors for leisure.



INTRODUCTION

This section of the report introduces readers to the purpose of the project, its boundaries and project dilemma, thesis and driving research question.

Master's Report Introductory Paragraph

The United Nation's Convention on the Rights of the Child (CRC) grants children the right to participate in making decisions about the things that will affect their lives, (Article 12, unicef.org). Incorporating children in the planning and design process validates urban planning's position as a democratic discipline that emphasizes equity in addressing the concerns of all groups. Despite the profession's efforts at meaningful community participation and engagement, literature on participatory design process involving schoolchildren is limited.

The primary goal of this master's report is to communicate to the urban planning and landscape architecture professions the value of participatory design process involving children in the design of schoolyard spaces. Through a description of the research study methodology, the report illustrates how a local, place-based approach, supported by input from schoolteachers and parents, will lead to an iterative participatory design process representative of its target audience. Additionally, the report provides a set of recommendations designed to improve the way planners and landscape architects can engage children in the planning and design process. The site context of this project is Manhattan, Kansas (KS), specifically, the Northview Elementary School.

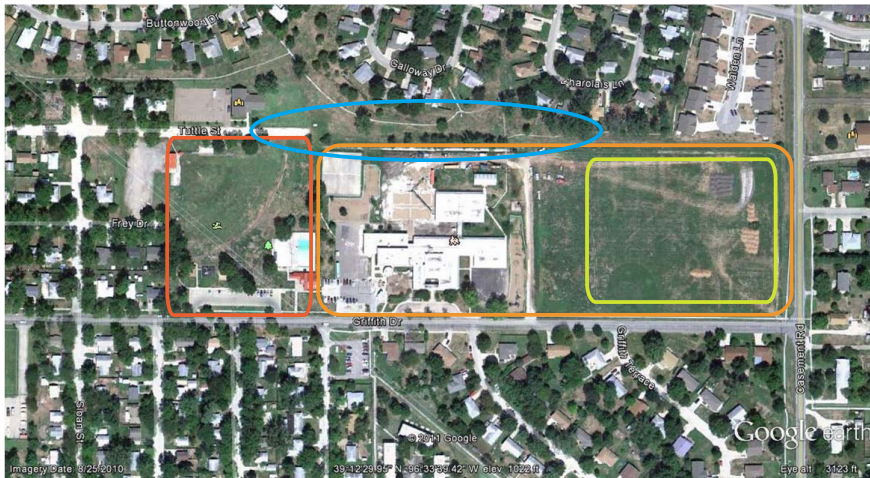
Project Boundaries

The research study took place in Manhattan, KS (see Fig. 1-1: Project Boundary). The site for the master's project was the Northview Elementary School with Dr. Shelley Aistrup as Principal. The school serves 440 students from kindergarten to the sixth grade with an active teaching staff of 45. The theoretical frame bounding the project was participatory design, in particular community engagement relative to children. While the study emphasized children's vision in re-designing the 17-acre schoolyard site, it also acknowledged teachers and parents as vital to the participatory process.

Reasons for Selecting the School

(a) Existing relationship established between Northview Elementary and Landscapes of Learning Major Professor Mary Catherine (Katie) Kingery-Page. This project as well as others, looked to strengthen that link.

(b) Northview Elementary School stood to receive the most intense design assistance of the four schools under the Master's Report Studio. The researcher felt that incorporating an urban planning perspective through a participatory design process would ensure a well-rounded design process.



Aerial view of Northview Elementary and the adjacent Northview Park (Google 2012)

Fig. 1-1: Project Boundary

The area circled in orange is the school ground site that the researcher and Laura Weatherholt worked on together; the area in green is Rebecca Melvin's project site. The area in red is the adjacent park and the area in blue is the adjoining open property.

Project Dilemma and Thesis

Dilemma

Planners and designers continue to bemoan children's inclination to spend hours glued to video games or television sets. To help dissuade children from these activities, these professionals seek to create interior/exterior play environments that help mitigate this sedentary use of time. Unsurprisingly, these play environments with traditional monkey bar sets and the like do very little to pique and sustain the interest of its target audience. Although the intentions of planners and designers are noble, a critical element missing in the planning and design of these schoolyard spaces are children. Too often, these adults fail to realize that children possess strong, active minds of their own and rather misinterpret their perception of children's needs as the true desires of all children. For planners and designers to create spaces that youth will actually insist on patronizing, they must understand the developmental patterns of children.

Children's interaction with nature or natural processes develops in three age stages: 3-6, 6-12 and 13-17. At ages three to six, the first real contact with nature revolves around "play in the family garden with their puppies in tow" (Kahn & Kellert 2002, 250). The second stage - buoyed by increased mobility - is the period where "natural curiosity and exploration" within children flourishes; these feelings manifest themselves physically in the "making of forts or dens" (Kahn & Kellert 2002, 251). At 13-17, children become "highly cognizant and appreciative

of natural processes such as ecosystems" (Kahn & Kellert 2002, 251). Planners and designers should take advantage of this stage and "engage the youth in activities such as helping design community open spaces" (Kahn & Kellert 2002, 252). For planners and designers to succeed in capturing children's interest, they must create in tandem with this audience, environments that are in some instances similar to those found in video games. These schoolyard spaces must support or induce, "spatial visualization, logical or strategic planning skills" and opportunities for recreation and physical activity (Kahn & Kellert 2002, 54).

Thesis

Engaging Northview stakeholders through a participatory process based on a local, place-based approach will result in a rich learning landscape design that supports and maximizes cognitive development, physical activity and recreation.

Research Questions

Research Question 1:

How does local knowledge and active listening drive a place-based participatory approach in discerning user needs and interests?

Research Question 2:

Can a participatory process guided by childhood cognitive development theories and play categories result in a learning landscape design supporting cognitive development, physical activity and recreation?

Research Question 3:

How can planners and landscape architects improve community participatory design methods for determining what children need and desire in a school landscape?



THEORETICAL BASIS

This section of the report will discuss the guiding concepts, literature reviews and precedent studies.

Project Design Philosophy

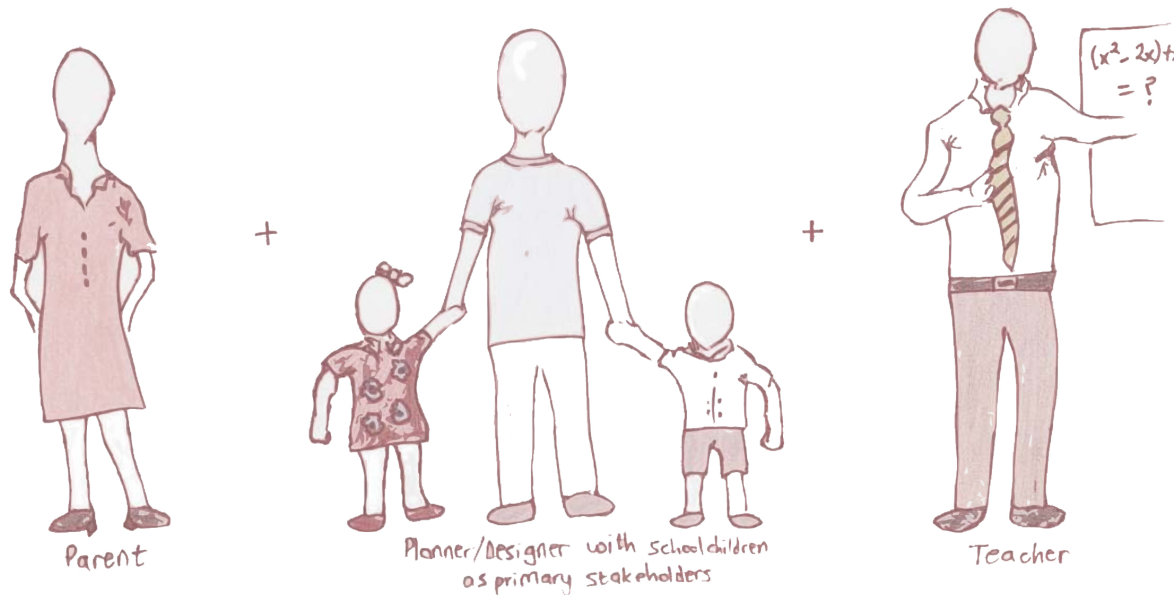


Fig. 2-1: Project Design Philosophy
by Author

At the core of this study is child participation in decision-making regarding schoolyard planning and design. With that in mind, Fig. 2-1 shows the planner/designer grounded in the participatory process by a child in each hand, representing the absolute importance of this stakeholder to research efforts. Flanking the planner (facilitator) and children on either side are the two secondary stakeholders, parents and teachers/staff. Parents help to reinforce the child's preferences in while the teacher provides useful local knowledge and guidance during data collection.

Project Process

TIME (AUGUST 2011 - APRIL 2012)

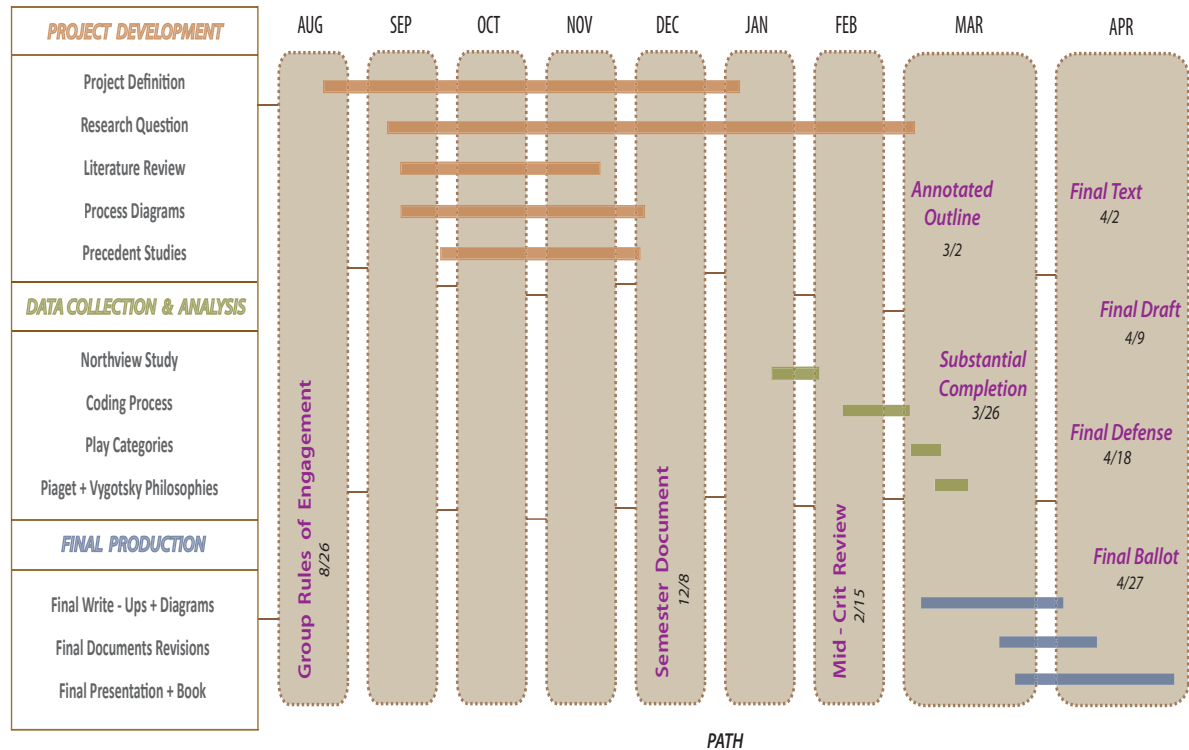


Fig. 2-2: Project Process
by Author

Fig. 2-2: Project Process provides an overview of tasks completed over the Fall 2011 to Spring 2012 Semesters. The timeline of tasks helped the researcher keep track of progress and milestones to accomplish.

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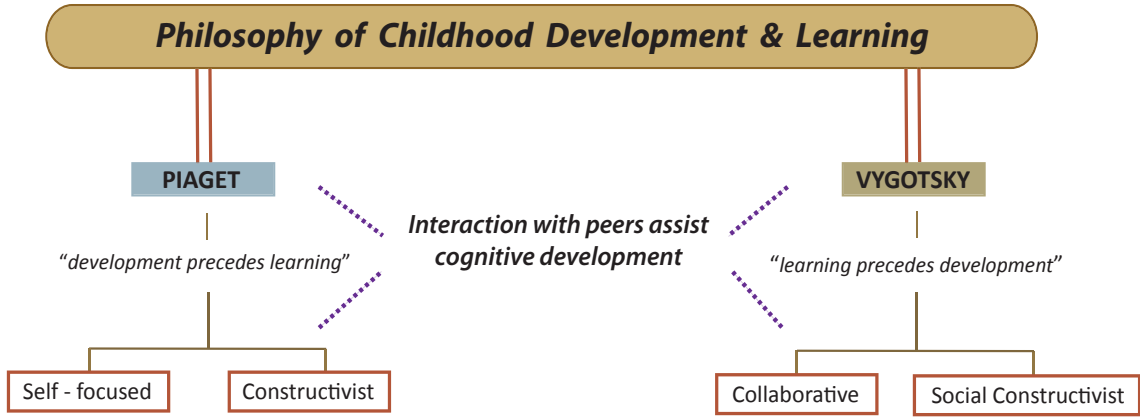


Fig. 2-3: Philosophy of Childhood Development & Learning
by Author

Adapted from (Ben-Ari & Kedem-Friedrich 2000); (California Dept. of Education 2012); (Gordon 2009) and (Lourenco 2012)

Fig. 2-3 reflects Jean Piaget's and Lev Vygotsky's philosophies on cognitive development in children. Piaget defines cognitive development as a process that occurs "when individuals construct their own knowledge and understandings based on interactions and experiences with the physical environment" (Gordon, 50 ; Lourenco, 282,292). Piaget also categorized human cognition as expanding in four stages: sensorimotor (0-2); preoperational (2-7); concrete operational (7-11) and formal operational (11+). In contrast to Piaget's theory on cognition as autonomous, Vygotsky believed that cognitive development occurs within a social context (social constructivist). Vygotsky emphasizes a collaborative environment supporting social interaction between peers with language as a tool (Lourenco, 282). Within a classroom setting, teachers are to act as facilitators in helping "encourage new ideas and experiences and high-order thinking from students" (Ben-Ari & Kedem-Friedrich, 158).

Modern interpretations by educational psychologists have translated these theories into simple phrases; "development precedes learning" in describing Piaget's philosophies and "learning precedes development" for Vygotsky (cde.ca.gov 2012). Despite their differing opinions concerning children and cognition, both Piaget and Vygotsky agree that social interaction between children "contributes to cognitive development, viewing it as a process of continuous interplay between individuals and the environment" (Ben-Ari & Kedem-Friedrich, 154). Recognizing the merits of both philosophical arguments, the researcher set out to help construct a playground for the Northview Elementary School that supports opportunities for self-actualized growth and reflection as well as varied social experiences.

Literature Review Syntheses

Participatory design processes are an increasingly popular practice employed by both planners and designers in helping revitalize community and neighborhood public spaces. Realizing the necessity of fashioning public spaces reflective of the surrounding physical and social context, these professionals are becoming aware of the value of citizen input. While the literature on participatory design processes as a whole continues to expand, the literature on project initiatives relative to children remain scant. Interested in adding to this short yet incredibly valuable literature, this master's report turned to the theories and methods of such luminaries as Randolph Hester and Robin Moore.

Randolph Hester holds paramount the value of community participation in design and planning (pps.org). For Hester, a community space becomes successful when it takes into account the social dynamics of a place, including its, "socio-economic status, life-cycle stages, sex and ethnicity" (Hester 1975, 36). He cautions planners and designers to account for the "differences in interaction between people based on regional, ethnic, class and life-cycle stages" (Hester 1975, 79). An awareness of these conditions results in a public space "reflective of the synthesized needs and wants of its residents or users" (pps.org). Echoing Hester's views on community participation, Smith and Williams emphasize the presence of children during decision-making regarding "decisions that affect their lives" (Smith & Williams 1999, 11). Smith & Williams implore planners and designers

to involve children in the development of spaces such as schoolyard gardens in helping engender "a sense of purpose in contributing to the livelihood of a community and an understanding of local knowledge" (Smith & Williams 1999, 8-10).

Through their seminal book Experiential Landscape, Simkins and Thwaites address a critical aspect of this project's dilemma; planners and designers misinterpreting popular perceptions as the true needs and desires of all children. With statistical evidence from their studies in England using the "Insight Method," the authors found clear differences in the manner in which adults and children perceived or used the community and neighborhood spaces (cscy.group.shef.ac.uk). Thus, it is important to correctly discern the preferences of one set of users from the other, rather than relying on assumptions.

While Kahn and Kellert's theories do not specifically fall under participatory processes, their work still occurs within the confines of school environments. The authors suggest that for children to continually learn and understand the environments in which they interact or play within, these spaces must support "high degrees of visual perception, observation and acuity" (Kahn & Kellert 2002, 44). Kahn & Kellert note that children can expand knowledge of their environment through "exploration, adaptation and direct perception, ably supported by the social structure surrounding them" (Kahn & Kellert 2002, 20). Although the preceding sentence had value, it gained greater

meaning when connected to Piaget's and Vygotsky's philosophies on childhood cognitive development; these philosophies determined that learning occurs through self-discovery, adaptation and interaction with others in their surrounding social environment (Ben-Ari & Kedem-Friedrich 2000) (Gordon 2004).

The issue of "local knowledge" in helping drive meaningful participatory processes in schoolyard planning and design emerged in Natural Learning by Robin Moore & Herb Wong and Landscapes for Learning by Sharon Stine. Moore and Wong defined local knowledge as "identifying resources and user needs across target audiences in helping discern which ideas or concerns will or will not work based on site constraints and potentials" (Moore & Wong 1997, 137, 234). Another connection made to Vygotsky's philosophies is Moore and Wong's suggestion to planners and designers in "nurturing educational settings that lead to paths

of self-discovery with teachers serving as guides" (Moore & Wong 1997, 197). For Stine, participatory processes that relied on local knowledge ensure that schoolyard spaces "reflect the behaviors and cultural legacies of its users, thereby increasing the congruency or fit between the physical site and user" (Stine 1997, 91-92).

Together, these literature reviews (see Fig. 2-4: Literature Review Map) represented a breadth of concepts and philosophies concerning participatory processes with children relative to schoolyard or community spaces. Along with shaping the researcher's understanding of the complexities of participatory design, they served as the primary guiding force of this master's project. For a more detailed discussion of these literary reviews, see Expanded Literature Review under Appendix B.

Literature Review Map

Fig. 2-4: Literature Review Map by Author

Fig. 2-4 illustrates the nine literary sources that helped shaped the researcher's understanding of the complexities of participatory design. Particularly influenced by Hester, Kahn & Kellert, Moore & Wong, Smith & Williams, Simkins & Thwaites and Stine.

Author	Biophilia	Environmental Psychology	Experiential Learning	Human Environment Interaction	Participatory Design	School Environment
Chanse & Thering (2011)				Light Brown	Light Green	
Forsyth, Lu & McGirr (2000)			Light Green		Light Green	
Hester (1975)		Blue			Light Green	
Kahn & Kellert (2002)	Yellow	Blue	Light Green			Dark Red
McNally (2011)				Light Brown		
Moore & Wong (1997)			Light Green	Light Brown	Light Green	Dark Red
Simkins & Thwaites (1999, 2007)			Light Green	Light Brown	Light Green	Dark Red
Smith & Williams (1999)			Light Green	Light Brown		Dark Red
Stine (1997)				Light Brown	Light Green	Dark Red

Precedent Studies

Methodology and Intent

The intent of these precedent studies were to inform and guide the selection of participatory process techniques to engage stakeholders during Northview Elementary Study. Selections included:

- Precedent studies that had complementary research goals.
- Precedent studies that had developed planning and design solutions derived from consistent interaction with target audience.

