

# Analysis of Innovative/ Self-initiated Play Spaces within Present Community Conditions Understood by Children

## - Focused on the Middle Childhood -

Sarah Sojung Yoon and Kyung-Hoon Lee

Graduate Student, Department of Architecture, Korea University, Seoul, Korea

Professor, Department of Architecture, Korea University, Seoul, Korea

### Abstract

The main objective of this study is to investigate the perception, recognition and response of innovative/ self-initiated play and its correlation to play space and play environment understood by children in their middle childhood years. Play, play theory, and the acceptance of play have an important role in child development. In recent years, play and the importance of innovative/ self-initiated play have been associated with a number of important societal issues. The impact of play and/or lack of play during the developmental stages of childhood directly influence a child's ability to mature and adapt into society. In order to investigate the overall perceptions of play and play space among the average child in their middle childhood, a questionnaire survey was distributed and analyzed using SPSS 15.0. This survey was conducted within the site specific context of South Korea. Interestingly enough, the differences in the responses can be organized into three main categories: age, gender and housing type. In result different directions for further study and research for future play spaces and play environments that support innovated/ self-initiated play have been suggested.

*Keywords : Innovative/ Self-initiated Play, Unstructured Play, Play Space, Play Environment, Children, Middle Childhood*

### 1. INTRODUCTION

Play and play spaces for children in their middle childhood years<sup>1</sup> are very easily overlooked because they are at a stage when many think they are outgrowing play. The provision of appropriate play spaces for children in their middle childhood is minimal but play is an instinct that cannot be ignored. "What distinguishes play from other forms of human activity are its qualities of spontaneity and self-initiation. Across human cultures all children in normal circumstances, have an intrinsic desire to play" (Hyder, 2005). This intrinsic desire "enables children to explore the customs and roles of their direct community, to reflect upon their inner selves and their emotions, to encounter abstract thinking and to develop communication skills. Play is also often said to provide a vehicle for children to create meaning from their experiences" (Bruce 1997, recited by Hyder). This study focuses particularly on the importance of the middle childhood. "Although early childhood provides foundations for later development, middle childhood also provides education and social experiences that are critical for developmental outcomes" (Clark & Clark, 1998; Schaffer, 2002 recited by Feinstein and Bynner, 2004). It is also during this stage in childhood children become intellectually aware of their strengths and weaknesses (Frost, Wortham, and Feifel, 2008, p. 169). Self-regulation, peer relations, gender identity, and thinking in another's perspective are also other characteristics that influence a child during their middle childhood (Berk, 2001, p. 345). This study is an attempt to reach the children in the immediate vicinity of Seoul, South Korea and

obtain their personal opinions regarding play activities and how space is understood within the context of that activity. The motive in obtaining this understanding is to apply this information into a constructive process of creating child-appropriate play spaces.

With the results of this investigation, new directions of study can be purposed in regards to the re-development and re-design process of play spaces for children that encourage and support innovative, self-initiated play. Design, unlike any other field, has the potential and ability to cater to specific needs. In order to design spaces for children, whether it is for play or any other function, children must be offered an active role in the process in order for that space to be successful. Due to the heavy emphasis on academic achievement, it has become difficult for children to develop through play. This does not necessary mean a complete rejection of child-like activities such as play; however, what it does is re-configure it into a more structured process that is more efficient and goal oriented. Play is re-defined and with it, children's spaces are also re-defined. Questions such as "safe play spaces" and "effective play spaces" enter into the minds of adults, which are then directly transferred to the designers. A structured space is a logical result for structured activity; however, play spaces that are set aside for unstructured or self-motivated play are also designed according to the values of structured activity. What are children doing in these structured play spaces that have been provided? Why is it that, so often play spaces become empty and desolate locations that soon become identified with community violence and crime? According to Choi et al., play areas and spaces have the ability to encourage or discourage play. These play environments have an important role in relation to a child's development. (Choi et al., 2003). Out of the many questions that are raised about play spaces for children, the main research questions for this study are (1). What types

<sup>1</sup>Middle childhood, generally defined as the years between ages 8-11, provides educational experiences that are critical for developmental outcomes. (Clark & Clark, 1998; Schaffer, 2002 recited by Feinstein and Bynner, 2004).

of play are children actually engaged in, (2). What types of spatial characteristics can support these activities, and (3). How can the child's opinion be placed back into the minds of designers before a space is completed? Although some may criticize the research efforts in trying to understand a child's perspective to determine spatial needs as unreliable and difficult to structure, as the main users of the space, a child's input can determine the proper direction for design. A balance between children's play needs and adult concerns need to be established. The main objective of this study is to investigate the perception, recognition and response of innovative/ self-initiated play and its correlation to play space and play environment understood by children in their middle childhood years.