Precedent Studies Syntheses

In preparing for precedent studies selection, the master's report looked at four project initiatives: Learning Landscapes; Project for Public Spaces; The Environmental Schoolyard in Berkeley, CA and the Experiential Landscape. Of these four projects, the latter two proved especially useful in shaping the participatory process techniques used in the Northview Elementary playground study. Aside from the complementary research goals, these two projects provided clear descriptions of data collection methods and evaluative assessments.

The Washington Elementary School "Environmental Schoolyard" in Berkeley, CA was a ten-year (1971-1981) "joint-action research effort by Robin C. Moore and Herb H. Wong." At the time of this partnership, Moore was "a landscape architecture faculty member at the University of Berkeley while Wong, a field naturalist, served as principal of Washington

Elementary". Moore and Wong aspired to "combine education, design and community development in redeveloping an asphalted schoolyard into an educational community open space resource." The top priorities of this initiative were as follows: (1) "meet the developmental needs of children" and (2) "ensure their genuine participation throughout the process" (Moore & Wong 1997, xv – xix).

Two aspects of the Environmental Schoolyard that proved a strong link to the Northview Elementary Study were its diverse demography across racial and socio-economic characteristics and the importance of existing relationships (Moore & Wong, xv – xix). The researcher found Northview Elementary to be an amalgamation of a diverse mix of racial and socio-economic backgrounds, echoing Moore and Wong experiences at Washington Elementary. The researcher's major professor Katie Kingery-Page has an ongoing partnership with the Northview Elementary School, which helped pave the way for this study, similar to Wong's UC Berkeley connections in jump-starting the Environmental Schoolyard.

Regarding the participatory process used in transforming the Washington Elementary Schoolyard, Moore and Wong catered to a primary target audience of 350 students, from kindergarten to the third grade. In addition to students, Moore and Wong engaged the Washington Elementary teachers and parents as well as residents within a five-block radius of the school. While Moore handled the planning, design and community participation aspects of the project, Wong served as the

general administrator in charge of the Schoolyard's development. Upon identifying target audiences and established roles amongst themselves, Moore and Wong developed a participatory process composed of meetings, workshops, in-service training, behavior mapping, school-community surveys and design workshops (Moore & Wong 1997, 222-33). Together, these techniques helped Moore and Wong to discuss with target audiences such issues as fundraising, brainstorming, curriculum development and patterns of existing schoolyard use. For a more detailed discussion of these techniques, see Expanded Precedent Studies review under Appendix B.

Once Moore and Wong collected and applied the necessary data in transforming the old schoolyard into a thriving natural wonder, they relied on evaluative assessment techniques of questionnaires, interviews and activity logs. These assessment tools helped Moore and Wong discern users' impressions of the schoolyard and the manner in which they utilized site amenities (eric.ed.gov). With its emphasis on child participation and curriculum structures in enhancing students' experiential opportunities and recreational diversity, the Environmental Schoolyard proved an exceedingly valuable precedent resource.

Perhaps the most child-centered precedent, Ian Simkins, Kevin Thwaites and Alice Mathers' "Insight Method" seeks to maximize child participation and voice in decision-making. A participatory process technique, its primary function is to guide

landscape architects, urban planners and designers in examining the existing and aspirational place experiences of primary (elementary) schoolchildren. Originally conceived in 1999 in Sheffield, England with 68 schoolchildren (7-11) as study subjects, the Insight Method comprises qualitative methodologies informed by principles of grounded theory, ethnography and case study (cscy.group.shef.ac.uk).

With a target audience of schoolchildren, teachers, parents and neighborhood residents, the Insight Method uses a sequential pattern of techniques in driving stakeholder participation: semi-structured interviewing; cognitive mapping or drawing; wish pictures and adaptive photographic elicitation. Through these techniques, Simkins and project collaborators were able to identify lasting imagery or emotional attachments, individual or collective perceptions of place and visual or textual representations of aspirations (cscy.group.shef.ac.uk). For a more detailed description of these techniques, see Expanded Precedent Studies review under Appendix B. Four conditions or themes formed the basis of Simkins and collaborators' evaluation of child and adult participation: place or object-specific experiences; feelings and emotional significance; social networks and imagination and temporal aspects. These conditions help ensure an equal participatory process while giving priority to both people and site-specific factors in planning/design improvements (cscy.group.shef.ac.uk).

Elements of Participatory Process Programming

Table 2-1 offers a summary of the researcher's understanding of the literature and precedent studies in helping shape the structure and intent of the participatory process study at Northview. Based on these studies, four elements emerged as crucial to conducting a successful participatory process. These were as follows: **Social Dynamics & Experience**; **Local Knowledge**; **Congruency & Fit** and **Accessibility**. The first element ensured that the researcher's participatory process would result in a schoolyard space that offered varied and age-appropriate amenities to stakeholders. Social Dynamics & Experience dealt with the correlation between potential stakeholders, with the matrix illustrating the corresponding questions and tasks required to achieve these goals and intentions.

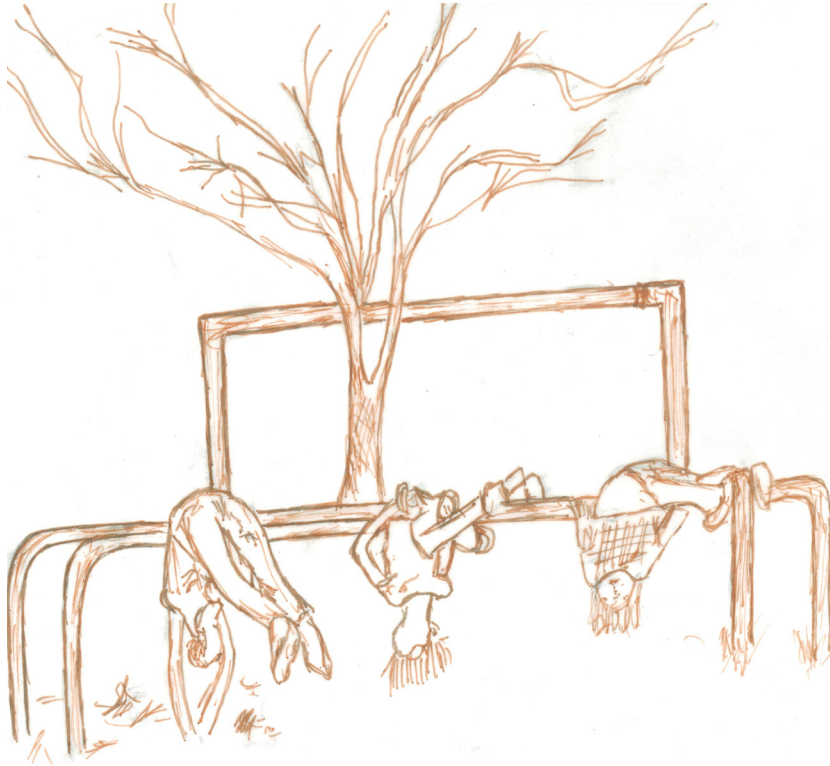
The second element - local knowledge - derived from literature and precedent studies dealt with the correlation between the proposed site's history and legacy to its users. The matrix illustrates the corresponding preliminary questionnaires and tasks required to achieve these goals. Congruency & Fit dealt with site and user connection, with the researcher keen to suggest planning and design recommendations that adhered to both site and user needs. Accessibility, the last element, dealt with site access and linkages in offering universal internal and external access to users. Whereas the first

two principles were primarily the responsibilities of the researcher to discover from interaction with stakeholders, the latter two fell under the jurisdiction of Laura Weatherholt and Rebecca Melvin, in particular, Accessibility. While the two designers handled different portions of the Northview schoolyard site, there was a conscious effort in creating access points and links between these sections.

Together, these four principles contributed to the data collection methods used in soliciting firsthand input from Northview Elementary stakeholders of students (primary); teachers/administrative staff (secondary) and parents (tertiary). Chapter 3, Methods will discuss in detail the data collection techniques used relative to each stakeholder group. The majority of programming questions listed in the matrix formed the basis of questionnaires used during the actual participatory process at Northview Elementary. As discussed in Methods, the researcher applied local knowledge along, with active listening during data collection, ensuring that the participatory process yielded planning and design solutions that synthesized user and site needs, connections and constraints. Thus, this matrix formed the basis of the researcher's responsibility in contributing to the re-design of the Northview schoolyard through the final design proposals of Weatherholt's Ecological Master Plan and Melvin's Site as Playground

Table 2-1: Elements of Participatory Process Programming
by Author

	Goals & Intentions	Program Aspects	Programming/Participatory Questions	Tasks
Social Dynamics & Experience (Hester 1975); (Moore & Wong 1997) and (Simkins & Thwaites 1999, 2007).	Plan/design a space that accommodates a diverse mix of people. Plan/design a space with multiple, age-appropriate uses.	People & Activity Use	How do stakeholders currently perceive the schoolyard? Can the final design strategy offer a balance between educational and recreational opportunities? How can the final design strategy ensure appropriateness of use per stakeholder?	Workshop Sessions; Diary Entries and Questionnaires (participation & reflection)
Local Knowledge (Hester 1975); (Moore & Wong 1997) and (Stine 1997)	Understand history behind the site and its relationship to users.	Site History & Legacy	What have been the most definitive features of the playground? What are the recurring themes or concepts drawn from stakeholder responses? In what manner has the playground been used over the years? What do stakeholders envision being able to do in a new schoolyard?	Stakeholder Workshop & Questionnaires
Congruency & Fit (Moore & Wong 1997); (Simkins & Thwaites 1999, 2007) and (Stine 1997)	Ensure that design reflects a good “fit” between the playground and its users.	Site & User Connection	What are the site’s physical capacities, constraints and potentials? How can the design adhere to observed site conditions? How can the design highlight the behavior or attitude of its users? Are planning/design strategies reflective of users’ synthesized needs?	Site + Stakeholder Response Analyses
Accessibility (Stine 1997)	Emphasize clear, defined pedestrian- and-disabled - user access points. Understand internal and external adjacencies to the schoolyard.	Site Access & Linkages	Which access points are most or least used? What are the internal and external access points to the playground? How can access points cater to pedestrian and disabled users? Can these access points be improved?	Diagram circulation studies conducted by Laura Weatherholt and Rebecca Melvin



METHODS

This section of the report will discuss the participatory process study at Northview Elementary and the criteria used in organizing and identifying stakeholder data.

Overview

The first sub-section of this chapter, "Data Collection" will describe the Northview Elementary School Playground Research Study that began on January 20, 2012 and ended on February 1, 2012. The target audiences for this study were the enrolled students in the After School Program, Northview teachers and parents. The participatory process techniques used in engaging the Northview Elementary stakeholders were as follows: workshops sessions; diary entries; participation and reflection questionnaires. Between these six days, the researcher interacted with 61 students, from kindergarten through to the sixth grade (5-11-years) (see Fig. 3-1: Northview Elementary Study Student Demographics for a full breakdown). The second sub-section of this chapter, "Content Analyses" will discuss the coding categories developed per stakeholder group in analyzing and student, teacher and parent products.

	Gender		Race					
	<i>B</i>	<i>G</i>	<i>W</i>	<i>B</i>	<i>L</i>	<i>A</i>	<i>ME</i>	<i>Mixed</i>
Kindergarten	7	7	7	2	1	2	1	1
First Grade	6	3	4	0	1	1	2	1
Second Grade	6	7	4	1	1	2	2	3
Third/Fourth Grade	4	5	3	0	0	2	0	4
Fifth/Sixth Grade	11	5	7	4	2	0	1	4
Total	34	27	25	7	5	7	6	13

Table 3-1: Northview Student Demographics by Author

Northview Elementary Study Collaboration

Rebecca Melvin
 Site as Playground: Expanding
 the Experience of Play

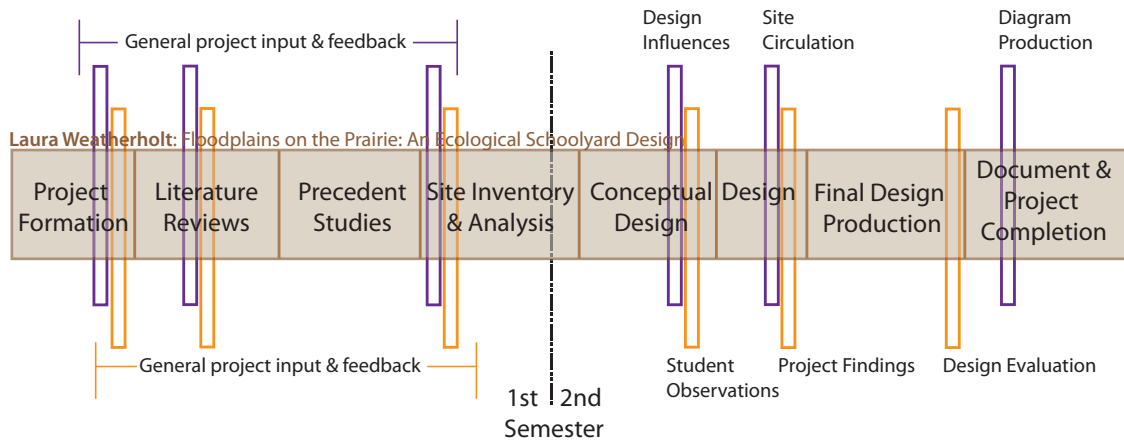


Fig. 3-1: Northview
 Collaboration Timeline
 (Weatherholt 2012)

Kweku Addo-Atuah
 Northview Elementary
 School: An Iterative
 Participatory Process in
 Schoolyard Planning &
 Design

Fig. 3-1 graphically represents the intersection of the projects by three Landscapes of Learning students: Kweku Addo - Atuah, Rebecca Melvin and Laura Weatherholt. The diagram chronicles the working relationship from project formation through to guiding literature and precedent studies until final design realization. While the researcher worked more closely with Laura during this process, the researcher relayed the play and learning preferences of stakeholders to both Laura and Rebecca. Together, these projects ensured a well-rounded planning and design process. in the re-design of the Northview Elementary schoolyard site.

DATA COLLECTION

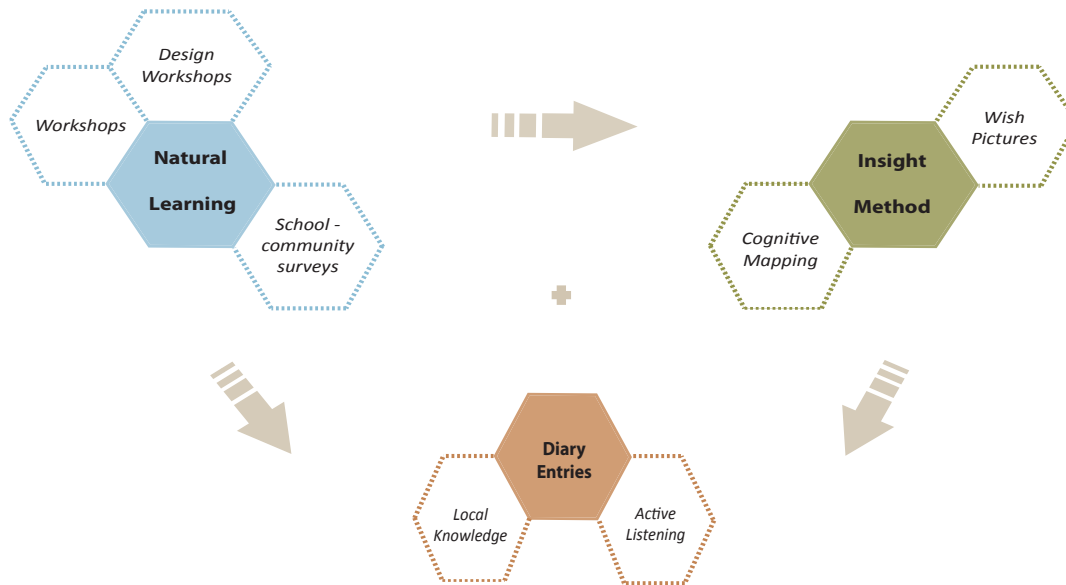


Fig. 3-2: Northview Data Collection Method by Author

Adapted from (Hester 1975); (Moore & Wong 1997); (Simkins & Thwaites 1999, 2007); and (Stine 1997).

Figure 3-2 represents the data collection techniques adapted from the two precedent studies of the Washington Elementary Environmental Schoolyard by Moore and Wong and the Insight Method by Simkins and Thwaites. In dealing with student engagement, the researcher found Moore and Wong’s workshops, school-community surveys and design workshops most applicable in gauging play preferences and wishes. In contrast to using these techniques in separate circumstances, the researcher saw it fit to condense these methods into one large umbrella – “workshops.” The researcher also used school-community surveys - termed questionnaires here - to solicit input from teachers and parents concerning their aspirations of the playground.

Regarding the Insight Method by Simkins and Thwaites, the researcher found the duo’s wish pictures and cognitive

mapping/drawing techniques valuable. Similar to Simkins and Thwaites, the researcher used wish pictures to identify students’ existing and aspirational play preferences. The researcher used cognitive mapping via workshops to understand students’ individual and collective perceptions of the existing playground. The researcher’s original contribution to these adapted techniques was diary entries. These small blue books allowed student subjects to draw, attach images and write their wishes outside of workshop hours.

Aside from these adapted data collection techniques, the Northview Elementary Playground Research Study also relied on the following two elements of thought: local knowledge and active listening. The intent of using these two elements was to discover if they offered any potential benefits to the process.

Day 1 (January 20, 2012)

Observation Day: 2:00 - 5:30pm

when club supervisors begin administering activities for the day. Regarding interaction between club supervisors and students, the researcher noted the level of respect accorded to club supervisors; each student addressed the supervisors with either a "Ms." or "Mr." Supervisors communicated in a clear pitch with appropriate inflections and sentence structure was simple and concise.

Now aware of the logistical structure in place, the researcher made the necessary adjustments to the proposed study to allow project goals to fit in seamlessly. From Day 2 onwards, the researcher arrived each workshop day promptly at 3pm; once on campus, the researcher sought out club supervisors assigned to work with the specific grade levels. This allowed the researcher to quickly brief club supervisors on the day's agenda and gather the resources (paper, pen, markers) to accomplish these goals. Prior to the 1-hour workshop sessions, the researcher was able to observe the students play during recess, helping to note play distinctions across grade levels or gender. Supplementing these observations were photographs and sketch notes supplemented these observations.



Fig. 3-3: Recess Observation
(Melvin 2012)



Fig. 3-4: Recess Observation
(Melvin 2012)

Nicknamed Observation Day, the researcher used this day to familiarize himself with the Northview Elementary playground setting, its students and after school program structure. Meeting first with the After School coordinator Kim Markward, the researcher used this opportunity to establish the purpose and expectations of the research study by explaining project goals and activities planned for each grade level per research day. The meeting also allowed for suggestions by Ms. Markward in fine-tuning the research study's structure. When the researcher voiced concern over the manner in which to interact with the students, Markward suggested an informal meet with the college-aged club supervisors. Club supervisors form a critical core of Northview's after school program; their responsibilities range from serving as play buddies during recess to either food distribution or organizing such activities as science experiments and art/cultural projects.

Upon briefing all 14 club supervisors, the researcher tagged along with Caitlin Luttjohann to witness the after school program in motion. Northview's After School Program begins each day at 3:30pm in the school gym and thereafter, recess on the west playground until 4pm (see Fig. 3-3 and 3-4). Swiftly following recess is a light, healthy snack until about 4:20pm,

Day 2 (January 23, 2012)

3:00 – 5:30pm

Kindergarten club supervisors: Lexy Hetrick & Amanda Kime, Josh

Recess Play Observations

Prior to the workshop session, the researcher was able to witness students in action on the existing playground (see Fig. 3-5). High-activity play areas were the swing sets, monkey bars and basketball court, which also served as a kick ball field. Younger children, in particular kindergarteners through to second graders, showed preference for the swing sets and monkey bars while older children mostly used the basketball court.

The first official day of the workshop sessions with Northview after school students began with the energetic kindergarteners (see Fig. 3-6). The workshop session featured 14 kindergarteners and split evenly between boys and girls. The agenda called for kindergarteners to express through drawings their favorite things to do in the current playground. The researcher also asked the students to denote how often they performed these activities and whether individually or with a group. Realizing quickly their difficulty in illustrating distinctions between individual and group play, the researcher, supported by club supervisors, visited each desk and engaged in dialogue with the students. For a student drawing sample, see Fig. 3-7.



Fig. 3-5: Recess Observation
by Author



Fig. 3-6: Workshop Session
by Author

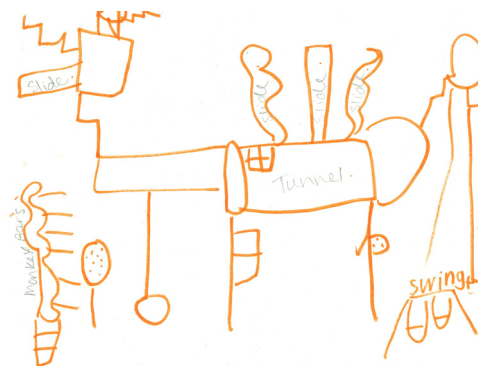


Fig. 3-7: Student Drawing

Day 3 (January 25, 2012)

3:00-5:30pm

First Grade club supervisors: Beth Schneider & Melissa Swietek

Recess Play Observations

Swing sets were again a high-activity play preference for students while the monkey bar saw reduced activity this day. Students seemed content to form little groups of two to three either digging or talking on the sandy section of the playground near and around the lone tree (see Fig. 3-8). Some children ran around playing tag while some were simply content to sit back or stand around observing the activity around them.

The workshop session featured 9 first graders, comprising six boys and three girls. The program asked for students to indicate in their drawings what they considered as the "best" or "worst" feature of the current playground (see Fig. 3-9). The researcher also asked students to denote what feature(s) they would like to see instead in the playground. Amongst the range of responses, a few were particularly memorable to the researcher; a little girl indicated that she "disliked sixth graders" while a little boy disliked that the playground contained so little equipment. Again, the one-on-one dialogue approach proved useful in understanding the children's motivations and reasoning behind their choices. See Fig. 3-10 for a sample student drawing.

Fig. 3-8: Recess Observation
by Author



Fig. 3-9: Workshop Session
by Author



Fig. 3-10: Student Drawing



Day 4 (January 27, 2012)

3:00-5:30pm

Second Grade club supervisors: Corey Duever, Beth Schneider & Melissa Swietek

Recess Play Observations

On this day, swing sets and monkey bars received the most student attention (See Fig. 3-11). The basketball court also garnered significant activity with students engaging in either kickball or dodge ball type games. On the blacktop surface adjacent to the sand pit containing the swing sets and monkey bars, third and fourth-grade students kicked around a soccer ball.

The target audience for the workshop session was the second graders (see Fig. 3-12). The researcher interacted with 13 students, featuring six boys and seven girls. On this day, the researcher sought to find out the kinds of pretend play these second graders indulged in using existing play equipment. Particularly interesting responses ranged from using the balance beam as seesaws and imagining the existing tree as a supporting base for a tree house. Again, the researcher and club supervisors found it helpful to speak individually with each student and learn more about their drawings. See Fig. 3-13 for a sample student drawing.



Fig. 3-11: Recess Observation
(Melvin 2012)



Fig. 3-12: Workshop Session
(Schneider 2012)



Fig. 3-13: Student Drawing

Day 5 (January 30, 2012)

Fig. 3-14: Recess Observation
(Melvin 2012)



Fig. 3-15: Workshop Session
(Burdick 2012)



Fig. 3-16: Student Drawing



3:00-5:30pm

Third/Fourth Grade club supervisors: Ashley Burdick & Caleb Shelton

Recess Play Observations

Monkey bars were the most frequented play equipment this day, with high participation from kindergarteners through to the second graders (see Fig. 3-14). Kickball on the basketball court saw considerable usage as well. The swing sets saw very low activity in comparison to the other workshop days, though it slowly regained its place as one of the children's favorites. A small group of two boys and two girls spent their recess working collaboratively on digging a shallow pit around the tree while other students, both boys and girls took solace in the climbing structures scattered around.

The workshop session featured 9 third and fourth-graders, comprising 2 male students (third-grade boys were not present at this session) and seven female students (see Fig. 3-15). Students' task this day was to express through drawings and/or text, their preferences for a new playground. The researcher encouraged students to be as creative as they wished and not limit their choices. It was during this session that students began illustrating such play elements as water slides and bumper cars, which thus far, were rare occurrences. During this session, students began to communicate their ideas, both graphically and textually, whereas younger years had relied almost exclusively on drawings. Fig. 3-16 is a student sample.

Day 6 (February 1, 2012)

3:00-5:30pm

Fifth/Sixth Grade club supervisors: Soffia Farrall, Caitlin Luttjohann, Josh Reizin & Laura Rose

Recess Play Observations

The last recess observation day (Fig. 3-17) yielded similar results as previous days, although there was an instance of imaginative play with a little kindergartener practicing his karate routine in the middle of the sandy playground. Conclusions based upon these observations revealed that there was a real limitation concerning a variety of play choices and opportunities in the current playground. Most students flocked to the swing sets, monkey bars and basketball court as they offered the most versatility in stationary and/or kinetic movement.

The final workshop session of the Northview research study featured two groups of fifth and sixth-grade students (16), comprising 11 boys and 5 girls. The objective was for students to express through either graphics or text, their "dream playground." Students were to indicate the manner in which they would use the playground and the kind of experiences they sought. The first group showed particular preference for games with rules such as soccer. Here, the researcher applied a collective approach of dialogue, encouraging students to share their ideas with the group, which they did enthusiastically (see Fig. 3-18). The second group closely echoed the first group's preferences but was less extroverted in comparison to the latter; thus, the researcher resorted to one-on-one dialogue. Fig. 3-19 for a sample student drawing.



Fig. 3-17: Recess Observation
(Melvin 2012)



Fig. 3-18: Workshop Session
(Melvin 2012)

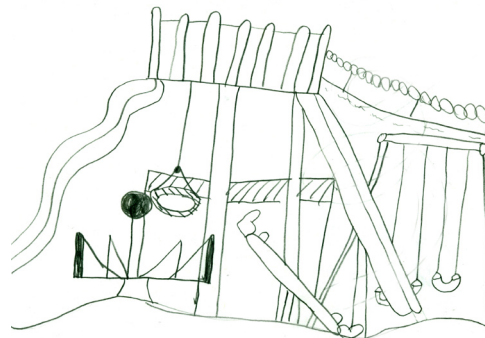


Fig. 3-19: Student Drawing

Diary Entries

Following the 1-hour workshop sessions with Northview Elementary after school students during the five study days, the researcher assigned to each of the 61 participants, a diary to take home. The researcher provided these small diaries to allow students to jot down, draw or attach any images or ideas that engulfed them outside workshop sessions. In contrast to the focused drawings of the workshop sessions, these diary entries had no such stipulations. Students were at their own discretion in expressing whatever ideas appealed to them and that which they deemed suitable for a new playground space. Specific instructions guiding this second participatory technique geared towards students were simple; students were to list their name, age and grade level on these diaries and return to Kimberly Markward's office two days after workshop.

Reflection Questionnaires

The third Northview student participatory technique was a reflection questionnaire. Open-ended in format, the researcher hoped to use these questionnaires in gauging students' opinions concerning the study. The researcher also used these questionnaires to determine from students additional means of idea communication. Thirdly, the questionnaires asked students to provide suggestions in how planners and designers - phrased as "adults" - could work better with children during idea conception.

Northview Teachers/Administrative Staff

Participation Questionnaires

Valuing the teachers' role in the educational development of the Northview Elementary students, the participation questionnaire sought to exploit the knowledge accumulated by teachers from their years spent at the school. The open-ended questionnaire asked teachers to explain past use of the site and suggestions of universal access and play for both disabled and non-disabled students. Additionally, the questionnaires asked teachers to describe how they would utilize the new schoolyard as an outdoor learning environment and indicate their perceived unique identity of the school. All questionnaires designed for teachers were placed in their respective mailboxes with a corresponding e-mail by Ms. Markward; completed questionnaires were returned to the After School coordinator's office.

Reflection Questionnaires

The reflection questionnaires, also open-ended, were to help the researcher determine teachers' reflections concerning their involvement in the research study. Specifically, the researcher aimed to understand two important areas of interest: 1) how planners and designers could better incorporate teachers during the planning and design processes of schoolyard spaces and 2) concrete suggestions to help planners and designers in working more efficiently with children.

Northview Parents

Participation Questionnaires

Recognizing the role of parent as also having a vested interest in the affairs of their children, the researcher developed two sets of questionnaires (participation, reflection) for this stakeholder group. Open-ended in format, the researcher intended for the participation questionnaires to reveal parents' thoughts concerning the possibility of a new playground. Specifically, this questionnaire hoped to gather ideas on how the new playground could serve as a neighborhood resource as well as one that supported parent-child interaction. On the advice of Kim Markward, the researcher distributed questionnaires to parents the former deemed as especially interested in the project. All completed questionnaires were again returned to Markward's office.

Reflection Questionnaires

Open-ended in format, the reflection questionnaires for parents served two purposes. Firstly, the questionnaire hoped to gather suggestions on how to improve collaboration with planners and designers. Secondly, the questionnaire tried to understand from Northview parents, the manner in which planners and designers ought to interact more efficiently with children during planning and design processes.

CONTENT ANALYSES



Overview

Table 3-2: Northview Stakeholder Products by Author

Northview Stakeholder	Product Type	Quantity
Students	<i>Workshop Drawings</i>	80
	<i>Diary Entries</i>	11
	<i>Reflection Questionnaires</i>	21
Teachers/Admin Staff	<i>Participation Questionnaires</i>	13
	<i>Reflection Questionnaires</i>	0
Parents	<i>Participation Questionnaires</i>	2
	<i>Reflection Questionnaires</i>	0

Upon completing the playground study at the Northview Elementary School, the final tally of all stakeholder products was 105, representing drawings, diary entries and questionnaires. For a specific breakdown of reported product type and quantity by stakeholder group, see Table (3-2). From this table, one can clearly infer that students contributed the majority of data products, accounting for nearly 87% of data received. The next step in content analyses was developing a coding structure designed to help organize and interpret stakeholder products into specific categories of repeating themes or patterns. The coding categories developed as illustrated in Fig (3-22) were generated after careful preliminary data review of Northview Elementary stakeholder products. The researcher developed four coding categories for Northview students, three for teachers/staff and two for Northview parents

Interrelationship between data

NORTHVIEW STAKEHOLDER

DATA COLLECTION METHOD

PHYSICAL DATA PRODUCTS

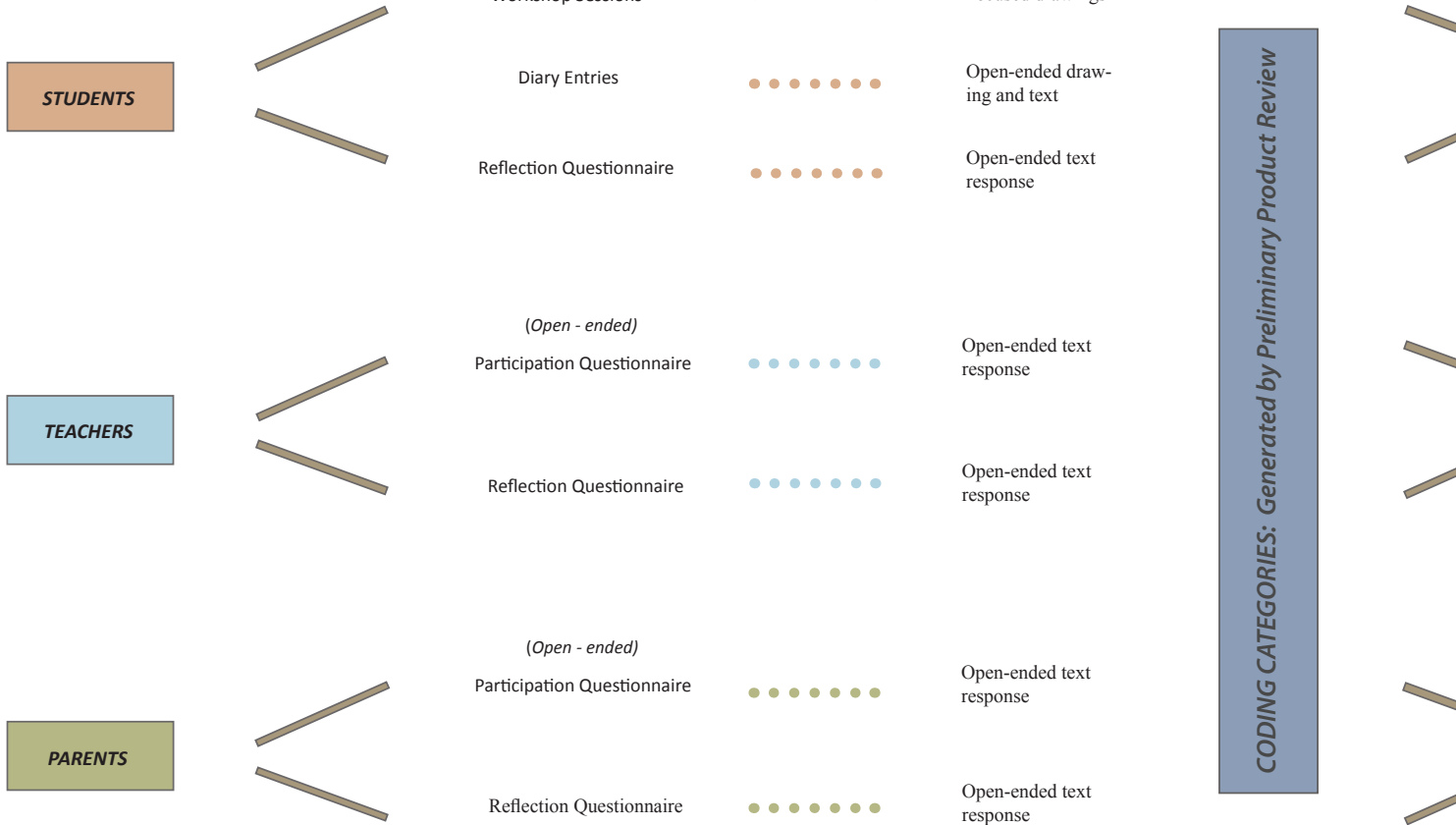


Fig. 3-20: Interrelationship between data collection and coding categories
by Author

ta collection and coding categories

Traditional Play Equipment (TPE)

TPE1 Merry-go-round
TPE2 Monkey bars
TPE3 Seesaws
TPE4 Slides
TPE5 Swings

Non-Traditional Play Equipment (NTPE)

NTPE1 Roller coaster
NTPE2 Rock walls
NTPE3 Swimming pool
NTPE4 Tree house
NTPE5 Trampoline

Ball Field (BF)

BF1 Basketball
BF2 Football
BF3 Kickball
BF4 Soccer

Play Surface (PS)

PS1 Color Pattern
PS2 Rubber Mulch
PS3 Sand
PS4 Turf

Learning/Play Features (LPF)

LPF1 Personal Interaction
(a) tic-tac-toe
(b) digging
LPF2 Physical Interaction
(a) jungle gym
(b) climbing
(c) sand pits
LPF3 Natural Features
(a) observation
(b) gathering

Universal Play & Access (UPA)

UPA1 ADA pathways
UPA2 Cushioned Surfaces
UPA3 Handicap Swings
UPA4 Ramps

Unique Identity (UI)

UI1 After school Program
UI2 Ethnic Diversity
UI3 Special Needs
UI4 Technology

Neighborhood Function (NF)

Note: There was nominal data to justify generating related subcategories

Parent-Child Activity (PCA)

Note: There was nominal data to justify generating related subcategories

Coding Structures

Students

Preliminary data review of student data products yielded the following coding categories: Traditional Play Equipment (TP); Non- Traditional Play Equipment (NTP); Ball Fields (BF) and Play Surface (PS) as illustrated in Fig (3-20). The researcher used these coding categories to identify the existing and aspirational play preferences of students. During analyses, the researcher applied the four codes in evaluating student responses by grade level and gender for products developed in workshops sessions and diary entries. Initially, the researcher attempted to categorize student responses by racial classification. Although Northview Elementary student subjects displayed significant variation in race, there was little evidence of significant distinctions of play preferences by racial group. In evaluating students' reflection questionnaires, the researcher developed two more categories, Ideation Preference and Planner/ Designer + Student Relationship.

Teachers

Preliminary data review of participation questionnaires by teachers yielded three coding categories of Learning/Play Features (LPF); Universal Play and Access (UPA) and Unique Identity (UI). The researcher intended for these codes to help serve three purposes. The first was to identify teachers' aspirations concerning playground use as both an outdoor learning and play resource. The second purpose was in incorporating suggestions for

improving disabled access while the third purpose was to ascertain a perceived unique identity of the school to highlight. Since there were no responses received for reflection questionnaires, the researcher was unable to generate coding categories.

Parents

The researcher developed two coding categories of Neighborhood Function and Parent-Child Activity to analyze parental responses from the participation questionnaires. When it became clear that the response rate would not increase, there was nominal data to accurately generate subcategories. Similar to the reflection questionnaires for teachers, the researcher received zero responses for parents, thus generating appropriate coding categories and related subcategories was not possible

Advanced Analyses

Fig (3-21) is a result of cross-referencing preliminary data results with operational play categories as defined by Jordanian architect Diana Omet and American human development expert Kenneth H. Rubin. Omet's categories, adapted from Mary Sheradin, were in response to her participatory process with children in redeveloping the "Princess Basma Center's 4500 square meter backyard into a play space in the Sahab region of Amman" (Omet 2000). Rubin's categories are from his larger Play Observation Scale, often used to code "age and sex differences in play" (Rubin 2001). In attempting to understand how the participatory process could inform a learning landscape aimed at supporting *cognitive development, physical activity and recreation*, the researcher identified five play categories from Omet's and Rubin's list : *active/functional play; constructive play; exploratory play; games with rules* and *natural play*.

These play categories were complementary to researcher's goals of creating a schoolyard space that helped Northview students develop *fine and gross motor skills* as well as *social interaction skills and communication*. Additionally, the researcher felt that the schoolyard space should allow for *large group play with a prescribed set of rules* and offer both *introspective and shared experiences*. From there, the researcher organized coded data

results within these 5 play categories. As the diagram illustrates, students showed a high preference for active/functional play and games with rules. There was a single mention of exploratory play, (play/tree house) none at all concerning constructive play and very few mentions of natural play, other than a sandbox and pond.

Fig (3-22) diagram represents an intersection of Figures (3-20) and (3-21). The diagram forms connections between Piaget's and Vygotsky's philosophies on cognitive development and the 5 play categories determined as necessary for a learning landscape. Recognizing Piaget's focus on self-initiated discovery, the researcher assigned the following play categories to this umbrella: active/functional; exploratory and natural. These three categories are versatile in that they can occur either individually or in collaboration with others, providing both introspective and shared experiences. Due to Vygotsky's emphasis on collaboration and social interaction, the two play categories corresponding to this umbrella are constructive and games with rules. These two categories allow children to engage each other through a common interest such as soccer or exchange tips in creating such products as a playground puzzle piece. An additional layer to this diagram is highlighting the play categories identified as important to the Northview Administration and Laura Weatherholt as the designer.