## 2. LITERATURE REVIEW

Although there is a growing interest in play, it does not have a single distinct definition. The ideas and concepts of play are ambiguous in nature; therefore, all the more difficult to comprehend. "There are various overlapping criteria; the more of these which are present, the more certain it is that an observer will regard the behavior as being play" confirming the overall consensus on the vague character of play. (Smith, Takhvar, Gore, and Volstedt. 1986) In general, however, most contemporary definitions for play have been based off the following characteristics defined by Rubin, Fein and Vandenberg (1983):

1. *Play is intrinsically motivated*
2. *Play is characterized by attention to the means rather than the ends*
3. *Play is distinguished from exploratory behavior.*
4. *Play is characterized by nonliterality or pretense*
5. *Play is free from externally applied rules*
6. *The participant is actively engaged*

It is important to keep these embedded foundations in check when approaching the study of play; however, it is also critical to note that "play is a multidimensional construct that varies in meaning across time, culture, and contexts e.g., Cohen, 2006 (Fisher, Hirsh-Pasek, Golinkoff, and Gryfe. 2008). To better understand play, it is important to know what types are present because play can take a number of forms. According to David Elkind's *The Power of Play*, there are four major types of play that can be identified: mastery play, kinship play, therapeutic play, and innovative play (Elkind, 2007, p.103).

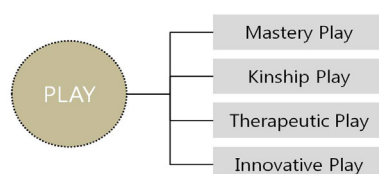


Figure 1. Major types of play

**Mastery play:** *construct concepts and skills*

**Kinship play:** *initiation into the world of peer relations*

**Therapeutic play:** *dealing with stressful events*

**Innovative play:** *introduce variations to skills and concepts*

Although all four types of play are critically important for children in their middle childhood, innovative play has an important contribution to a child's development. Most of the play types observed in this study fall along the lines of innovative play. The efficiency-driven motives found in today's mentality resonates how play is understood. Play is largely divided into two distinct forms of structured play and non-structured play. The primary difference between the two is adult intervention. Structured play is guided with an "inherent goal-oriented structure." Non-structured play is spontaneous, "imaginative or creative in process" and not necessarily oriented towards a solidified goal. (Fisher, Hirsh-Pasek, Golinkoff, and Gryfe, 2008). Various studies acknowledge the increase in structured play and activities "leaving them [children] with less time to initiate their own activity in school or at home." (Guddemi & Eriksen, 1992; Singer & Singer, 2000; Bergen, 2002; Perry, 2003 recited by Clements, 2004). With this distinction, the acceptance of what equates to child's play and what does not depends on each individual. Some play theorists do not consider structured play as a true form of child's play, although they may not deny its importance. For the purpose of this study, unstructured play, also known as "free play<sup>2</sup>," is designated as the form of children's play. In efforts to allow children to play, the role of play space becomes a critical component.

According to Mitsuru Senda, children's play environments are comprised of 4 separate elements: 1. Play space 2. play time 3. play group and 4. play method. The first part of Figure 2 by Mitsuru Senda essentially means these four elements must be fulfilled in order for play to occur. In this instance, play is referring to "free play." Play space refers to the physical spatial qualities set aside for the specific purpose of play. Play time is time set aside for play. Play groups refer to friends or playmates in the act of playing. Play methods refers to the different play activities that children engage. The original diagram by Senda has been re-interpreted. To further develop this diagram of play requirements, the importance of each element was re-organized.

In child's play, the two main elements become space and time. According to Winnicott, "playing has a time and a place, and it is important to recognize that both place and time can vary." (recited by Harker, 2009). Time set aside or available for play is a critical factor for children, but once play time has been secured, space becomes the next factor. Within the context of space, the other elements co-exist. According to Vandenberg's research, "the environment not only affected the type of social play the children were likely to be involved in, but also influenced the size of the play group for each type of play." (Vandenberg,

<sup>2</sup>Play that is unstructured and spontaneous with little to no adult intervention. (Frost, Wortham, Feifel, 2008).

1981). Play groups and play activity are determining factors for play space. The social context of play groups for children in their middle childhood consists of peers and the absence of adults, teachers or parents (Robson, 1993). With these facts in mind, the play environment elements are re-configured from the diagram provided by Mitsuru Senda. According to this re-configuration of play elements, the important role of play space becomes much more apparent. For children, space has a large contribution to the quality of performance because children are still very limited to their environment. "Because children's experiences are limited by the places they inhabit, it is vitally important that we play attention to those places." (Strong-Wilson & Ellis, 2007). Many other factors such as place making, identity, memory are all associated with play space; therefore, a better understanding of these spaces can be utilized to create successful play spaces that promote children's play.

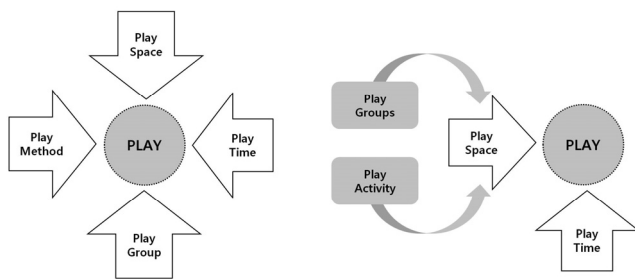


Figure 2. Reconfigured play elements

### 3. METHODOLOGY

In this study a combination of methods were applied in efforts to best understand the perceptions of children. At first, a small study group was organized as a pilot study in order to determine the best ways to word questions and obtain information regarding the kinds of thoughts children have during their middle childhood years. This pilot study was conducted during a duration of three days, one and a half hour sessions, with seven children. These children were exposed to different types of architectural spaces through visual images, and expressed their opinions in a textual format. A simple questionnaire was distributed and other activities such as open discussions and drawings cognitive maps to their favorite spaces were conducted during these sessions. After this pilot study, the final questionnaire was re-formatted and distributed to the selected subjects. Due to the fact that children in their middle childhood years are most easily approached through the public schooling systems, five different elementary schools were contacted. In the city of Seoul, two elementary schools agreed to participate and three elementary schools agreed to participate in the city of Gwacheon. The diverse choices of elementary schools in both the city of Seoul and Gwacheon provide a number of combinations that represents the variety of conditions present in the children's population. After these completed questionnaires