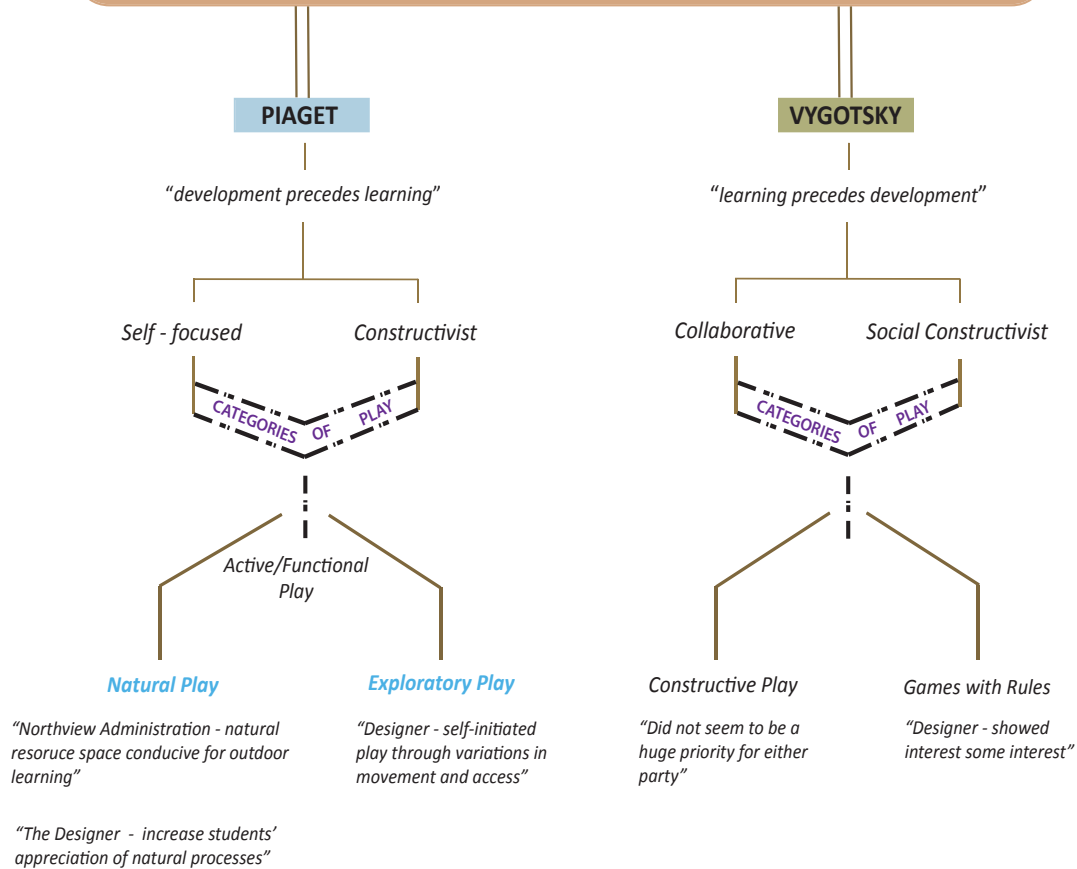
Cross-Reference between Northview Stakeholder Codes and 5 Operational Play Categories

NORTHVIEW STAKEHOLDER	ACTIVE/FUNCTIONAL PLAY	CONSTRUCTIVE PLAY	EXPLORATORY PLAY	GAMES WITH RULES	NATURAL PLAY
STUDENTS	<p><i>Traditional Play Equipment (TPE)</i></p> <ul style="list-style-type: none"> TPE1 Merry-go-round TPE2 Monkey bars TPE3 Seesaws TPE4 Slides TPE5 Swings <p><i>Non-Traditional Play Equipment (NTPE)</i></p> <ul style="list-style-type: none"> NTPE1 Roller coaster NTPE2 Rock walls NTPE3 Swimming pool NTPE4 Tree house NTPE5 Trampoline 	Null	Null	<p><i>Ball Field (BF)</i></p> <ul style="list-style-type: none"> BF1 Basketball BF2 Football BF3 Kickball BF4 Soccer 	Note: There was nominal data to justify a cross-reference
TEACHERS	<p><i>Learning/Play Features (LPF)</i></p> <ul style="list-style-type: none"> LPF1 Personal Interaction <ul style="list-style-type: none"> (a) tic-tac-toe (b) digging LPF2 Physical Interaction <ul style="list-style-type: none"> (a) jungle gym (b) climbing (c) sand pits 	Null	Null	Note: There was nominal data to justify a cross-reference	<p><i>Learning/Play Features (LPF)</i></p> <ul style="list-style-type: none"> LPF3 Natural Interaction <ul style="list-style-type: none"> (a) gathering spaces/activities (b) observation spaces/activities
PARENTS	<p><i>Neighborhood Function (NF)</i></p> <p>Note: There was nominal data to justify a cross-reference</p>	<p><i>Parent-Child Activity (PCA)</i></p> <p style="text-align: center;">Null</p>	Null	Null	Null

Adapted from (Omet 2000) and (Rubin 2001)

Fig. 3-21: Cross - Reference between Northview Stakeholder Codes and Operational Play Categories
by Author

Northview Administration + Designer Place - Based Goals



Adapted from (Ben-Ari & Kedem-Friedrich 2000); (California Dept. of Education 2012); (Gordon 2009); (Lourenco 2012); (Omet 2000) and (Rubin 2001).

Fig. 3-22: Cross - Reference between Northview Stakeholder Codes and Operational Play Categories
by Author

Operational Play Categories: Common Functions

Active/Functional Play - to obtain sensory stimulation through simple, repetitive limb movements (Rubin 2001). See Fig. 3-23 for an example.

Constructive Play - to create or construct a tangible end product (Rubin 2001). See Fig. 3-24 for an example.

Exploratory Play - to gather close visual or auditory information about an object (Rubin 2001). See Fig. 3-25 for an example.

Games with Rules - to engage in competitive group play with a prescribed set of rules (Rubin 2001). See Fig. 3-26 for an example.

Natural Play - to freely explore and manipulate natural elements such as sand, water and logs, thus helping stimulate initial understanding of the environment's biological processes (Omet 2000). See Fig. 3-27 for an example.



Fig. 3-26: Games with Rules
Ink sketch by Author



Fig. 3-25: Exploratory Play
Ink sketch by Author

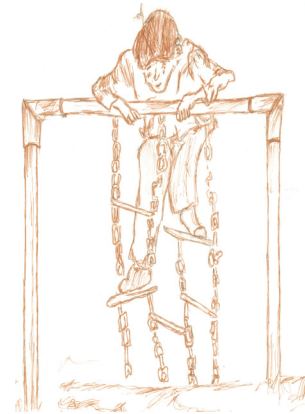


Fig. 3-23: Active/Functional Play
Ink sketch by Author



Fig. 3-27: Natural Play
Ink sketch by Author

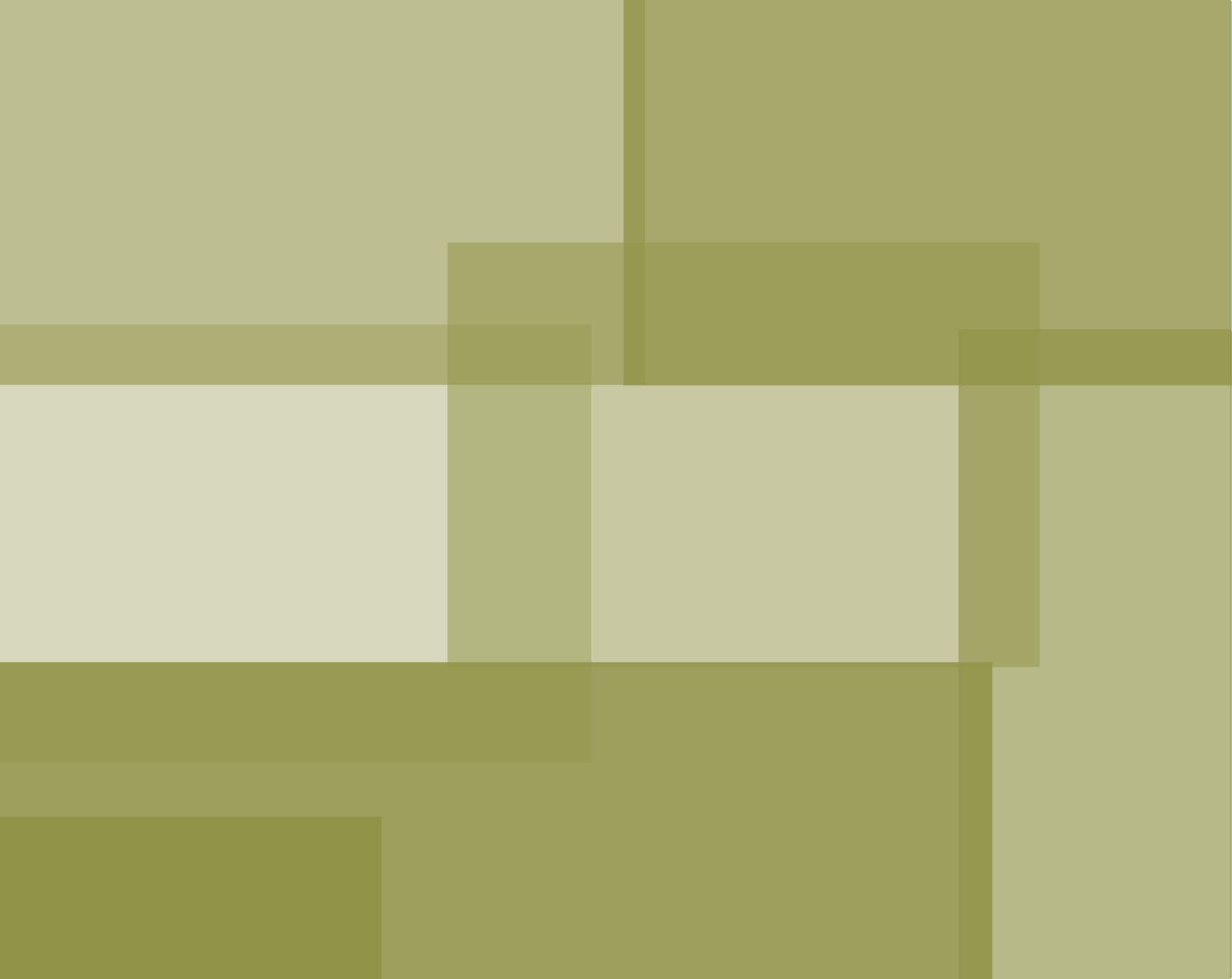


Fig. 3-24: Constructive Play
Ink sketch by Author



FINDINGS

This section of the report will summarize the product results of each stakeholder group and provide an assessment of the Northview participatory process study.



Northview Elementary Student Results

TRADITIONAL PLAY EQUIPMENT (TPE)					NON - TRADITIONAL PLAY EQUIPMENT (NTPÉ)					BALL FIELD (BF)				PLAY SURFACE (PS)			
Seesaws	Slides	Swings	Merry-go-round	Monkey bars	Roller coaster	Rock walls	Pool	Trampoline	Play/Tree house	Basketball	Football	Kickball	Soccer	Color Pattern	Rubber Mulch	Sand	Turf
					Kindergarten to Sixth Grade					Boys							
8	24	11	3	7	1	6	2	8	10	9	6	2	7	0	0	5	0
					Kindergarten to Sixth Grade					Girls							
6	26	20	14	10	1	4	0	9	7	1	1	3	3	1	0	5	2
TOTAL:																	
14	50	31	17	17	2	10	2	17	17	10	7	5	10	1	0	10	2

Table 4-1: All Grades Results
by Author

To generate the final counts of play elements, the researcher compiled student responses from workshop drawings and diary entries by grade and gender under the 4 coding categories. For Northview boys, the highest returns under Traditional Play Equipment were slides, (24x) swings (11x) and seesaws (8x). The top three responses under Non - Traditional Play Equipment by boys were play/tree houses, (10x) trampolines (8x) and rock walls (6x). The most requested elements under Ball Field were basketball (9x), soccer (7x) and football (6x). Sand under Play Surface appeared 5 times while color pattern, rubber mulch and turf had zero responses.

For Northview Elementary girls, the top three responses under Traditional Play Equipment were slides, (26x) swings (20x) and merry-go-rounds (14x). The three highest returning responses under Non - Traditional Play Equipment were trampolines, (9x) play/tree houses (7x) and rock walls (4x). There were 2 two-way ties between kickball (3x) and soccer (3x) and basketball (1) and football (1) under the Ball Field category. Representing the most requested preferences under Play Surface were sand, (5x) turf (2x) and color pattern (1).

Table 4-1 illustrates the final tally of high-priority play elements: slides appeared 50

times; swings appeared 31 times and third-place was a four-way tie between merry-go-rounds, monkey bars, trampoline and play/tree houses, each appearing 17 times. Seesaws occurred 14 times; basketball, soccer and rock walls each garnered 10 responses. Perhaps the most controversial element, sand, appeared 10 times. About half were in favor of it as either a play surface or play element while the other half opposed its presence in the new playground. Aside these coded results, the researcher took into account the uncategorized interests of students and passed these preferences along to Laura Weatherholt and Rebecca Melvin.

Kindergarten Responses

As the youngest study participant group, kindergartners' play preferences fell squarely into the first two student coding categories of Traditional Play Equipment (TPE) and Non - Traditional Play Equipment (NTPE). The most requested play elements across all categories and genders were slides, swings and tie between seesaws and play/tree houses.

Boys:

Under the TPE category, three out of the seven boys requested seesaws and slides, four requested swings, one preferred monkey bars while merry-go-rounds yielded no response. Under NTPE, the only responses were four votes for play/tree houses and one vote for trampoline; Ball Field (BF) and Play Surface (PS) returned zero responses.

Girls:

Out of the six girls, one requested seesaws, slides appeared five times, swings thrice; merry-go-rounds had no response while monkey bars appeared twice. Under the NTPE category, the only response was for play/tree house; Ball Field yielded zero responses while Play Surface produced two responses, one for sand and the other turf.

Slides	
<i>Boys</i>	<i>Girls</i>
3	5

Table 4-2a: Kindergarten Top Responses
by Author

Swings	
<i>Boys</i>	<i>Girls</i>
4	3

Table 4-2b: Kindergarten Top Responses
by Author

Play/Tree houses	
<i>Boys</i>	<i>Girls</i>
3	1

Table 4-2c: Kindergarten Top Responses
by Author

First Grade Responses

Table 4-3a: First Grade
Top Responses
by Author

Slides	
Boys	Girls
3	2

Table 4-3b: First Grade
Top Responses
by Author

Swings	
Boys	Girls
2	1

Table 4-3c: First Grade
Top Responses
by Author

Rock walls	
Boys	Girls
0	1

Similar to the kindergarteners, the majority of the 9 student responses fell into Traditional Play Equipment (TPE) and Non - Traditional Play (NTPE), along with some support from Ball Fields. The most requested play element across all categories and genders was slides, with a two-way between swings and play/tree houses. The third preference was a three-way tie between monkey bars, rock walls and basketball.

Boys:

Under the TPE category, one out of the six boys preferred seesaws, slides appeared thrice; swings accounted for two responses while merry-go-round and monkey bars received zero and one response respectively. Under the NTPE category, only trampoline and play/tree house yielded results of one and two respectively. Under Ball Field, basketball appeared twice and soccer once while Play Surface yielded one vote for sand.

Girls:

Out of the three girls, none requested seesaws, two voted for slides and one opted for swings. Merry-go-rounds and monkey bars yielded zero responses. Under NTPE, rock walls produced two responses and one vote for play/tree house. Kickball under the Ball Field category produced one response while Play Surface returned zero results.

Second Grade Responses

For the 13 second-graders, the vast majority of responses fell under the first two coding categories of Traditional Play Equipment (TPE) and Non-Traditional Play Equipment (NTPE). The most requested play elements across all categories and genders were slides, swings and merry-go-rounds.

Boys:

Under TPE, two out of the six boys requested seesaws; slides received votes across the board while swings yielded none. One vote went to merry-go-round while monkey bars produced zero. Under NTPE, there was one response each for rock walls and play/tree house. Ball Field yielded one vote for basketball while Play Surface had none.

Girls:

None of the seven girls requested seesaws; slides on the other hand, appeared five times while swings appeared thrice. Like slides, merry-go-round appeared five times while monkey bars received zero votes. Under NTPE, roller coaster appeared once while trampoline and play/tree house each received two votes. Ball Field and Play Surface yielded no responses.

Slides	
<i>Boys</i>	<i>Girls</i>
6	5

Table 4-4a: Second Grade Top Responses by Author

Merry-go-round	
<i>Boys</i>	<i>Girls</i>
1	5

Table 4-4b: Second Grade Top Responses by Author

Play/Tree house	
<i>Boys</i>	<i>Girls</i>
1	2

Table 4-4c: Second Grade Top Responses by Author

Third/Fourth Grade Responses

For the 9 third and fourth-graders, the vast majority of responses fell under the first coding category of Traditional Play Equipment (TPE) with much smaller representations across the other three categories of Non - Traditional Play Equipment (NTPE); Ball Field and Play Surface. The top three play requests across all categories and genders were slides, swings and merry-go-rounds.

Boys:

The two boys' play preferences in this cohort group corresponded with the first three coding categories. Under TPE, only slides and merry-go-rounds yielded responses, with both receiving a vote while trampoline under NTPE, was the only play element requested with a single appearance. Ball Field yielded two responses, with basketball and kickball accounting for these votes. Play Surface had no response.

Girls:

Play preferences by the 3 third-grade girls were concentrated in the Traditional Play Equipment (TPE) coding category. While slides, swings, merry-

go-round and monkey bars received responses, seesaws had no such luck. Slides and swings each appeared twice, with an appearance each for merry-go-round and monkey bars. There was no interest in play elements within the other three categories. Similar to the third-grade girls, the fourth-grade girls expressed clear partiality for play elements within the TPE category. Seesaws and monkey bars appeared twice, slides received four times while swings and merry-go-rounds each appeared thrice. One vote each for trampoline and sand (in opposition) accounted for representation under NTPE and PS; Ball Field yielded no response.

Swings	
Boys	Girls
0	5

Table 4-5b: Third/Fourth Grade Top Responses by Author

Slides	
Boys	Girls
1	6

Table 4-5a: Third/Fourth Grade Top Responses by Author

Monkey bars	
Boys	Girls
0	3

Table 4-5c: Third/Fourth Grade Top Responses by Author

Fifth/Sixth Grade Responses

This age and grade cohort group (16) of Northview Elementary students expressed greater variation in play preference across the four coding categories in comparison to younger grade levels. Male participants showed particular preference for organized team activities such as football and soccer. A few girls also indicated soccer, kickball and football as interests. Overall, the top three responses were slides, trampoline in second place and a third-place tie between swings, football and soccer.

Boys:

For the 2 fifth-grade boys, only slides and swings appeared within Traditional Play Equipment category, (TPE) with the former yielding all four votes and the latter just one. Under Non- Traditional Play Equipment, (NTPE) there was one response each for rock walls, swimming pool, trampoline and play/tree house. Ball Field (BF) yielded three responses for football and two for soccer while Play Surface yielded none.

There was at least one response in all four coding categories by the 7 sixth-grade boys. Similar to the fifth-grade boys, slides and swings were the only subcategories under TPE represented, with both appearing twice. Again, rock walls (2) swimming pool, (1) trampoline (3) and play/tree house (1) made

appearances under NTPE. Under BF, there were three appearances each for basketball, football and soccer while kickball yielded one vote. The fourth category PS yielded two responses for sand, specifically for use as sand boxes.