were collected, the data was then entered into the statistical analysis program SPSS 15.0. The results narrowed down a number of play spaces and common play interests of children in their middle childhood, which was then visually observed and recorded. A number of in-depth interviews with the children playing within these spaces were also conducted to finalize the process. The combination of a number of methods is an attempt to find the most appropriate way to approach children and obtain the most valid type of information about how children understand their actions of play and the spaces that are in relation to it. The questionnaires addressed the children directly and distributed to 3<sup>rd</sup>-6<sup>th</sup> graders who are considered to be in their middle childhood years. Completion time for each questionnaire was approximately 10 minutes per child. The first part gathers demographic information: housing type, grade, and gender. The rest of the survey focuses on the main concepts of play and play space. The majority of the questions are aimed at the idea of play space.

<b>Background Information</b>	Determining the importance and necessity of this study	
<b>Literature Review</b>	Theoretical readings	Play and Play theory ▪ Piaget & Vygotsky
	Research studies	Middle childhood ▪ Between ages 8-11 Play and play space ▪ Senda & Elkind Contextual studies ▪ Min, Choi, Cho
<b>Methodology</b>	Subject selection	Middle childhood Diverse housing types School cooperation
	Questionnaire	School distribution
	SPSS analysis	Crosstab, Chi-square
	Observational	Observation/interview
<b>Questionnaire Analysis</b>	Children's opinions of play and play Spaces	Y Elementary ▪ Seoul
		D Elementary ▪ Seoul
		G Elementary ▪ Gwacheon
		M Elementary ▪ Gwacheon
		C Elementary ▪ Gwacheon
<b>Observational Analysis</b>	Results- Spaces	5 School playgrounds 5 Playgrounds
	Interviews & questions	
<b>Conclusion</b>	Concluding findings & directions for further study	

Figure 3. Overall Research Framework

The questionnaire itself is both multiple choice and short answer; however, due to the analysis process, short answer question have been limited. A quiet time was set aside for the completion of the questionnaires during school, which was supervised by a number of monitors in case there were any questions regarding the general format or wording of the questions. After these questionnaires were collected by the separate schools, the results were analyzed and the common play spaces for children were detected. The two main types of spaces were then charted on a general map and the similarities and differences were visually observed. These observations were also accompa-

nied by in-depth interviews with children within these spaces.



Figure 4. Aerial view of Seoul and Gwacheon, South Korea

It is important to note that much of the initial results obtained from this study are qualitative in nature rather than quantitative due to the intrinsic nature of play.

#### 4. RESULTS AND ANALYSIS

Due to the intense population density apartment housing was introduced during the 60's and "apartment housing gradually became the most popular dwelling type in the city"; however, since it is not the only type of housing in Korea it is crucial to include the different types of housing for this study (Seo, 2005, p. 25). In order to acquire the diverse conditions found in South Korea, diverse locations were selected. Out of the two elementary schools that were located in Seoul, D Elementary is 1 out of 30 elementary schools located in Gangnam-gu. The most common type of housing is the apartment (54.8%) followed by low-rise multi-family housing (37.8%), and single-family housing (1.7%) (Gangnam statistics service, 2009). Y Elementary is 1 out of 15 elementary schools located in Yongsan-gu, which has a population of 251,043 people. The most common type of housing is low-rise multi-family housing (34.1%), which is closely followed by apartment housing (33.1%) and single-family housing (13.4%) (Yongsan statistics service, 2009). The remaining 3 elementary schools are located in Gwacheon city. This city has a total population of 69,803 people with 6 separate dong. The most common type of housing type is the apartment (62.4%) followed by single-family housing (30.5%), and low-rise multi-family housing (26.9%). G Elementary is located in Jungang-dong that has a total population of 10,807 people or 15.5% of Gwacheon city's population. C Elementary and M Elementary are both located in Byeoryang-dong with 16,828 people or 24.1% of Gwacheon city's population (Gwacheon statistics service, 2009).

(1) The 5 public elementary schools that participated in this study were located in two different cities. A large majority 295 (57.5%) of the questionnaire surveys came from the two schools located in Seoul, South Korea. In the grade level division, 298 (58.1%) of the results came from the 5<sup>th</sup> grade. The gender ratio between male and female subjects is nearly equivalent with 269 (52.4%) male student respondents and 231 (45.0%) female student respondents. The housing units for the subjects are divided into 3 different types: apartment housing, single-family housing, and low-rise multi-family housing. A large number of the sub-

jects live in apartment housing unit 241 (47.0%) which is closely followed by the low-rise multi-family housing unit 174 (33.9%) and the single-family housing unit 96 (18.7%).

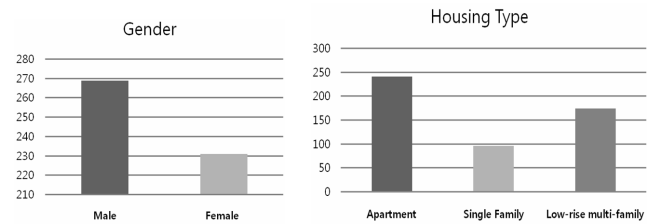


Figure 5. Gender and Housing Type

Table 1. Subjects for the Study		N=513
	Sub-division	Frequency N (%)
School Name	M Elementary	67 (13.1%)
	C Elementary	93 (18.1%)
	G Elementary	58 (11.3%)
	Y Elementary	123 (24.0%)
Grade Level	D Elementary	172 (33.5%)
	3 <sup>rd</sup> / 4 <sup>th</sup> Grade	161 (31.4%)
	5 <sup>th</sup> Grade	298 (58.1%)
Gender	6 <sup>th</sup> Grade	54 (10.5%)
	Male	269 (52.4%)
Housing Type	Female	231 (45.0%)
	Apartment	241 (47.0%)
	Single-family Housing	96 (18.7%)
	Low-rise multi-family housing	174 (33.9%)

(2) In a cross tabulation analysis between housing unit type and the four types of play seen in Table 2, the Pearson Chi-Square value is  $p = .001$  which is a value that confirms a significant relationship. According to the results, children who lived in apartment housing units selected sports 93 (39.9%) as the most common type of play. This was followed by active play<sup>3</sup> 84 (36.1%), calm play<sup>4</sup> 29 (12.4%), and digital play<sup>5</sup> 27 (11.6%), respectively. Children from low-rise multi-family housing units selected active play 73 (43.7%) as the play type most commonly engaged, followed by sports 42 (25.1%), digital play 29 (17.4%) and calm play 23 (13.8%), respectively. In cases with children from single-family housing, active play 33 (37.1%) was first, followed by digital play 25 (28.1%), sports 19 (21.3%), and calm play 12 (13.5%), respectively. Children from single-family housing units show an interesting pattern where their first choice of play is active play, however, their second choice of play is digital play. Both

<sup>3</sup>Active play activities include games such as tag, hide-and-seek, cops and robbers, etc.

<sup>4</sup>Calm play includes games such as board games, cards, etc.

<sup>5</sup>Digital play includes games such as Nintendo DS, computer games, game systems, etc.

children from apartment housing units and low-rise multi-family housing units engage mostly in active play and sports before they turned to digital play. When the spatial and physical qualities of digital play are observed closely, most digital play is supported by small spaces and usually does not require the participation of large groups. As mentioned beforehand, children from single-family housing units tend to engage in activities that are not as heavily dependent on a large number of playmates. Extrapolating off of the fact that there is a lower density of people per area around single-family housing units, available playmates for the children can often be limited compared to areas with a higher density of people per area such as apartments and low-rise multi-family housing units. The initial environment provides these parameters

Table 2. Types of Play- Housing N=489

Housing Unit Type	Calm Play N (%)	Active Play N (%)	Sports N (%)	Digital Play N (%)	X <sup>2</sup>
Apartment housing	29 (12.4%)	84 (36.1%)	93 (39.9%)	27 (11.6%)	
Single-family housing	12 (13.5%)	33 (37.1%)	19 (21.3%)	25 (28.1%)	3.779 ***
Low-rise multi-family housing	23 (13.8%)	73 (43.7%)	42 (25.1%)	29 (17.4%)	

% within housing type \* p<0.005, \*\* p < 0.01, \*\*\* p < 0.001

(3) Differences in decision making have a lot to do with gender roles, which becomes much more apparent during the middle childhood years. The Pearson-Chi-Square value for this relationship is p=0.000 confirming this relationship as significant. Sports 122 (48.0%) was the choice of play type that was done most often by male students, which was then followed by digital play 63 (24.8%), active play 45 (17.7%), and calm play 24 (9.4%), respectively. Female students, on the other hand, picked active play 139 (62.1%) as the type of play that is done most frequently, which was followed by calm play 40 (17.9%), sports 28 (12.5%), and digital play 17 (7.6%), respectively. Although the 1<sup>st</sup> choice of play selected by both groups is physically involved, they differ in structure and motive. Sports as a play type demands a specific spatial conditions as well as a designated number of participates. It is a more rigorous type of activity that tests certain motor skills and supports collaboration efforts between participants in achieving a distinct goal. Active play, in comparison, is much more flexible. The rules of the game change according to the situations at hand and it is much more involved on a more social and emotional level. Instead of being based mainly on a collective collaboration there is the potential for either collaboration or independence. Efforts are also not goal oriented and less dependent on the overall outcome. There is more communication in the sense that agreement on rules and games need to be settled; however, unlike sports, it does not require an intense collaboration of skill and effort. The dominance of male children's interest in digital play can also be understood through these figures, whereas female students engage in calm play be-

fore they turn to digital play. The differences in play behaviors according to gender roles are quite apparent.