Girls:

For the 2 fifth-grade girls, play elements under TPE and BF were particularly popular. While seesaws had no votes, there were two responses each for slides, swings and monkey bars and just a vote for merry-go-round. Under NTPE, trampoline appeared twice and a single response for play/tree house. There was one response each for football and kickball, two for soccer and none under the third category of Ball Field. Under the fourth category PS, there was a single vote for sand, specifically against it as a surface choice.

Regarding the 3 sixth-grade girls, play preferences fell largely under the Traditional Play Equipment (TPE) and Non - Traditional Play Equipment (NTPE) categories. TPE yielded two responses each for seesaws and swings, one each for merry-go-round and monkey bars and three for slides. NTPE produced one response for rock walls and three for trampoline; Ball Field had no responses while PS received two for sand, one in favor and one in opposition.

Slides	
Boys	Girls
6	4

Table 4-6a: Fifth/Sixth Grade Top Responses
by Author

Trampolines	
Boys	Girls
4	5

Table 4-6b: Fifth/Sixth Grade Top Responses
by Author

Soccer	
Boys	Girls
5	2

Table 4-6c: Fifth/Sixth Grade Top Responses
by Author

Diary Entries' Responses

Of the 11 diary entries returned, there were five boys and six girls, representing the first, second and fifth grade. The most requested play elements across all categories and genders were slides as the highest priority, a two-way tie between swings and monkey bars and third place going to play/tree house.

Boys:

For the 3 third-grade boys, Traditional and Non - Traditional Play Equipment (NTPE) were favorites; under the former, there was one response each for seesaws and swings, none for merry-go-round, three for slides and two for monkey bars. For the NTPE category, there were two responses for rock walls, and one each for trampoline and play/tree house. Under Ball Field (BF), there was one response each for basketball and soccer while Play Surface (PS) yielded two responses of sand (sand box, full surface covering). Regarding the 2 second-grade boys, there was one response each for seesaws, swings and merry-go-round, while slides and monkey bars each recorded two votes under the TPE category. The NTPE category yielded two votes, one for trampoline and the other for play/tree house. Ball Field recorded a single vote for basketball while Play Surface recorded none.

Girls:

The 2 first-grade girls expressed high priority of play elements under the two categories of Traditional Play Equipment (TPE) and Non - Traditional Play Equipment (NTPE). TPE yielded zero responses for both seesaws and merry-go-rounds, one each for slides and monkey bars and two votes for swings. The NTPE category produced a single response each for rock walls, trampoline and lay/tree house; there was a single record for basketball under Ball Field; no responses yielded under Play Surface. In coding the 3 second-grade girls' responses under TPE, seesaws and monkey bars appeared once, slides and swings twice and merry-go-round thrice. Play/tree house was the only appearance under NTPE; Ball Field had no responses while PS yielded two responses, one each for sand (opposition) and turf (preferred surface). The lone fifth grade girl expressed an interest in swings, monkey bars, football, kickball and soccer.

Slides	
Boys	Girls
5	3

Table 4-7a: Diary Entries' Top Responses
by Author

Monkey bars	
Boys	Girls
4	2

Table 4-7b: Diary Entries' Top Responses
by Author

Play/Tree house	
Boys	Girls
2	2

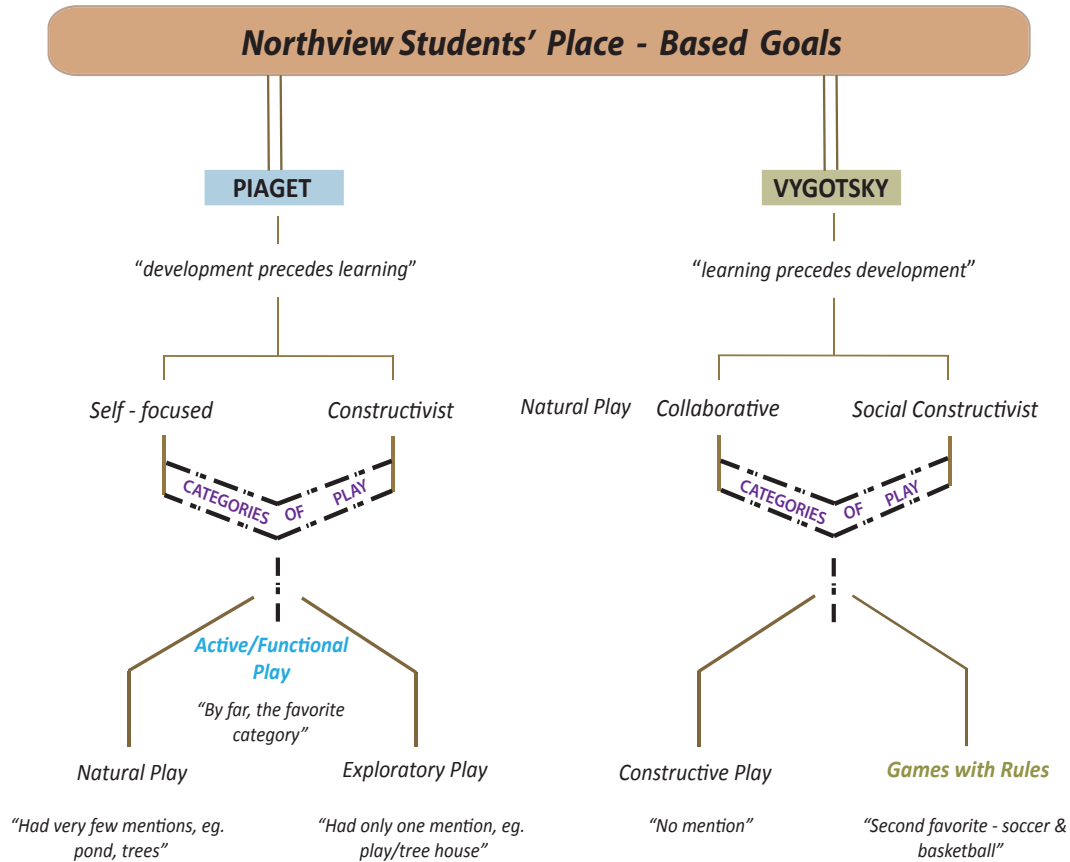
Table 4-7c: Diary Entries' Top Responses
by Author

Uncategorized Interests

In coding Northview Elementary students' drawing and diary entries under the four established categories, there were several instances in which certain play elements did not correspond with any of the related subcategories. Thus, the researcher kept running tabs of the frequency in appearance by these play elements; nearly all of these interests were by fifth and sixth-graders. The final tally of uncategorized play interests was as follows: badminton (1); balance beam (1); baseball (3); fence (1); pogo sticks (2); pond (1); telescope (2); tetherball (3) and tic-tac-toe (1). Additionally, tire swings (5); tunnel (1); wall ball (2) and zip-line (4). The most requested uncategorized interests of play were tire swings, zip-lines, baseball and tetherball. As inferred by the responses of the Northview students, elements corresponding to *active/functional play* and *games with rules* were exceedingly popular as seen in Fig. 4-1.

Reflection Questionnaires Responses

The Northview Elementary participatory process research study yielded 21 student reflection questionnaires; one master sheet each for kindergarten, first and second grade; 2 from the third and fourth-graders and 16 from the fifth and sixth-graders. Under the first coding structure of Ideation Preference, students showed partiality to model-building (8x), either through clay or the computer in expressing ideas. Painting and collage-making appeared three and two times respectively; one student also indicated a site visit as a way of communicating ideas to a planner or designer. Regarding the second category of Planner/Designer + Student Relationship, students indicated an overwhelming preference in working directly and collaboratively with these professionals during ideation (8x). Four students treasuring their autonomy, indicated their choice on working alone, preferring these professionals to merely provide directions.



Adapted from (Ben-Ari & Kedem-Friedrich 2000); (California Dept. of Education 2012); (Gordon 2009); (Lourenco 2012); (Omet 2000) and (Rubin 2001).

Fig. 4-1: Northview Students Place - Based Goals
by Author

Supporting Stakeholder Results

Teacher/ Administrator Responses

The researcher received 13 out of a possible 60 participation questionnaires and none at all of reflection questionnaires from Northview Elementary teachers. Teachers expressed particular preference for physically engaging play elements for the students; play features such as climbing structures and jungle gyms received eight and six votes respectively. Personal interaction type play under Learning/ Play Features received just one response each for digging and sand pits. Natural interaction features like observation and gathering spaces or activities appeared twice and once respectively.

Concerning responses under the coding category of Universal Play & Access, (UPA) this stakeholder group showed an overwhelming preference for ramps in a new playground, appearing seven times. The second priority for teachers was handicap swings, with three votes; ADA-compliant pathways and cushioned play surfaces received two votes each. The third coding category, Unique Identity (UI) intended to highlight an aspect of Northview Elementary distinct from other Manhattan schools, revealed ethnic diversity as the clear winner. While ethnic diversity yielded nine responses, technology appeared twice while after school program and special needs care each received a vote.

Parent Responses

The researcher received two participation questionnaires out of 40 possible and zero reflection questionnaires. Of the participation questionnaires received from two Northview Elementary parents, these parents were interested in a multi-dimensional and varied play environment for their children. These parents expressed interest in all manner of climbing

structures and slides, which would allow their children to play at a variety of vertical and horizontal levels. Safe play was also a concern of these parents, with one parent insisting on surfaces like rubber mulch as opposed to gravel and the other on clear visual sightlines as opposed to hidden areas.

STUDY LIMITATIONS

Northview Research Study Limitations

Introduction:

While the participatory process research study conducted at Northview Elementary School produced a wealth of knowledge essential in furthering the goals of this master's project, it was not without its limitations. The three limitations that the researcher deemed as having potentially significant impacts on the course of the research study and resultant decisions or choices made are as follows: student responses; low teacher and parent involvement and lack of a post-occupancy evaluation.

Conventional Play Preferences

Upon compiling student responses based on the established coding categories, the researcher reflected on how these results could have been different. Unwilling to impose ideas on the students, the researcher at the time did not realize the value of displaying examples of play that children nationally and internationally engage in on a daily basis (Omet, 2000). The vast majority of Northview Elementary student responses fell under the more conventional elements of play such as slides and swings, with only a few instances of excitement such as zip-lines. One cannot blame these students however, as from the researcher's conversations with them, they were merely spouting off play features they had personally encountered. Perhaps had the researcher shown each grade level these examples during workshop sessions, there would have been greater mention of more constructive, exploratory and natural play features. This slight adjustment to workshop sessions could have

potentially resulted in vastly different responses in aspirational play preferences.

Limited teacher and parental involvement

Another study limitation that caused the researcher to reflect was limited teacher and parental involvement. While the study emphasized student participation, the researcher recognized the input of teachers and parents as important due to the integral role they play in children's continued growth and development. The researcher was particularly interested in drawing upon the knowledge base of teachers due to their long-standing relationship to the school. The researcher aimed to gain a greater understanding of the history of the playground and identify any consistencies or variations of use by students over the years. Greater teacher involvement could have allowed the researcher to properly discern the manner in which the former intended to utilize the new playground as an educational and recreational resource. Such knowledge could have resulted in the Ecological Master Plan as more reflective of teacher aspirations. Greater parental involvement could have added elements to the playground that served as both a school and neighborhood resource in addition to reinforcing student responses.

Post - occupancy evaluation

The third limitation of the study is the impossibility

of conducting a post-occupancy evaluation of the playground at this time. The purpose of a post-occupancy evaluation is to understand from the users of a built project, their opinions and concerns of the project's functions. It is a way to assess whether the project is complementary or in opposition to users' needs and interests. With the researcher so invested in helping develop a play environment through the Ecological Master Plan as evocative of the Northview Elementary spirit and verve, this would have been an invaluable opportunity in quantifying the success or failure of both the participatory process and final design solution.

Summary:

While the researcher acknowledged the aforementioned concerns as credible limitations on the research study, perhaps the most significant limitation is on the proposed recommendations in improving participatory processes with children. Because the researcher received only "reflection" input from Northview students and none from teachers or parents, the 5 recommendations as outlined in the following chapter are agglomerations of student responses and the researcher's own observations. The limited recommendations will help inform the participatory process approaches of urban planning and landscape architecture students and practitioners.



CONCLUSIONS

This chapter comprises four subsections. Discussion will cover the Assessment of the Northview Ecological Master Plan; Theoretical Comparisons and Contrasts of guiding literature and Project+Researcher Reflections. The chapter will conclude with a set of recommendations designed to improve participatory processes with children.

ASSESSMENT OF ECOLOGICAL MASTER PLAN

Ecological Master Plan

Fig. 5-1: Ecological Master Plan
(Weatherholt 2012)

- i. Topography map showing new drainage
- ii. Diagram showing layers of habitats
- iv. Notations for construction in the garden
- v. Narrative text- Goals for the site and how/where they were achieved

Legend

1. Trail system
2. Labyrinth
3. Rock Seat Wall
4. Outdoor Classroom
5. Observation Deck
6. Boardwalk
7. Dry Creek Bed
8. Butterfly Garden
9. Blacktop Activity Area
10. Playground
11. Sandbox
12. Bike Parking
13. Parking Lot
14. Rain Garden
15. Infiltration Cell
16. Mounds
17. Picnic Table
18. Stepping Stones
19. Garden Planters
20. Garden Shed
21. Blacktop Paintings
22. Flower Bed
23. Sign
24. Basketball Hoop
25. Emergency Access Road

Figure #Ecological Master Plan

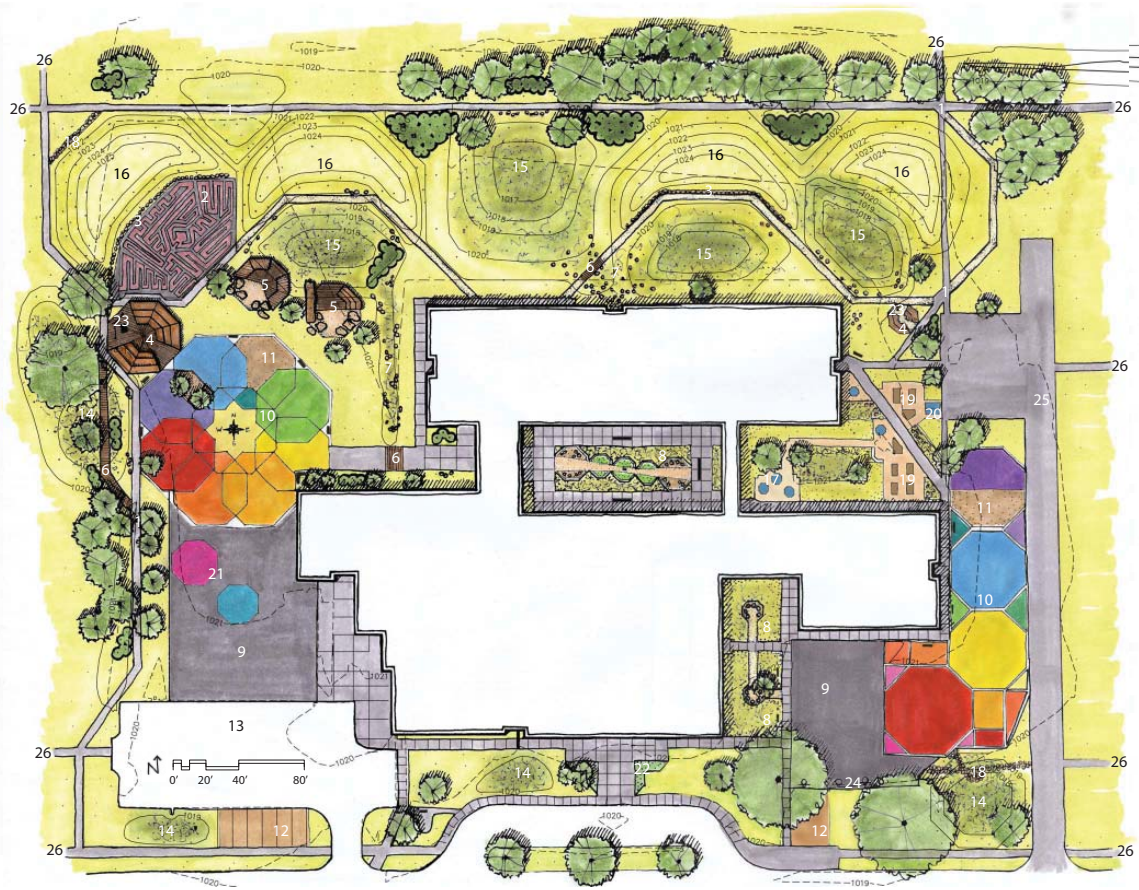


Fig. 5-1: Ecological Master Plan
(Weatherholt 2012)

Assessment of Northview Ecological Master Plan

Introduction:

The first sub-section of this chapter offers an assessment of the Ecological Master Plan (Fig 5-1) developed by Laura Weatherholt. The Master Plan illustrates the proposed changes for the re-design of the Northview Elementary 17-acre schoolyard site. The Ecological Master Plan includes two playground spaces, one each for the eastern (K-2) and the western (3-6) sections of the school site, amenities like an outdoor classroom and ecological systems like infiltration cells. The purpose of the evaluation was to assess the designer's success in synthesizing varying user interests in creating a learning landscape supportive of [cognitive development](#), [physical activity](#) and [recreation](#). In reviewing the design, the researcher used the 5 operational play categories as defined in the Methods section of the report. The play categories were as follows: active/functional; constructive; exploratory; games with rules and natural play.

Active/Functional Play

Concerning elements of active/functional play, the Ecological Master Plan contained two playground spaces (Fig.5-2) and several play mounds. Within these playground spaces, the Ecological Master Plan supported a myriad of play features designed to keep children moving and enhance fine and gross motor skills. These play spaces included handicap-accessible and traditional swing sets, an array of slides, roped bridges, monkey bars, balance beams and spring riders. Other play opportunities designed to develop dexterity included spring riders and

whirligigs. The mounds combine both elements of active/functional and natural play; this play feature allows both climbing and sledding opportunities while its physical composition exposes students to play through natural materials as grass and sand.

Constructive Play

The Ecological Master Plan incorporated such elements as an outdoor classroom (Fig. 5-3, 5-4), rain and flower gardens and blacktop activity area as representative of constructive play. The outdoor classroom was a particularly important preference for several parties, particularly the Northview Administration. Such a space, cleverly enclosed with an overhead cover to protect from inclement weather, allows teachers and students to expand the learning process outdoors. In addition, it allows students to engage in such activities such as artwork and clay-modeling, thereby removing worries of cleanliness typical of indoor classrooms.

The rain gardens offer joint benefits for both stakeholders and the school grounds. The rain and flower gardens present a real learning opportunity in teaching Northview students how to properly maintain the day-to-day functions of a garden. The rain gardens will also help control the substantial water drainage issues at the school. The blacktop activity area encourages patronage as a multi-use space for both Northview students and teachers, ranging from kickball to tic-tac-toe. These amenities allow for exchange of knowledge and encourage interaction between peers and teachers.



Fig. 5-2: West Playground
(Weatherholt 2012)

Exploratory Play

Regarding features characterizing exploratory play, the Ecological Master Plan provides such amenities as a labyrinth, observation decks and boardwalks. More so than the other elements incorporated in the Northview master plan, the labyrinth allows for a deeply personal, introspective experience. It presents an opportunity for self-reflection and understanding in the midst of a highly-social setting. The observation decks expand Northview students' play vertically, helping develop spatial visualization skills through instruments like telescopes or binoculars in observing the activity occurring within the play site. Perhaps one of the researcher's favorite elements in the master plan is the boardwalk at select vantage points within the Northview property boundaries. The boardwalks encourage movement within the school grounds as well as a sense of adventure in discovering what occurs in other sections of the site; they also allow for spontaneous interaction between users.

Games with Rules

For this play category, the Ecological Master Plan relied on basketball hoops and a blacktop activity area. The designer envisioned the blacktop activity area as serving multiple purposes, ranging from kickball to tag play to tic-tac-toe. While these amenities are sufficient for games with rules opportunities, the researcher would have liked to see a dedicated turf section for multi-use as a soccer and football field. The researcher believes

games with rules are an important component of any playground or schoolyard space, a statement supported by Northview students in their play preferences. These activities are critical in helping develop children's ability to adapt to and follow set rules as well as promoting emotional maturity through sportsmanship. Aside from these benefits, games with rules also support social interaction, physical activity and recreational opportunities.

Natural Play

The Ecological Master Plan provides several amenities of choice for this play category, including such features as a trail system, a butterfly garden, sand boxes, mounds and tree forts. Particular favorites include the tree forts which provide climbing and observation opportunities through telescopes and sand boxes which contain wooden or bone artifacts from which children can mimic archaeological digging. Aside from supporting both active and passive recreational opportunities, natural play helps stimulate children's understanding and appreciation of the natural environment. Learning, discovery and creative reasoning can occur through natural play when children observe and manipulate objects like plant species and sand structures to their heart's content.

While not specifically designed for play, the inclusion of dry creek beds (Fig. 5-5) and infiltration cells help to maintain and control the levels of on-site rainwater. This presents another learning opportunity for children with instruction by teachers on the proper function and relevance of these water management systems to the site's usability.



Fig. 5-3: Outdoor Classroom
(Weatherholt 2012)

Fig. 5-4: Small Outdoor Classroom
(Weatherholt 2012)



Summary:

The Ecological Master Plan proves successful in synthesizing the interests of the three Northview Elementary stakeholder groups, the researcher and Laura Weatherholt's personal design ethic. In addition to deftly accommodating a learning landscape through the defined play categories, the Ecological Master Plan also provides strategies like infiltration cells to help Northview manage its significant stormwater drainage issues. In attempting to identify how the Ecological Master Plan translated ethnic diversity, one need not look further than the labyrinth, the variety of intimate or large gathering spaces and use of color. These site amenities pay homage to the diverse Northview population, offering an interchange between those cultures that prefer personal, inward interaction to those that thrive on expansive, highly-social spaces. Another aspect worth including would be a dedicated permanent mural feature where the children could express their culture through media like traditional paint, spray paints or even screen prints.

Through the course of final edits, the researcher came across the issue of site interpretation as discussed in Julie Johnson's *Design For Learning: Values, Qualities, and Processes of Enriching School Landscapes*. Discussion regarding the manner in

which designers translated such intangible elements as cultural and ethnic diversity into physical elements further inspired the researcher to expand assessment of the Ecological Master Plan. Taking a cue from this article, the Ecological Master could further enhance its celebration of Northview's cultural and ethnic diversity through the establishment of an international garden. An international garden, brimming with plant and food cultivars representative of the diverse Northview population, provides an additional learning experience for the school and community (Johnson 2000, 50).

As expressed in Johnson's article, the school which contained an international garden used this simple element to organize such events as festivals. Not only did this further engender cultural understanding, but also increased user's attachment to the schoolyard and established the site as an important community resource. The school's expansion of this element into something so meaningful has strengthened the researcher's opinion concerning the qualities of a site, be they tangible or intangible. A site's success extends far beyond its planner or designer's intended use. It is the manner in which its users decide to adapt these prescribed functions to fit daily needs that define its success in providing choice and flexibility.

Fig. 5-5: Dry Creekbed
(Weatherholt 2012)





THEORETICAL COMPARISONS AND CONTRASTS

Comparisons to Moore & Wong and Simkins & Thwaites

Driving Research motivations

Inspired by the United Nation's Convention on the Rights of a Child (CRC) mandate granting children rights in decision-making, the researcher found a kindred connection in the Environmental Schoolyard and Insight Method project initiatives. Together, these project initiatives proved comparable to the Northview Elementary Iterative Participatory Process Study. The two defining links between these literary and precedent studies to the researcher's study are as follows: (1) child democracy as driving research motivation and (2) target audience and engagement techniques.

Similar to Moore and Wong's ideals in developing a participatory process focused on the needs of children, the researcher's goals were to confirm the value of child input in creating a schoolyard space reflective of its target audience. A particular aspect of Moore and Wong's priorities in "meeting the developmental needs" connected with the

researcher who expressed an interest in providing appropriate play opportunities per grade level (Moore & Wong 1997, xv – xix). In translating this priority, Moore and Wong used design workshops where each grade bore responsibility for particular schoolyard design aspects; the researcher used workshop sessions to solicit play preferences from different grades. A particular aspect of Simkins and Thwaites' Insight Method that corresponded with the researcher's dilemma of limited child presence during decision-making was its emphasis on "giving children a voice" (cscy.group.shef.ac.uk). Another aspect of the Insight Method that connected to the researcher's project intentions was its focus on determining existing and aspirational place experiences. While Simkins and Thwaites primarily relied on semi-structured interviewing to identify these experiences, the researcher, received this information through dialogue and drawings from workshop sessions.

Target audience and data collection techniques

Akin to Moore/Wong and Simkins/Thwaites, the researcher developed participatory processes appropriate for the intended target audiences. Both professional partnership teams and the researcher served as the facilitators of the process and held such responsibilities as articulating goals and guiding progress (Moore & Wong 1997, 22). The target audiences in common for both the researcher and the Moore/Wong and Simkins/Thwaites' team were elementary students, teachers and parents. Similar to Moore and Wong, the researcher used a mix of workshops, design workshops and school-community surveys in engaging Northview Elementary stakeholders.

Whereas Moore and Wong used these techniques to acquire input at different periods, the researcher adapted and condensed these strategies to occur in tandem. Similarly, the researcher collectively applied cognitive mapping and wish pictures in workshop sessions, as opposed to the Insight Method which used these strategies at separate intervals. In contrast to Moore/Wong's and the researcher's assigning engagement techniques to specific stakeholders, the Insight Method by Simkins and Thwaites used its four sequential techniques for all stakeholders.

Contrasts to Moore & Wong and Simkins & Thwaites

Evaluative processes

While there were common overlaps between participatory process techniques used by the researcher and Moore/Wong and Simkins/Thwaites, there were fewer instances of that concerning evaluative processes. To assess the results of their participatory process and the success or failure of the Environmental Schoolyard, Moore and Wong devised strategies for each of its stakeholder groups. In evaluating Washington Elementary students' opinions, Moore and Wong used time logs, questionnaires, an environmental alphabet and taped interviews. For teachers, Moore and Wong relied on staff logs and questionnaires while parents provided input through questionnaires (eric.ed.gov). Four conditions or themes formed the evaluative process of Simkins and Thwaites' Insight Method: place or object-specific experiences; feelings and emotional significance; social networks and imagination and temporal aspects. For Simkins and Thwaites, these conditions help ensure an equal participatory process while giving priority to both

people and site-specific factors in planning or design improvements (cscy.group.shef.ac.uk).

In contrast to these assessment processes, the researcher relied on reflection questionnaires and the five operational play categories. As opposed to built or in-progress schoolyard spaces for Moore/Wong and Simkins/Thwaites, the researcher dealt with a proposed re-design. The researcher designed the reflection questionnaires to better understand from stakeholder groups their experiences during the participatory process as well as tips for improvement. Thus, in a way the reflection questionnaires served as a situational substitute for a post-occupancy evaluation. In evaluating the Northview Ecological Master Plan, the researcher used the operational play categories. This revealed which elements of the plan corresponded to particular categories like exploratory play and helped the researcher assess the designer's success or failure in synthesizing varying interests

Influence of local knowledge and active listening

Additional theoretical concepts driving the researcher's participatory process study at Northview Elementary were local knowledge and active listening. Although Moore and Wong speak briefly on local knowledge as beneficial in helping "identify resources and user needs," the researcher was more inspired by Hester and Stine's arguments. Hester argued that public spaces must account for the social dynamics of the place and be "reflective of the synthesized needs and wants of its residents or users" (pps.org). Stine posited that participatory processes reliant on local knowledge ensure schoolyard spaces "reflect the behaviors and cultural legacies of its users, thereby increasing the congruency or fit between the physical site and user" (Stine 1997, 91-92). Active listening, adapted from Hester, encourages honest dialogue between planner or designer and stakeholders involved.

The primary motivations for using these concepts in supplementing the participatory process was to determine if they offered any benefits such as a better understanding of the school culture. The researcher applied local knowledge through the questionnaires designed for teachers. These questionnaires attempted to identify from these stakeholders past history and use of the schoolyard site and consistencies or variations in play. The researcher applied active listening through one-on-dialogue interactions with Northview students through the workshops sessions as well as through organic conversations with After School club supervisors. These benefits will be revealed in the project conclusion sub-section immediately following this portion of the report.

REFLECTIONS

Project + Researcher Reflections

Iterative Participatory Process

Looking back at the participatory process study undertaken at the Northview Elementary School, there were several aspects that merit discussion. Firstly, the researcher worked within a tight schedule, 6 days for workshop sessions with students and 11 overall for teacher and parent input. Whereas precedent study influences held participatory processes for months, the researcher ran a much more condensed approach in gathering the necessary data to fulfill project goals.

Time constraints also placed limits on the *iterative* nature of the participatory process. Typically, these processes require extensive refinements and iterations to strategies proposed by planners and designers until target audiences deem the proposal suitable. With such an option unavailable during this process, the researcher adapted this term in determining the overall structure of this master's report. Throughout this 9-month process, almost every decision made was interdependent of the other. Such interdependencies are evident throughout the report, with notable examples including connections made between data collection techniques and coding structures to operational play categories and cognitive development theories.

Teacher/Parent Engagement Techniques

In retrospect, the approaches used in engaging teachers and parents contributed to the weak response rate by these stakeholders. However, as readers can infer from the logistical structures established at Northview, the researcher had limited opportunity in personally engaging teacher and

parent stakeholders. Thus, the researcher ever mindful of his time frame sacrificed meaningful engagement with supporting stakeholders in favor of primary stakeholders - students. Ultimately, this was a necessary sacrifice; buoyed by a strong student response with support by teachers and parents, the researcher gathered adequate data in fulfilling project goals and formulating informed recommendations.

Questionnaire Use

Regarding the use of questionnaires for children, be they for reflective or evaluative in nature, planners and designers must clearly administer this process. Whereas the researcher had intended for the reflection questionnaires to be filled out at home, club supervisors from kindergarten through to second-grade opposed this strategy. The reason given was their young age and higher likelihood in forgetting to perform the task; with club supervisors dictating aloud to students, the researcher transcribed these responses. The researcher soon found out that to gather any responses, it was best to ask students to fill out questionnaires immediately after completing drawings during workshops. Planners and designers must also clearly frame questions in a manner appropriate to the target audience; a good strategy is to hold a series of dry-runs prior to study period. Not only does this ensure questions are easily understood, but also reduces the likelihood of continual revisions, an experience the researcher endured on one of his 5 questions.

Active Listening and Local Knowledge

Although the potential benefits of local knowledge and active listening on participatory processes were not exhausted here, these two concepts did prove helpful. Through local knowledge, the researcher discovered how Northview students had traditionally used the site and the blacktop's relevance as a multi-use space for both play (tic-tac-toe) and an array of class activities. Local knowledge also revealed play habits of students - younger kids played in smaller groups while older kids preferred larger groups. Local knowledge allowed the researcher to discern how teachers viewed the school and its students; this proved useful in helping develop a schoolyard space merging site and user needs.

The greatest benefit of local knowledge during this participatory process was in reinforcing and validating data collected as well as observations made within and outside of school grounds. Active listening itself manifested through one-on-one dialogue with students and club supervisors during workshop sessions. This dialogue proved especially helpful in understanding what the children were attempting to communicate through their drawings. By spending a few minutes with each student, the researcher and club supervisors helped the students express their aspirations and concerns more clearly. Not only did this dialogue aid the researcher in correctly interpreting student drawings beyond which

was represented on paper, but also made the coding process a much more efficient, enjoyable experience.

Lasting Impressions

Overall, the researcher has no regrets about the participatory process conducted at the Northview Elementary School from January 20 - February 3, 2012. The process undertaken confirmed the value of user input in the planning and design of public spaces; a philosophy that the researcher will hold dear in his professional pursuits henceforth.

For aspiring researchers, especially those college-aged, it pays to be confident in research intentions and communicate that confidence to stakeholders, particularly the students. Speech must be clear and concise with appropriate inflections; remember that projecting enthusiasm inspires an encouraging, positive response and attitude from the stakeholder audience. From the researcher's experience at Northview, participatory processes relative to children do not typically operate with fully defined scripts; one must be flexible and able to adjust daily goals in reaction to unforeseen circumstances. To help prepare planning and landscape architecture students and professionals, the next subsection will provide five essential recommendations designed to improve upon participatory processes with children.

Future Research

As noted in the "Study Limitations" subsection of Findings, the researcher, along with project partners Laura Weatherholt and Rebecca Melvin are unable to perform a post-occupancy assessment of their Northview proposals. This inability, due to graduation and the glaring fact that the project is unbuilt, presents an additional opportunity for further research.

The first condition for further analysis is assessing the effectiveness of the five operational play categories in developing a learning landscape supportive of cognitive development, physical activity and recreation. A researcher cannot solely depend on a professional evaluation in the success or failure of their design proposal. For a planning and design process to be truly participatory in nature, a target audience has a right to voice their thoughts on the built project and offer suggestions for improving its functions.

A second condition for detailed research is a quantitative investigation of the contributions of the five play categories in enhancing students' propensity in indulging in self-initiated or guided learning and

discovery. Specifically, the study could employ the theories developed by Piaget and Vygotsky in assessing the effects of these play categories in expanding children's learning and play opportunities beyond conventional definitions.

The third research possibility is a merger of Vygotsky's theories on childhood cognitive development and operational play categories within a vibrant, thriving schoolyard. With Vygotsky's particular emphasis on childhood learning occurring within a social context with teachers serving as guides, it would be interesting to identify the comparisons and contrasts between outdoor and indoor learning. Additionally, it would be worthy to note which learning setting provided more opportunity for creative or unique learning or play opportunities. Certainly, this is not an exhaustive list in recommendations for future research concerning participatory process operating at the intersection of cognitive development theories and play categories. The purpose of these recommendations is to help broaden the literature concerning participatory processes with children and communicate the value of such undertakings.



RECOMMENDATIONS FOR PARTICIPATORY PROCESS IMPROVEMENT

Recommendation 1: Establish Relationship with school prior to study

To planning and landscape architecture students or professionals looking to conduct a participatory process with schoolchildren, it is imperative to have established a burgeoning relationship with the target school. A critical aspect in driving implementation of both the researcher and Moore/Wong's studies were through existing relationships with their respective schools. Because of Moore and Wong's relationship to UC Berkeley through laboratory schools and landscape architecture faculty respectively, it allowed for full support in establishing the Environmental Schoolyard. It also removed any qualms of recruiting architecture students in helping drive the participatory process through roles in design workshops and surveying.

Similarly, the researcher's major professor had established a long-standing relationship at Northview where she had helped build a learning garden at the school between 2008 and 2010. Although that garden would be eventually removed, the relationship established set the precedent for the master's projects under the Landscapes of Learning Studio.

The researcher added to this relationship through meetings with both the After School Coordinator and club supervisors. Under no circumstance does the researcher suggest that participatory processes can only occur when a researcher has an established relationship with a school. The researcher is of the opinion that it helps researchers understand the logistical structure in place. This allows

researchers to assess how the proposed study may fit into that structure rather than disrupt it. One way to do this is organizing a series of meetings with key figures – principals, teachers – where project purposes are explained.



Ink Sketch based on Northview photograph
by Author

Recommendation 2: Strong, charismatic figure as “point person” and for “data drop-off”

During the Northview Elementary participatory process, the researcher had such an individual in After School Coordinator Kim Markward. As with any successful project initiative, there is a need of having an influential player(s) at its helm to keep on track in meeting project goals. It is necessary for the researcher to have such a person at their target school; again, researchers can foster this partnership through an informational meeting. This person can be a teacher or an after school coordinator; principals generally have far too much on their hands to dedicate their valuable time to these tasks.

The researcher should properly brief the “point person” about project expectations, goals and objectives. There should be considerable transparency in this partnership to ensure that the information the point person relays to interested parties is complementary to the researcher’s intentions. It is also beneficial to utilize this individual with their full consent as a central point of “data drop-off.” Adhering to this process makes organizing data collected from stakeholders a much more efficient process; there will be no need to wander around personally collecting responses from individual stakeholders. A good “point person” keeps a researcher focused on project goals and informs the latter when there is insufficient stakeholder data to accomplish such goals.



Ink Sketch based on Northview photograph
by Author

Recommendation 3: Recognize the target audience (age) of children

It is crucial for prospective researchers to understand the target audience of children they intend to engage. From the researcher's experience at Northview Elementary, younger children (K-2) were more apt to communicate ideas through drawing. Older children (3-6) showed a greater aptitude in expressing ideas through graphics and text. While the children in this research study communicated ideas through hand sketching, reflection questionnaires strongly hinted at other ideation preferences. Should resources allow, it would behoove researchers to invest in model-building, either by computer or by materials such as wood, clay or foam core. Researchers should also not underestimate the value of dialogue and collaboration during their processes with children; working in tandem with them provides insight concerning their aspirations and wishes

As one student expressed in a questionnaire, models help "them better understand at a small-scale how the play elements will be organized around the site." Other techniques to look at are collage-making and conducting site visits with children. Another way to jog children's creativity and expand play preferences beyond the conventional slide is for researchers to expose them to other play practices nationally and internationally. A good way to do this during participatory sessions is to project images of all kinds of play, be they active, natural or exploratory. Should technology fail, image boards are not a lost art, and should enjoy prominence along with projected slides.

Additionally, simulation exercises immediately following slide presentations and image boards can ground children in the reality of such play opportunities. These exercises should incorporate such engaging and manipulable materials as clay and plant material. Perhaps the physical manipulation and observation of such objects can help begin to address discrepancies between active/functional play and more "obscure" categories as exploratory and natural play.



Ink Sketch based on Northview photograph
by Author

Recommendation 4: Define your role as researcher

For prospective researchers, this is an important aspect of the participatory process. Researchers must understand precisely what and how their participatory processes intend to achieve. Many researchers will find themselves alternating between roles as participant observers and facilitators, depending on situational context. Participant observation requires researchers to be present at and involved in certain daily routines of target audience, such as recess to allow note-taking. Facilitating typically occurs within the series of participatory sessions where the researcher gathers information directly from stakeholders. The researcher used a participant observation approach when recording notes in the field during recess and a facilitator approach when involved in workshop sessions. If intending to act as a facilitator, the researcher is there to stimulate and inspire ideas from their target audience in formulating planning and design strategies; one must NOT impose ideas.

Regardless of whichever role the researcher intends to play, participant observer or facilitator, he/she must designate helpers to assist in photography, video recording and note taking. Researchers must also brief helpers concerning project goals and expectations; once again, transparency is essential. Such a format ensures a more focused, comprehensive process; one need not try to alternate these duties by themselves. Additionally, this allows the researcher to concentrate more specifically on a task and alternate where needed without fear of losing a memorable moment to capture in note, sketch or film.



Ink Sketch based on Northview photograph
by Author



Ink Sketch based on Northview photograph
by Author

Recommendation 5: Attract Teachers and Parents

Due to the limited teacher and parent involvement in the researcher's participatory process, a recommendation failing to address this issue would have been a glaring oversight. For prospective researchers, one method to consider in inspiring teacher and parental involvements are through the target school's Parent-Teacher Organization (PTO). With permission from the school's principal, researchers should make a formal request to PTO officers to present a mini-presentation. This presentation should clearly list your name, qualifications, references and project intentions. Researchers must emphasize the input of these possible stakeholders as critical to the proposed project's success.