Table 3. Types of Play- Gender N=489

Gender	Calm Play N (%)	Active Play N (%)	Sports N (%)	Digital Play N (%)	X <sup>2</sup>
Male	24 (9.4%)	45 (17.7%)	122 (48.0%)	63 (24.8%)	45.344
Female	40 (17.9%)	139 (62.1%)	28 (12.5%)	17 (7.6%)	***

% within gender \* p<0.005, \*\* p < 0.01, \*\*\* p < 0.001

(4) The various names that the children listed in the open ended question as their favorite game/ play went through a processes of grouping and organizing in order to analyze the data. Approximately 21.2% male students answered baseball as their favorite type of play. For the female students, 14.7% of the responses listed tag. When these play activities are compared with the 1<sup>st</sup> choice response to most visited play space, male students selected school playground and female students indicated the regular playground. In the case of baseball, the school playground provides the most ideal space; however, for the game tag, children need both running space and obstacles. Unfortunately, this confirms segregation in play activities and play spaces between male students and female students. Although the existences of gender differences have been proven through a number of studies, spatial segregation widens this gap even further.

Table 4. Subjects for the study N=500

Gender	Name of play activity N (%)	Play space N (%)
Male 269 (53.8%)	Baseball 57 (21.2%)	School playground 67 (26.1%)
Female 231 (46.2%)	Tag 34 (14.7%)	Playground 63 (28.3%)

% within gender

(5) It is mandated by law to provide spaces for children within residential areas. Different play facilities and playgrounds are created both inside and outside residential housing units, whether there are apartment housing units or single-family housing units. The necessity to distinguish safe play areas for children is acknowledged; however, does the availability of these spaces meet the needs of the children? A question regarding the availability of play space was included in the questionnaire. According to statistical analysis figures, there is a significant relationship between the housing unit type that children live in and the children's perception of space availability for play. Table 5 lists the figures and the p=.000, which is p<0.001 proving the significance level. The four point scale that the questionnaire listed ranged from many spaces to some spaces

to few spaces to no spaces. Children who live in apartment housing units selected some spaces 110 (48.0%), which made it the most common perception among children and how they understand available play space. Children who live in single-family housing 34 (35.8%) and low-rise multi-family housing 82 (48.8%) expressed the conditions of few spaces being available for play. When the extremes of many spaces and no spaces are observed in detail, children who live in apartment housing units (54.2%) had the highest frequency in selecting many spaces in comparison to any other housing unit and children who came from low-rise multi-family housing units (51.5%) had the highest frequency level for selecting no spaces in comparison to the other two housing unit types. As a result according to the children's perception, those who reside in apartment housing units have more play spaces arranged, whereas those who live in low-rise multi-family housing seem to recognize a lack of available play space. Children from single-family housing units tend to be neutral in their decision about play space availability. The conscious effort in creating play spaces within apartment communities is, no doubt, different from the other housing types. The specific spatial characteristics associated with each type of housing unit cannot be ignored when taking perception into account. Ultimately, the lack of available play spaces affects the quality of child's play.

Housing Unit Type	Many Spaces N (%)	Some Spaces N (%)	Few Spaces N (%)	No Spaces N (%)	X <sup>2</sup>
Apartment	39 (54.2%)	110 (55.8%)	74 (38.9%)	6 (18.2%)	
Single-family	18 (25.0%)	33 (16.8%)	34 (17.9%)	10 (30.3%)	5.089 ***
Low-rise Multi-family	15 (20.8%)	54 (27.4%)	82 (43.2%)	17 (51.5%)	

% within available space \* p<0.005, \*\* p < 0.01, \*\*\* p < 0.001

(6) In a crosstab analysis of how walking distance correlates with grade levels, the Chi-square analysis revealed a P-value of P=.001, or p<0.01 which statistically justifies the significance of the relationship. 3<sup>rd</sup> and 4<sup>th</sup> graders, on average, tend to travel to play spaces that do not exceed 10 minutes. 5<sup>th</sup> graders range from under 5 minutes to 10-20 minutes. They are willing to travel further from their starting point in comparison to 3<sup>rd</sup> and 4<sup>th</sup> graders. 6<sup>th</sup> graders, as one would assume, tend to travel even further from their starting destination. A majority of the students selected 10-20 minutes (46.2%) followed by the choice over 20 minutes (21.2%). The fact that this question regarding travel distances did not address the possibility of adult accompaniment may explain the high response rate of 3<sup>rd</sup> and 4<sup>th</sup> graders selecting the response over 20 minutes. At any rate, the overall results confirm as children get older, they are willing to travel further distances in search of an appropriate play space that correlates to their specific play needs.

Grade Level	Under 5 Mins. N (%)	5~10 Mins. N (%)	10~20 Mins. N (%)	Over 20 Mins. N (%)	X <sup>2</sup>
3 <sup>rd</sup> / <sub>4</sub> <sup>th</sup> Grade	46 (29.5%)	46 (29.5%)	27 (17.3%)	37 (23.7%)	
5 <sup>th</sup> Grade	79 (27.2%)	80 (27.6%)	85 (29.3%)	46 (15.9%)	3.637 **
6 <sup>th</sup> Grade	7 (13.5%)	10 (19.2%)	24 (46.2%)	11 (21.2%)	

% within grade level \* p<0.005, \*\* p < 0.01, \*\*\* p < 0.001

Playgrounds are equipped though materialistic means to support the play activities of children. The locations for playgrounds vary from site to site due to the regional characteristics; however, the success of each playground is very closely associated with accessibility and age appropriate design. All of the playground locations observed had large playground sets with the basic features of slides, swings, and monkey bars. These spaces are all easily identified as children's spaces due to the equipment and the bright primary colors and signs. Some of the common spatial characteristics identified within the 5 popular playgrounds are as follows:

1. The popular playground sites have fairly large play spaces and play equipment set aside for children with lots of running space.
2. There is a variety of play equipment that cater to a range of ages rather than just one.
3. The types of play engaged within this site vary from a test of skills using the play equipment, such as the monkey bars, or an active type of play that requires running and climbing.
4. The accessibility of these areas is very high and they are usually located in areas that are heavily travelled.