Prospective researchers should try to discover other committees or organizations that show substantial teacher and parent involvement. Many schools now have such groups as Site Councils where members get together once a month to discuss improvements to their schoolyards. These avenues present a wonderful opportunity for researchers to generate pure excitement and support from this core group as well as understand how this committee's goals could influence project intentions. From his experiences at Northview Elementary, the researcher firmly believes that like children, teachers and parents also thrive on personal engagement. Personal engagement shows the researcher's willingness to work collaboratively with teachers, parents and children in achieving results agreeable to most.

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APPENDIX A: Glossary

Cognitive Development - skill and knowledge developed and constructed based on solitary and social interactions with peers and physical environment (Ben-Ari & Kedem-Friedrich 2000; Gordon 2009).

Experiential Learning - learning that occurs through contact or interaction with nature. May be direct; indirect and symbolic (Kahn & Kellert 2002).

Environmental Psychology - Environmental psychology examines the interrelationship between environments and human behavior. Deals with such issues as human cognition and perception, preferences in setting (urban or rural) and participation with nature (umich.edu).

Human Environment Interaction - relationship between humans and nature. Deals with 5 categories of conception: physical; sensorial; experiential; relational and compositional conception (Kahn & Kellert 2002).

Learning Landscape - schoolyard that operates at the intersection of formal, informal and non-formal learning. Emphasis on experiential learning, variety in play and object manipulation. Ecological understanding fostered through human senses (Johnson 2000; Moore & Wong 1997).

Listening - method of dialogue that emphasizes meaningful communication and mutual understanding. Participants are actively involved in dialogue to better

understand, interpret and formulate appropriate responses (colorado.edu).

Local Knowledge - indigenous knowledge of an environment based on stories or anecdotes of its residents or users.

Physical Activity - activity that supports bodily movement produced by skeletal muscle and requires energy expenditure; within the playground setting, this may include such structures as monkey bars and rock walls (<http://www.who.int/>).

Place-based Approach - method of planning and design that encourages congruency between users and the physical site in question. Informed by existing phenomena, history and practices (Stine 1997).

School Environment - educational setting that supports a child's physical and mental growth both indoors and outdoors. These settings must provide opportunities for recreation, play and sport (who.int).

Participatory design - a method of design comprising 3 parts: principles; people and place (Chanse & Thering 2011). The goal is to effectively balance these parts in shaping planning and design solutions.

Active/Functional Play - play activities that encompass repetitive motor movement and actions, involving the use of limbs and muscle

control. Specific activities include sliding and jumping (Omet 2000; Rubin 2001).

Constructive Play - play activity where the end goal is the creation of a tangible product through manipulation of an object(s). These activities can include molding clay into the shape of a bowl or creating a painting (Omet 2000; Rubin 2001).

Exploratory Play - play activity characterized by focused visual or auditory study of an object or setting within which one plays. This play type may include using a telescope to examine shapes/forms of objects in the playground (Rubin 2001).

Games with Rules - involves activities with pre-determined rules by which participants must follow and adjust their actions or reactions within those limits. These games may include kickball or basketball (Omet 2000; Rubin 2001).

Natural Play - play focused on physical manipulation, interaction or observation of natural features of a site. May include fishing in small ponds to building sand castles (Omet 2000).

APPENDIX B: Literature Review

The Scholarship of Transdisciplinary Action Research: Toward a New Paradigm for the Planning and Design Professions - Susan Thering & Victoria Chanse (2011)

Keywords: "participatory design "human environment interaction"

Summary:

In this article, Chanse and Thering explore the plural or participatory design approach in landscape architectural planning and design in the context of environmental sustainability. They note that practitioners define plural design as "the design of public spaces using participatory methods that do not necessarily address issues of civil rights and environmental justice. They quote Randy Hester on the importance of local participation in promoting sustainable practices, "local participation is best situated to help reform unsustainable behavior because it represents the local part of thinking globally and acting locally" (Chanse & Thering 2011, 7).

Although Chanse and Thering present several strategic concepts in linking plural design and sustainability, including The Get Meta challenge, the strategy that stood out to me was the Stay Grounded challenge. This strategy focused on three facets: principles, people and place. The first facet urges academic practitioners to "iteratively check their decisions about process....against the ethics, codes and principles...at the core of landscape planning, design disciplines and the imperatives of sustainability when project scale and complexity increases" ((Chanse & Thering 2011, 8). The second

facet recognizes that while "sustaining trusting relationships are essential for long-term success, as the scale of the project increases, so do the conflicting priorities of professionals, academics, and community groups" (Chanse & Thering 2011, 8). The third facet insists for an "appropriate response to the confluence of history, culture politics, geographic location and bioregional characteristics" (Chanse & Thering 2011, 8).

This article has reiterated the critical importance of local participation in key decision-making. Although difficulties arise when project scale and complexity increases, planners and designers must not shy from plural design as combined efforts with community members helps ensure longer-lasting solutions.

Take Home Point:

Plural or participatory design must operate with three (3) facets: principles, people and place. Respect professional code of ethics, keep in mind the varying priorities of people and try to mitigate conflicts and place emphasis on responding to site context, history and geography.

Service Learning in an Urban Context: Implications for Planning and Design Education - Forsyth, Ann, Henry Lu, and Patricia McGirr. 2000

Keywords: "participatory design," & "experiential learning"

Summary:

"The basic goal of service learning is visionary and ambitious: an educated citizenry actively and effectively engaged in solving the problems of local communities and the larger society"

- Price and Martello (Forsyth 2000, 239)

Service learning as pertaining to planning and design education is an interdisciplinary approach involving students, professionals and community residents in tackling community problems through project initiatives. A problem-solving tool, it is beginning to prove beneficial in the planning and design professions. Service learning combines "university outreach with experiential education [...as] a means for program to make education more relevant to both students and outside constituencies" (Forsyth 2000, 236). The driving motivation of service learning is to encourage students to reach out to the communities and place emphasis on community engagement through "listening" (Forsyth, 251). Morton's (1993) breakdown of the 4 conceptual models of service learning: (1) "liberal democracy that focuses on individuals and the state; (2) participatory or bottom-up democracy; (3) social justice and (4) citizenship model" (Forsyth 2000, 240).

To help readers understand the extent of service learning's diffusion into planning and design programs nationwide, they present a list of university-based outreach centers that work with neighborhood groups. While some of these centers like Pratt's Planning and Architectural Collaborative "provide service by advertising the skills of paid staff", others like Yale's Urban Design Workshop "use student work extensively" (Forsyth 2000, 243). Teaching staff still struggle to integrate service learning components, shifting between inclusion in the "core design and construction courses or leaving it up for individual faculty to introduce it should they show interest" (Forsyth, 246). The authors also distinguish between the manner in which planning and design professionals employ service learning. Planners are bound by the AICP codes "to plan for the needs of disadvantaged groups and persons," while architects are told to honor "human rights" (Forsyth 2000, 248). Landscape architects, on the other hand, are more concerned with "the protection of land" (Forsyth 2000, 248). From this discussion, readers can infer that the authors seek to merge these professional codes or ethics in completing community service learning projects that uphold resident rights, equity and respect of resources.

While the authors provide evidence supporting the growing popularity of service learning in planning and design curricula, there are a few limitations in the article. The authors claim that designers

undertaking service learning in conjunction with planners is a risky endeavor, as the former does not receive the same credit as the latter (Forsyth 2000, 248). It would have been an interesting discussion by the authors in providing guidelines aimed at helping minimize these risks; a possible solution would be clearly defined expectations and responsibilities prior to the start of projects. This would ensure that each professional's contribution is given as equal as possible weight as the other. Another limitation to this article is failing to offer solutions in incorporating service learning into

planning and design curricula. A possible solution would be a comprehensive college wide policy requiring key courses to include service learning components and providing set standards for teaching staff to follow.

Take Home Point:

Service learning is proving an effective technique in training planning and designs students for work with a diverse range of stakeholders. It is a process emphasizing collaboration, participatory design and planner-designer partnerships in providing comprehensive solutions to community or client issues.

Neighborhood Space, Community Development Series 17 - Hester (1975)

Keywords: "environmental psychology," & "participatory design"

Summary:

"Two irrepressible forces underlie my work; the human desire for participatory democracy and ecological limits. There are many more democracies in the world today and resource limits are more critical, complex and misunderstood. More than any other factors, democracy and ecological limits shape public landscape design."

- Randolph T. Hester

Randolph Hester defines "neighborhood space as all public (and ill-defined private outdoor space) close to home which residents consider their own because of collective responsibility, familiar association and frequent shared use." He defines the "success of a neighborhood space as one dependent on social suitability, thus reflecting the synthesized needs and wants of its residents." Hester holds dear the paramount importance of community participation in design and planning.¹

According to Hester, "open spaces must take into account several considerations of its residents aside from aesthetics." An important aspect is on the social dynamics, including "socio-economic status, life-cycle stages, sex and ethnicity" (Hester, 36). Hester

also emphasizes the "psychology/emotions of a space – how people feel at certain moments in a given public space." He urges planners and designers to account for the "differences in interaction between people based on regional, ethnic, class and life-cycle stages" when creating public spaces (Hester 1975, 79). When it comes time for weighting user needs and desires, Hester recommends "translating the user-needs concepts into performance standards in helping reduce complexity. He defines performance standards as "projected measures anticipating how well an environment will respond to user needs" (Hester 1975, 126). Hester provides several valid techniques in measuring and identifying user needs: gaming, town meetings, observation – activity and space, activity logs and semantic differentials.

Although Hester provides excellent discussion

on the value of a neighborhood space and the paramount importance of community participation, I find his argument lacking in certain aspects. Indoor spaces have clearly defined boundaries, unobstructed sightlines and limited variability in access points; thus, these spaces provide more opportunities for closer human interaction than outdoor spaces due to variability in access and sightlines. Both indoor and outdoor spaces facilitate

human capital, with the former even more necessary in less than ideal climate conditions.

Take Home Point:

Planners and designers either must directly or indirectly engage residents when creating community open spaces; recognizing the socio-cultural dynamics of residents will increase their sense of belonging and connection.

Children and Nature: Psychological, Sociocultural, and Evolutionary Investigations - Peter H. Kahn & Stephen R. Kellert

Keywords: "experiential learning," "environmental psychology," "human environment interaction" & "biophilia"

Summary:

In this book, Kahn and Kellert discuss the natural development of children and their relationships to nature through contact, be it "direct, indirect or symbolic" (Kahn & Kellert 2002, 118-119). The authors begin their discussion by drawing similarities between young animals in their natural habitats and young children in their home environments. Each of the two species expands its knowledge of their environment through "exploration, adaptation, direct perception and ably supported by the social structure around them" (Kahn & Kellert, 20). These "emotionally tinged investigations help "lead to discovery and learning" (Kahn & Kellert 2002, 21). The authors note that to truly "engage children in learning/discovery" and "allow them to comprehend the workings of the environment they play within," spaces must allow for high degrees of "visual perception, observation and

acuity" (Kahn & Kellert 2002, 44).

Kahn and Kellert posit that children's affiliations with nature manifests in five ways: "physical conception, sensorial conception, experiential conception, relational conception and compositional conception." These conceptions include "actions with or against nature, emotions attributed to particular environments and relationship between children and nature" (Kahn & Kellert 2002, 100). The authors note that those seeking to connect children with nature must recognize the three critical stages in childhood development: 3-6, 6-12 and 13-17. At 3-6, children's first real contact revolves around "play in the family garden with their puppies in tow" (Kahn & Kellert 2002, 250). The second stage - buoyed by increased mobility - is the period where "natural curiosity and exploration" within the youth flourishes; these feelings manifest themselves physically in the "making of forts or dens" (Kahn & Kellert 2002, 251). At 13-17, the youth become "highly cognizant and appreciative of natural processes such as ecosystems," a stage where professionals can "engage the youth in activities such as helping design community open spaces" (Kahn & Kellert 2002, 251-252).

Although Kahn and Kellert present strong arguments and findings, there are instances or sections where more focused discussion proves necessary. In the section in which they praise video games for helping to cultivate "spatial visualization and mental rotational skills in children," including examples or guidelines on how to incorporate these components into design would have strengthened their position. Lastly, by failing to provide any techniques to guide

professionals in youth engagement on community projects, they merely present a claim without sufficient recommendations.

Take Home Point:

Creating vibrant open spaces for children requires areas that support high levels of spatial visualization features that cultivate natural curiosity, physical and cognitive growth.

Nature Big and Small: Landscape Planning in the Wilds of Los Angeles - Marcia J. McNally (2011)

Keywords: "participatory design" & "human environment interaction"

Summary:

In this article, Marcia J. McNally summarizes her work relationship with Randolph Hester in nearly 30 years in a variety of "planning and design projects at every conceivable scale" (McNally 2011, 19). The project that McNally listed in detail was the contract by the City of Los Angeles Department of Recreation and Parks to develop a master plan for Runyon Canyon Park in 1985. Although McNally's and Hester's "participatory approach originally focused on "designing small spaces close to home with the people who live there," (Hester 1982, 135) it has evolved into an iterative approach based on "listening" (McNally 2011, 19-20).

To help them develop the master plan, Hester and McNally undertook a 11-step process, including such elements as "listening; citizen input/interviews; citizen hands-on site analysis and evaluation criteria" (McNally 2011, 20). While each of these steps were

useful in helping complete the project, McNally's emphasis on "listening" proved absolutely essential. The duo define listening as identifying stakeholders, "who is involved, who should be involved, engagement with the site and address concerns and visions." This allows for a "dialogue between consultants and local community and help the former understand the social and environmental terrain rapidly and extensively" (McNally 2011, 20). McNally suggests "relying heavily on local, place-based scholarship and prevailing wisdom on issues such as neighborhood planning norms" (McNally 2011, 32). The following concluding statements stood out: "design and planning work best when we can find the unit with which people identify" and "scale changes the level of intimacy between the designer and everyday people" (McNally 2011, 32).

Take Home Point:

"Listening" is an essential component in a participatory process in the planning/design fields. Practitioners must also be flexible enough to "adapt their processes and change tasks" to help negate pitfalls or stalemates.

Natural Learning: The Life Nature History of an Environmental Schoolyard – Robin C. Moore and Herb H. Wong (1997)

Keywords: "participatory design," "school environment," "experiential learning" & "human environment interaction"

Summary:

Natural Learning provides readers with detailed information chronicling the history and development of the Washington Elementary School's "Environmental Yard" in Berkeley, CA. Divided into four parts with 21 chapters, Moore and Wong describe the processes behind the ten-year initiative that turned a previously underused, asphalted space into a thriving schoolyard comprising both natural elements and traditional play features. Concerning these chapters, there were seven that were particularly relevant to this project's intentions.

In Chapters 6, Moore and Wong emphasize the importance of knowing a site well and correctly discerning which strategies will/will not work based on input from target audiences. Chapter 12 highlights the technique of mapping as a "useful tool in the planning process to express ideas about how a schoolyard ought to be developed" (Moore & Wong 1997, 137). The authors implore planners and designers to develop design proposals that encompass a strong mix of play

features, particularly an iconic feature that instills within children, "a bragging rights of sorts" (Moore & Wong 1997, 182). The authors touch on child empowerment by encouraging planners and designers to "nurture educational settings that immerse children in a feeling of ownership of their learning process, i.e. paths of self-discovery with teachers serving as guides" (Moore & Wong 1997, 197).

Moore and Wong also provide a host of participatory planning techniques aimed at addressing user needs including meetings, design workshops and school-community surveys. Perhaps the most valuable contribution of this book towards this master's project is a critical note on the planning process. Moore and Wong suggest that planning begins with "identifying resources, be they community members and organizations, natural resources/phenomena, materials, tools, time and space" (Moore & Wong 1997, 234).

Take Home Point:

Local knowledge based upon identification of resources, user needs or characteristics and site assessments - capacities, potentials and constraints - occupies a critical component in the planning and design process. Without a deep understanding of these elements, planners and designers will continue to create negligible, disconnected spaces that fail to sustain user interest.

Experiential Landscape - An Approach to People, Place and Space - Kevin Thwaites and Ian Simkins (2007)

Keywords: "experiential learning," & "human environment interaction"

Summary:

This book by Thwaites and Simkins explores and "offers new ways of looking at the relationship between people and the open spaces they use daily". Through a "holistic approach, the book emphasizes integrating experiential and spatial dimensions of the outdoors as well as the theory of environmental design disciplines." Another important aspect of this book is its authors' focus on participatory approaches in planning and design processes.

Both authors place particular importance on engaging the users in planning and design conception of open spaces to increase the latter's continued enjoyment and interaction. Preceding this book is their 9-month study involving 68

children in 3 schools in Sheffield, England. The study, known as the Insight Method, sought to "provide a participatory framework for professionals such as landscape architects and urban designer/planners to give children a voice, who are ordinarily hidden from design and planning processes."

This book along, with the article summarizing their doctoral research is one of the few readings I have encountered that hold children and youth engagement so paramount. Overall, this book is an excellent resource from which I can glean techniques to help facilitate meaningful engagement with Northview Elementary students as part of my master's research.

Take Home Point:

It is imperative to involve children in designing spaces intended for their "health, well-being and development" (cscy.group.shef.ac.uk).

Ecological Education in Action: On Weaving Education, Culture and the Environment **- Edited by Gregory A. Smith & Dilafruz Williams (1999)**

Keywords: "experiential learning," "school environment," "human environment interaction" & "environmental stewardship"

Summary:

"Placing educational settings beyond and out of the classroom can initially engender children's relationship to nature; schoolyard gardens a source of student learning"

- (Smith & Williams 1999, 7)

In this book, Smith and Williams define seven (7) key principles aimed at "helping us re-conceptualize the relationship between education and the environment as well as the purpose of education itself - acculturation and socialization" (Smith & Williams 1999, 16).

The authors seek to encourage readers to "develop a personal affinity with the earth through practical experiences out-of-doors and through the practice of an ethic of care" (Smith & Williams 1999, 7). They urge "grounding learning through the study of local knowledge and investigation in persuading students to learn about the phenomena and events surrounding them" (Smith & Williams 1999, 8). Smith & Williams lament the growing social isolation of individuals and families and attempt to correct this by fostering within children, a "sense of obligation, responsibility and support to each other

and the community" (Smith & Williams 1999, 9).

Smith & Williams implore teachers and adults to involve children in projects such as restoration of community resources. The authors believe this leads to feelings of "sense of purpose in contributing to the livelihood of a community while learning skills such as plant growth/cultivation" (Smith & Williams 1999, 9-10). The authors also encourage "service-learning projects involving children and adults by organizing and maintaining facilities such as a community-supported farm" (Smith & Williams 1999, 10). Smith & Williams emphasize the importance of including children and students in key decision-making - "let voices be heard in decisions that affect their lives" ((Smith & Williams 1999, 11). Lastly, the authors promote a new thinking "emphasizing broader, cultural awareness in ways that enhance or detract from creating socially, ecologically

sustainable cultures" ((Smith & Williams 1999, 11).

Overall, Smith and Williams have pooled together, along with other scholars' work, a strong collection of studies exploring each of the seven principles briefly defined above. Case study examples range from service-learning projects in K-12 settings to a participatory process of a school design operating with input from students and community members. The book would have benefited from a case study that explored the cultural dynamics within a service

-learning project and strategies the scholar used in mitigating potential conflicts.

Take Home Point:

It is imperative to get back to the social values of our forefathers; we must place emphasis on shared knowledge, mutual support and re-establish strong links between ourselves and with the environment.

Landscapes for Learning: Creating outdoor environments for children and youth – Sharon Stine (1997)

Keywords: "participatory design," "human environment interaction," "school environment" & "cultural geography"

Summary:

The intent of Sharon Stine's book is to "help designers and teachers think about the quality of exterior school environments as learning places" (Stine 1997, xii). She believes these places "have potential for rich sensory input, flexible furnishing and endless possibilities for exploration" (Stine 1997, xii). Stine's discussion focuses on the roles of main players in the planning and design process, a shared language between participants and the tenets of congruency between users and the physical site. Stine supplements each of these discussions with "best-practice" case studies of school projects nationally and internationally.