Figure 6. Popular outdoor playgrounds

During the observation process of these 5 playground areas, many games and forms of play were observed. Children in groups of 5-7 would play games of tag and hide-and-seek. Usually, these large groups were all male children who were in the 3-4 grades. Female play groups were much smaller in size. They would range from 2-3 children and they would mostly engage in play that was related to refining motor skills and utilizing play equipment, such as skipping bars on the monkey bars or climbing up and down ladders and slides, while engaging in conversation. Only the young children ages 1-7 were accompanied by a guardian. These young children were avoided by the children in their middle childhood. Most playground play sets

were large in size and the equipment contained a variety of options; however, it was easy to see that the playground play sets took up a good majority of the space. It would be difficult for the spaces to support other activities that do not include the actual play equipment. Another fact to note is that, the male student who did play in the playgrounds were younger in age and played games that required much more physical activity. Older male students would come to the playground when they were restricted from their play area of choice. Even in the playground space, they would engage in sport related activity by accepting the playground as an unavoidable barrier. Female students, on the other hand, were older in age and seemed to avoid mixed gender play as they got older. They enjoyed playing in small groups and engaged in activities that were more intimate. The most successful playground that accommodated children in their middle childhood was the one that connected the playground designed for older children to the leisure spaces for the adults.

In the school playgrounds, each elementary school was equipped with its own playground, which was usually a wide open space used for a variety of school functions. Morning exercises, school announcements, and field days are just a couple examples of the events that occur on the school playgrounds. After school hours the spaces were not only available for the children, but also available for the residents that lived nearby. The volume of use was dependent on the regional characteristics. The playgrounds of the 5 schools are very similar in overall layout and function. Because large open spaces are limited in areas of Seoul and Gwacheon, any type of activity that requires a large open space is concentrated in these areas. Some of the most common spatial characteristics identified within the 5 school playgrounds are as follows:

1. The main function for the school playground relies heavily on its ability to support sports related functions such as soccer and baseball.
2. Spaces are left as open as possible by restricting all types of equipment and barriers towards the edges.
3. All of the school playgrounds have some sort of play equipment available along the sidelines.



Figure 7. Public elementary school playgrounds

During the observation process of the 5 school playground areas, a variety of activities were observed. Children came to these spaces in hopes of playing in large groups. The dominant type of activity within these spaces was organized sports. Children brought soccer balls and baseball equipment to engage in group sports activities. Many times they are willing to wait until the desired number of participants is met in order to play the sports activity

intended and a large majority of these children are mostly male students. The playground equipment available in these areas are not as heavily used and very young children seldom enter the space. When a school playground is located within districts that have a large number of low-rise multi-family housing units, for example D elementary, a diverse set of users will occupy the space: children, residents, and even the elderly. The school playground acts as a communal space for the residents. Due to the diverse set of users, diverse activities are also observed. However, when a district has a large percentage of single-family housing units and apartment units like G Elementary, the school playground is virtually abandoned after school hours. After these observations, the importance of the school playground as a dependable play space for children was confirmed; however, it also confirmed a division between user groups, specifically associated with gender, among children.

Overall, the results obtained from the children's survey from the 5 different public elementary school and the observational investigations offer a glimpse of how play and play spaces are perceived by children. According to the survey results, the play spaces that are being created do not match the play activities, creating difficulty or adjustments on the child's part in order to play within the spaces. This difference in space also creates a gender gap<sup>6</sup> in play. Although there are many studies that conclude an inevitable difference between females children's play and male children's play, space contributes to this factor, further segregating the two groups from each other. An important fact about play spaces is that they are indeed sought out by children. A good majority of play takes place in designated play spaces according to the survey and observational results. The importance of these spaces is critical to play. It is also through these play experiences that children expect to meet with friends and engage in bodily activity as forms of dynamic interaction. After these observations it was quite apparent that children need play spaces to be set aside for them; however, it was quite obvious that the qualities found in successful play spaces are not applied in all playgrounds spaces that are created for children. Overall, children adapt to the spaces that are provided. They adjust their activities according to the physical circumstances; however, if these adjustments are a persistent occurrence and act as limiting factors when engaging in play, they must be addressed.



Figure 8. Children adapting to play environments

<sup>6</sup>Gender segregation is typical in male and female children, especially during play. (Sutton-Smith, 1997).

5. DISCUSSION

In any other spatial design scenario, the client or the users in particular have a direct influence in the design process; however, in the case of play spaces, the actual children are left out of the process.