Stine identifies 3 players - children, teacher and designer. She defines the child's role as a "play-messer" of environments through play, discovery and exploration, i.e. active user (Stine 1997, 3). The teacher's role is the "maintainer," ensuring that the space continues to function and serve a variety of educational and recreational purposes while the

designer is the "form-maker" of the space (Stine 1997, xiii). Stine notes that for collaboration in the planning and design process to succeed, a shared or common language must exist and drive progress as well as action (Stine 1997, xiii). Planners and designers must communicate clearly and without professional jargon to ensure full transparency and understanding during participatory processes with stakeholders.

Particularly relevant material is Stine's discussion on congruency or fit between a user and the physical site or space. Stine insists that designers must fashion schoolyard spaces that "reflect the behaviors and cultural legacies of its users" (Stine 1997, 91-92). Strategies resulting from participatory processes must consider current uses as well as predict what might occur over time (Stine 1997, 95-96).

Take Home Point:

Before planners and designers can propose changes to a space, they must understand the cultural geography - past and present histories - of the space. Understanding how users have used the space in the past as opposed to now and identifying successes or failures can serve as indicators to develop effectively in the future.

The literature reviews presented above represent the researcher's individual interest within the Landscapes of Learning Master's Report Studio. For an expanded look at the breadth of literature reviewed by all members of the Master's Report Studio, please refer to the following url collection under the Kansas State Research Exchange :

<https://krex.k-state.edu/dspace/handle/2097/13625>



APPENDIX C: Precedent Studies

Precedent Study 1: Learning Landscapes

Historical Context

The supporting basis for Denver, Colorado's Learning Landscapes initiative was the concept of "Child-Friendly Cities. (CFCs)" This idea developed out of the UN's Convention on the Rights of the Child (CRC) in 1989 to address the disadvantage of children because of the "lack of political and economic power they possess" (Kingston et al, 2). The objective of the UN mandate was to encourage city governments to establish participatory processes with children and the youth in the planning and development of cities as they too "have a right to have their voices heard in all matters affecting them" (Kingston, 2). To help cities and professionals identify and define the elements of a Child-Friendly City, (CFC) criteria based on rights articulated in the CRC include:

- Physical environments that respond to the particular needs and concerns of children
- Methods to involve children and give them a voice in local decision-making processes
- Training packages/methodologies for different target groups (decision makers, planners, teachers, parents, children)
- Planning and impact indicators to evaluate impacts of municipal or community actions on children (Kingston et al., 4).

Denver's Child & Youth Friendly City Initiative (CYFC)

- "Founded on June 13, 2006 with a partnership comprising University of Colorado, Denver's Children, Youth and Environments Center, the Mayor's Office of Education and Children and local youth development non-profit Assets for Colorado Youth.
- Operates under six implementation principles, including: (1) developing inclusive participatory processes that is representative of all stakeholders, (2) supports meaningful children and youth participation and (3) focused on the specific needs of children and youth based on the continuum of healthy development" (Kingston et al., 4-5).
- Organizational Structure - Five committees ensure the continued progress and implementation of the Initiative:
 - "Executive Committee - 7 representatives comprising public officials, youth development specialists, academics and the Initiative's founding institutions. Their role is to coordinate the initiative, recruit stakeholders and act as a "problem-solver."
 - Adult Steering Committee - 30 members, including CFYC chairs and reps from key stakeholder groups; they help link the Initiative to useful human and financial resources.
 - Youth Steering Committee- 20 members (aged 9-19); provide information grounded in the real lives of the young people.

- Subcommittees - tackle specific projects and themes to implement.
- CYFC Initiative - keeps all stakeholders involved and informed, recruitment" (Kingston et al., 6-7).

Learning Landscapes

- With tenured UC Denver faculty member Lois A. Brink as its Executive Director, the Learning Landscapes Initiative in association with the Denver Public School System, has since its 1998 inception, transformed 93 neglected schoolyards into attractive, safe multi-use parks that cater to resident needs.

- "Began with a \$20 million budget as part of a public-private partnership; its ensuing success allowed an additional \$10 million bond in 2003" (Kingston et al, 7).

- Each school receives approximately \$450,000 for redevelopment of neglected schoolyards.

- "UC Denver works with elementary school officials, teachers, students and community members in designing schoolyards that respond to the culture and aesthetic tastes of neighborhood residents and the developmental needs of children" (Kingston et al, 7) .

- All learning landscapes have grass playing fields, age-appropriate play equipments, trees, shade structures, artwork, gardens, traditional and non-traditional play elements (See Fig. 5) (learninglandscapes.org).

- "Learning Landscapes use 3 goals to guide transformation:

- support children's healthy development, encourage outdoor learning and play, socialization tools and opportunities for physical activity;
- create multi-generational spaces for outdoor use by community members and open to the community for public use before/after school and on weekends;
- form aesthetically pleasing focal points, reflect uniqueness of location and use as well as fosters community use and ownership" ((Kingston et al, 7-8).

Learning Landscapes Planning/Design Process

- "Learning Landscapes is a yearlong civic engagement process that enlists UC Denver College of Architecture and Planning graduate students to help transform Denver's schoolyards. The initiative uses a service-learning approach designed to foster community pride, ownership for both UCD students and their target audiences as well as valuable design-build experience for the former" (learninglandscapes.org).

- "In the fall, UCD students, along with target schools' students, teachers, parents and community members develop a master plan for the new schoolyard. These master plans contain 5 goals: a vision, a set of goals to implement a vision, a program of uses, a spatial relationship diagram and an aesthetic ordering

system" (learninglandscapes.org).

- "In the spring semester, UCD students with stakeholder support and input, translate ideas into full-scale design development drawings, including illustrative buildings and planting plans. From there, local landscape architects selected by the Learning Landscapes staff finalize the UCD student drawings in the form of construction documents" (learninglandscapes.org).

- "In the summertime, students, along with target school stakeholders work together in physically constructing the schoolyards" (learninglandscapes.org).

Evaluative Process

UC Denver works with the Denver Public Schools, LL Committees, students, community leaders, and city officials to identify and measure indicators of Learning Landscape successes and failures. The goal is to create self-sufficient sustainable

site-based evaluation programs and build upon baseline data obtained by the Center for Research Strategies. UC Denver also works with community members to help establish site-specific evaluations as a means of stakeholder empowerment through assessment. The Learning Landscape staff continually makes adjustments and improvements at Learning Landscape sites as requested through post-occupancy assessments.

Relevance

The intention of the Learning Landscapes program is parallel to that of the master's project umbrella Landscapes of Learning due to its particular focus on working with schools and children or youth. As the only precedent study that has landscape architecture and planning students as primary facilitators in engaging community stakeholders and formulating design proposals, Learning Landscapes serves as both an individual and collective resource for the Learning for Landscapes students.

Precedent Study 2: Project for Public Spaces

History

Based in New York, Project for Public Spaces (PPS) is a "nonprofit planning, design and educational organization dedicated to helping people create and sustain public spaces that build stronger communities" (pps.org/about/approach).

- Founded in 1975, PPS "has completed projects in over 2500 communities 40 countries and all 50 states" (pps.org/about/approach).

- PPS has collaborated with an array of organizations, both public and private, federal, state and municipal agencies and neighborhood associations (pps.org/services).

- PPS' experience covers several types of public spaces including squares, parks, downtowns, markets and campuses (pps.org/services).

Participatory Process

PPS prides itself on basing "its planning efforts on a place-based, community-driven approach that empowers clients to develop unique visions for their public spaces" (pps.org/services). PPS operates under 4 steps:

- **Identifying Problems** - under this step, PPS looks to identify critical issues and problems. They work with communities to understand how a space is used or can be used. Measures employed here include observations, extensive stakeholder interviews and workshops which
- **allow clients to evaluate their existing public spaces using PPS' place diagram** (see Fig. 6). This diagram helps to determine the quality and usefulness of a public space.
- **Developing the Vision** - Here, PPS facilitates a community-wide visioning process, bringing together a range of local stakeholders. The goal is to foster dialogue and encourage bold, creative ideas, while sharing relevant case studies from past PPS projects. From this input, PPS develops a program of uses that evolves into a concept design plan, presentation and report. This summarizes the findings of the study, improvement opportunities and implementation strategies.
- **Making it Happen** - To prove its credibility to client communities, PPS undertakes short, inexpensive trial experiments that show the positive impacts of a well-reasoned planning/design strategy. These demonstrations help draw in additional partners and financial support. PPS works with stakeholder project teams from design through to construction; this ensures that the concepts generated by the community remain unchanged. The goal here is to help client communities translate visions into functional, working realities.
- **Sustaining Excellence** - Because they believe

that "you are never finished" when it comes to managing great public spaces, PPS works with clients to develop a strategic model of management and operation. PPS believes this helps to maintain the continued success of newly developed spaces" (pps.org/services).

Relevance

Although PPS serves a wider client and target audience scope as opposed to this master's project, it further instills the value of open collaboration and dialogue with stakeholders in shaping planning/design strategies. The Placemaking diagram the organization uses to analyze the quality and usefulness of a public space is particularly intriguing. As this study readies itself for implementation, it will attempt to translate the most pertinent components of PPS' diagram and adapt it accordingly to the site (see Fig. 7).

Precedent Study 3: The Washington Elementary School, Berkeley, CA: Environmental Yard

History

The Washington Elementary School "Environmental Yard" in Berkeley, CA was a ten-year joint-action research effort between Robin C. Moore and Herb H. Wong from 1971 to 1981. Moore was a Washington Elementary parent, resident and landscape architecture faculty member at University of California Berkeley with a rich background in urban landscape planning and participatory design. Wong held double duties as principal of Washington Elementary and associate administrative coordinator of several UC Berkeley Laboratory Schools. Wong was a field naturalist with a strong background in science education and reform (Moore & Wong, xv-xix).

Program Goals and Priorities

Moore and Wong's intent was to combine education, design and community development in redeveloping an asphalted urban schoolyard into an educational resource and community open space (see Fig. 8). To view images after extensive transformation, see Figure 9 and 10. The primary priorities of this effort were as follows: (1) meet the developmental needs of children and (2) ensure their genuine participation throughout the process. An additional research goal was a quantifiable assessment of reduced aggression amongst the children due to increased interaction and play with natural elements in the redeveloped schoolyard (Moore & Wong, xv-xix).

Site Context and Location

Moore and Wong chose Washington Elementary as its development site for a number of reasons. Firstly, the school's demographic representation - racially, socially and economically - was comparable to that of the city of Berkeley. Secondly, many families considered the school as an important community resource. Thirdly, Wong had established prior connections between Washington Elementary and UC Berkeley in developing several national elementary school science initiatives. Thus, the collaboration between Moore and Wong reflected this past link and further established a partnership between the elementary school and UC Berkeley partners, faculty and students (Moore & Wong, xv-xix).

Washington Elementary located near downtown Berkeley and close to the UC Berkeley campus, served kindergarten through to third-grade students. The existing, asphalted schoolyard was 1.5 acres in size. It was devoid of plant and animal life, inducing frequent episodes of fighting, bullying and antisocial behavior in the children because of its limited availability of play features beyond the obligatory game lines and swing sets (Moore & Wong, xv-xix)..

Participatory Process

With Wong serving as the general administrator overseeing the Yard's development, Moore occupied the role of coordinator of planning, design, construction and community participation.

Moore and Wong's target audiences were the 350 children of the Washington Elementary School, Washington Elementary teachers, parents and residents within the five-block radius of the school. To facilitate the participatory process, Moore and Wong relied on meetings, workshops, in-service training, behavior mapping, school-community surveys and design workshops (Moore and Wong, 222-233).

(1) Meetings: Weekly meetings for this project were a mainstay of participation. They ranged from informal day-to-day encounters to “meets” between school and university representatives. These meetings served to move the process quickly and keep the public abreast of progress by published minutes in a weekly newsletter. As the Yard began to develop, meetings became more task specific such as curriculum development, planting types or fundraising.

(2) Workshops: Workshops provided clear discussion and clarity on issues concerning site development, activity programming and community development. A critical component of workshops were its brainstorming sessions for idea generation and walking surveys, which helped to identify which ideas would work based on site conditions.

(3) In-service training: Through this structure, local professionals were invited to instruct

Washington Elementary teachers in a variety of skills, including new teaching techniques or incorporating environmental education courses into their curriculums. These training workshops ensured that teachers possessed easily transferrable skills to utilize the Environmental Yard to its full potential.

(4) Behavior mapping: UC Berkeley student researchers conducted mapping observations of the existing site for a period of seven days; observations took place before school, during school after school and on the weekends. Results showed minimal activity during pre-and-post school hours, while weekends recorded the highest levels at 12-20 users at a time. School hours saw the highest use but due more so to the schoolyard offering only basketball, kickball and strike out amenities.

(5) School-community surveys: Students filled out in-class surveys probing their likes and dislikes about the existing schoolyard. Some students expressed their wishes through drawings, supplemented by stories on what could happen in the new schoolyard; parents were typically in full support of their children's wishes. Teachers visualized the Yard as a living laboratory for environmental education, children's play and neighborhood recreation. Survey results from this group spurred the planning and design team to craft creative approaches for outdoor education opportunities in the Yard. Researchers also surveyed administrative staff who suggested features that could help the Yard function better from a

managerial perspective.

(6) Design workshops: The research team employed this technique as a basis for programmatic use diagrams based upon survey results. Individual classes held their own workshops with each class focusing on a specific design feature in the Yard. The UC Berkeley School of Architecture students served as the design facilitators during this phase, working with students to generate ideas and graphically expressing student ideas. The student design facilitators recoded each action students took during idea generation to help researchers quantify their role in the final design process.

Evaluative Process

Moore and Wong devised five methods in evaluating students' response to the newly redesigned Environmental Yard over the course of a school year (1945-1975): student logs; student questionnaires; environmental alphabet and taped interviews. The intent of these methods were to identify highly-used or under-served features in the Yard, the type and variety of activities and general to detailed perceptions of the new educational space. Evaluation methods for teaching staffs were in the form of staff logs and questionnaires.

Staff logs indicated the type of activities teachers organized for students in the yard through the year and the grade levels most involved throughout the project; there was a rough correlation found between high

involvement and higher grade levels. Staff questionnaires attempted to understand how differently teachers utilized the Yard as a learning and recreational resource for the students. The questionnaires also affirmed earlier theoretical constructs that the Yard had a positive calming effect on children due to reduced cases of aggression. Moore and Wong issued questionnaires to parents who expressed high regard for the Yard, with most touting its utility and beauty for both adult and child use.

Relevance

The Washington Elementary Environmental Yard more so than the other precedents, provided a project that effectively combined children participation and curricular structures to enhance students' experiential opportunities and diversity of recreational opportunities. The premise of the Yard was to supplement the learning process outside of the classroom by building observational and practical skills through activities such as fishing or gardening. The positive results of this project further confirm that a child's development benefits from interaction with natural processes as they offer an array of sensory stimuli; these stimuli compel the child to explore and discover.

Precedent Study 4: Experiential Landscape “Insight Method”

First developed in 1999 by Ian Simkins, Kevin Thwaites and Alice Mathers, the Insight Method is a participatory approach designed to guide landscape architects, urban planners and designers to examine the existing and aspirational place experiences of primary (elementary) schoolchildren. At its core is child empowerment through supporting their voice in planning and design processes ordinarily devoid of children's presence and participation (cscy.group.shef.ac.uk).

Principles

The Insight Method's initial research development phase comprised 68 primary schoolchildren in three United Kingdom schools in third (7-8 year-olds) and sixth (10-11 year olds) grades. Research documentation occurred over a nine-month period with three phases of participation between the planners/designers and the same pool of schoolchildren. Simkins and project collaborators derived qualitative research methodologies informed by principles of grounded theory, ethnography and case study. Research methods evolved and adapted in response to two conditions: reflection on children's engagement in the participatory phases and recurring themes of user preference (cscy.group.shef.ac.uk).

Participatory Process

The Insight Method employs a multi-method approach in driving child participation in planning and design processes. The following

methodological components follow a sequential pattern during data collection: semi-structured interviewing, cognitive mapping/drawing, wish pictures and adaptive photographic elicitation (cscy.group.shef.ac.uk).

(1) Semi-structured interviewing:

During this phase of engagement, Simkins and collaborators seek to identify and establish connections between the users (people), the place and movement. The researchers generate questions based on a set of predetermined themes: location of home, school, transport mode, journey, routine activity, journey between home and school. This allows researchers to understand the children's existing experiences, lasting imagery and emotional attachment to these places.

(2) Cognitive mapping/drawing: This phase of engagement typically occurs following site visits involving the children and researchers. Through drawing, the children express individual and collective perceptions of the existing play spaces. Drawing also helps researchers to accommodate for cultural and communication difficulties during participation.

(3) Wish pictures: Supplementing cognitive mapping are wish pictures. In this phase, children participants express themselves graphically and textually - word pictures and poems. Through word pictures, the children graphically illustrate existing features of the play space as well as aspirational

images of new features to include in redesigned spaces. Word poems communicate how the children typically interact or engage in existing spaces while their wish poems reflect aspirations of new interactions given the opportunity.

(4) Adaptive photographic elicitation: The last phase in the participatory process asks children to piece together images, drawings or photos. Its purpose is to start identifying recurring themes or aspirational concepts or features the children want to see in their new play spaces. Similar to an image board in planning and design schools, these visual aids express underlying opinions and perspectives. Adaptive photographic elicitation is an especially useful tool in situations where participant users have little drawing ability and are incapable of expressing thoughts graphically.

Evaluative Processes

Four conditions or themes formed the basis of Simkins, Thwaites, and Mathers' evaluation of child and adult participation: place or object-specific experiences; feelings and emotional significance; social networks and imagination and temporal aspects. Together, each condition seeks to engender a stronger sense of social capital between the stakeholder audiences of children, teachers and parents. These conditions help Simkins/Thwaites and key collaborators ensure that the participatory process has supported an equal partnership of

networks between project partners, addressed critical issues while giving priority to both people and site-specific factors in planning/design improvements (cscy.group.shef.ac.uk).

Relevance

Perhaps the most child-centered precedent, Thwaites, Simkins and Mathers' Insight Method seeks to maximize child participation and voice in decision-making. The founders of the Insight Method place a great deal of emphasis on visual aids as an effective tool in engaging the students and are an aspect that this master's study will seek to fully exploit. The participatory techniques contained in the Insight Method will serve as a significant influence in the techniques this study will seek to employ and adapt given differences in variables such as age and gender (see Fig. 11).



APPENDIX D: Coding Process

Coding Categories Defined

Students:

Traditional Play Equipment (TP) - This category refers to physical play elements or structures that typically appear in playground spaces, including swing or slide sets.

Non - Traditional Play Equipment (NTP) - This category refers to physical play elements or structures that are a rarity in traditional playground settings; this may include trampolines or tree houses.

Ball Fields (BF) - This category refers to preferences of sport fields and the activities generally performed.

Play Surface (PS) - This category refers to the preferences of playground surface students seek on a new playground

Teachers/Admin Staff:

Learning/Play Features (LPF) - Divided into three sub-categories of personal, physical and natural interaction, LPF refers to the types of activities this stakeholder group intends to perform with students.

Universal Play & Access (UPA) - This category looks to determine the physical and structural elements that will support universal play and access for both disabled and non-disabled students.

Unique Identity (UI) - This category will determine aspect of Northview that makes it distinct from other Manhattan-area elementary schools.

Parents:

Neighborhood Function (NF) - Neighborhood function will try to determine the kind of elements or features the new playground should include to effectively serve both the school and the surrounding neighborhood.

Parent - Child Activity (PCA) - PCA will try to reinforce children's preferences as well as highlight activities that will make the new playground a thriving, gathering space for all stakeholders.