They are presently the least able to influence the design of their environment. Not only are children seldom consulted about these matters, but their needs are often completely forgotten when the facilities are being designed. The important decisions are made by another group at the other end of our spectrum of user. (Dattner, 1969, p. 33)

Children in their middle childhood years engage in activities that are physically active. Male children tend to engage in sport related activities and female children tend to engage in active play. Even though both activities are physically active in nature, the spatial requirements for these spaces are quite different. Active play requires spaces that have play equipment and obstacles to hide behind. Sports activities require large open spaces that are free from obstacles. Through this study the distinct separation between gender roles became obvious and the spatial qualities also contribute to this distinction. Most sports related activities are done at the school playgrounds and active play is done in playgrounds with play equipment. This spatial separation ends up enforcing segregation between the two groups. Also there is a lack of school playground-like spaces for sports related play; therefore, many times children are forced to adapt to the given conditions and continue their activities in spaces that are not appropriate for the activity they wish to engage. The result is an excess of play spaces with play equipment and a lack of play spaces for sports. Lastly, children from single-family units show a tendency of engaging in more alone play in comparison to children from apartment or low-rise multi-family housing units. Housing units also affect the perceived availability of play spaces for children.

The following are possible design implication in response to the findings from this study. (1) To avoid gender segregation that is apparent in play spaces, newly designed play spaces must accommodate for both sports related spaces and play spaces with play equipment. These combined spaces need to exist on equal levels without any emphasis or preference to a particular type of space. (2) If adequate space is unavailable in the given context for both play equipment and open field space, more open field spaces as opposed to strictly playground equipment spaces need to be created. (3) The planning process for areas with a large majority of single-family housing units needs to consider the importance of communal spaces for children. (4) Play space guidelines for low-rise multi-family housing areas needs revision or a specific set of guidelines that addresses the pack of play spaces within this particular housing type.

Play spaces for children are continuously created; however, they do not provide the ample opportunities to encourage innovative play. These spaces are not designed in accordance to children’s activities but rather segregate and limit the types of play behavior.

Table 7. Results and Implications

Results & Findings	Implications
<ul style="list-style-type: none"> <li>- Male students identified a lack of space for sport-related activities</li> <li>- Male and female students are segregated from one another due to the spatial separation of playground equipment and open field</li> </ul>	<ul style="list-style-type: none"> <li>- Newly designed spaces need to accommodate for both playground equipment and open fields while avoiding an emphasis on one space or the other</li> <li>- Additional open field spaces as opposed to strictly playground equipment space need to be provided</li> </ul>
<ul style="list-style-type: none"> <li>- Children from single-family housing units tend to have all the space they need but engage the least in group play in comparison to children from apartments of low-rise multi-family housing</li> <li>- Children from low-rise multi-family housing desire more space to be set aside for play specifically</li> </ul>	<ul style="list-style-type: none"> <li>- The planning process for areas with a large majority of single-family housing units need to consider the creation of communal spaces</li> <li>- Areas with low-rise multi-family housing needs to adapt a different set of play space guidelines because there is a lack of available play space</li> </ul>

Children are often denied the right to speak for themselves either because they are held as incompetent in making judgments or because they are thought of as unreliable witnesses about their own lives. (Qvortrup, et. al 1994, p.2).

Children are more than willing to express their needs and desires for play space. It is only a matter of motivation on the designer’s part to listen. Children are still very limited to their environment. “Because children’s experiences are limited by the places they inhabit, it is vitally important that we play attention to those places.” (Strong-Wilson & Ellis, 2007). Place making, identity, memory are all associated with play and space and better understanding of where and why children play can be utilized to create successful spaces that promote children’s play.

6. CONCLUSION

The overall results from this study confirm the importance of children’s play spaces and its role in relation to play. Since the diversity of play activities is seemingly endless, the spaces to contain these activities are limitless. It would be ignorant to provide a space that is simply “open” to create limitless possibilities; however, it would be naïve to provide a structured play space because it may lacks the flexibility needed for innovative play activities. Through the children’s responses from the questionnaires, it is evident that children have their own opinions about play and play spaces. This study identified the types of play and spaces used by children within the present conditions. As an overall consensus, the types of play and spatial recognition for children differ according to 3 different qualities: gender, grade, and housing type. Once the different types of play activities engaged by children in the area are identified, the spatial requirements can be extrapolated. Space



is dependent on the activities of its users but it is also important to remember that "...the environment both affords opportunities for performance and presses for certain types of behavior" (Kielhofner, 1985, p.2). In the case of children, "constructing an overall environment that encourages play is pre-requisite to a child's exploration of the environment (Morrison, Metzger, & Pratt, 1996 recited by Hamm, 2006).

This study identifies 3 different issues in relation to the design of play spaces for children. (1) Variation of what types of resources are available in play spaces: Play equipment is seen as the ideal method to accommodate for all types of play for all ages. This is proven to be a mistake. Children, especially in their middle childhood, engage in a variety of play activities where play equipment is desired, but also unwanted. Further study on the appropriateness of the resources provided in play spaces needs to be conducted in order to create diverse spaces that support middle childhood play. (2) Detection of gender segregation in play spaces: An alarming discovery of gender segregation though play spaces was detected from this study. It is a natural developmental pattern for children in their middle childhood to become acutely aware of gender roles. Not only play, but all activity is affected by this change; however, what was alarming is the fact that play spaces have an active role in gender segregation. (3) Common needs between children in their middle childhood and adults: Children in their middle childhood do not share common developmental patterns or needs with children in their early childhood years; however, their spaces are most often designed together because they are both perceived by designers as "children." In actuality, children in their middle childhood seem to share common needs with adult leisure spaces. This is another direction that requires more research.

In conclusion, for developing children in their middle childhood years, innovative/ self-initiated play is significantly important. The views on play continue to shift and change; however, the fact that play is inevitable and necessary for children remains. The growing interest in children's play and play spaces is a positive development, but it is important to avoid establishing a set design intended for all children's play spaces. Dynamic interaction in the form of play varies according to age, gender, and housing units as concluded from this study. These variables need to be taken into consideration in order to create spaces that can support innovative/ self-initiated play.

#### REFERENCES

- Berk, L. E., (2001). *Development Through the Lifespan*(2<sup>nd</sup>ed.) Boston: Allyn and Bacon
- Choi, M. W. and Choi, B. S. (2003). A study on the evaluation of playground environment in Daejeon City. *Architectural Institute of Korea Journal*, 19(7), 105-115.
- Clements, R. (2004). An Investigation of the Status of Outdoor Play. *Contemporary Issues in Early Childhood*, 5(1), 68-80.
- Dattner, R., (1969). *Design for Play*. Cambridge: Reinhold Book Corporation.
- Elkind, D., (2007). *The Power of Play*. Philadelphia. Da Capo Press.
- Feinstein, L. and Bynner, J. (2004). The Importance of Cognitive Development in Middle Childhood for Adulthood Socioeconomic Status, Mental Health, and Problem Behavior. *Child Development* 75(5), 1329-1339.
- Fisher, K. R., Hirsh-Pasek, K., Golinkoff, R. M., and Gryfe, S. G. (2008). Conceptual split? Parents' and experts' perceptions of play in the 21<sup>st</sup> century. *Journal of Applied Developmental Psychology*, 29, 305-316.
- Frost, J. L., Wortham, S. C., & Reifel, S. (2008). *Play and Child Development*(3<sup>rd</sup>ed.) New Jersey: Pearson Education.
- Gangnam Statistics Service. (2009). *2010 Statistical Data*. Retrieved May 4, 2010, from [http://gss.gangnam.go.kr/jsp/GSS1/GSS1000.jsp?page\\_cd=006&sub\\_cd=02](http://gss.gangnam.go.kr/jsp/GSS1/GSS1000.jsp?page_cd=006&sub_cd=02)
- Gwacheon Statistics Service, (2004). *2009 Gwacheon Statistical Data*. Retrieved May 4, 2010, from [http://210.104.127.3/stat\\_system/](http://210.104.127.3/stat_system/)
- Hamm, E. M. (2006). Playfulness and the Environmental Support of Play in Children With and Without Developmental Disabilities. *OTJR:Occupation, Participation and Health*, 26(3), 88-96.
- Harker, C. (2005). Playing and Affective Time-Spaces. *Children's Geographies*, 3(1), 47-62.
- Hyder, T., (2005). *War, Conflict and Play*. Berkshire. Open University Press.
- Kielhofner, G. (1985). *A model of human occupation: Theory and application*. Baltimore: Williams and Wilkins.
- National Geographic Information Institute. (2007). *Population Density*. Retrieved May 23, 2010, from [http://atlas.ngii.go.kr/english/explanation/population\\_1\\_3.jsp](http://atlas.ngii.go.kr/english/explanation/population_1_3.jsp)
- Qvortrup, J., Marjatta, B., Giocanni, S., Helmut, W. (Eds.). (1994). *Childhood Matters: Social Theory, Practice and Politics*. Brookfield: Avebury.
- Robson, S. (1993) Best of all I like choosing time. Talking with children about play and work, *Early Child Development and Care*, 92, 37-51.
- Rubin, K. H., Fein, G. G., & Vandenberg, B. (1983). *Handbook of child psychology*. New York: John Wiley and Sons.
- Senda, M. (1998). *Play Structure: Design of Play Environments for Children*. Tokyo: Kashiwashobo Publishing.
- Seo, K. W., (2005). *Spatial Interpretation of Housing: The role of topological intuition in the evolution of the houses in Seoul*. Doctoral dissertation, University of College London, 2005.
- Smith, P.K., Takhar, M., Gore, N., & Vollstedt, R. (1986). Play in young children: Problems of definition, categorization, and measurement. *Early Child Development and Care*, 19(1,2), 25-42.
- Statistics Korea. (1996). *2010 Statistics on the Youth*. Retrieved May 4, 2010, from [http://kostat.go.kr/eboard\\_faq/BoardAction.do?method=view&board\\_id=106&seq=312&num=312&parent\\_num=0&page=1&sdate=&edate=&search\\_mode=&keyword=&catgrp=eng2009&catid1=g01&catid2=g01&catid3=g01ba&catid4=](http://kostat.go.kr/eboard_faq/BoardAction.do?method=view&board_id=106&seq=312&num=312&parent_num=0&page=1&sdate=&edate=&search_mode=&keyword=&catgrp=eng2009&catid1=g01&catid2=g01&catid3=g01ba&catid4=)

- Strong-Wilson, T., and Ellis, J. (2007). Children and Place: Reggio Emilia's Environment as Third Teacher. *Theory into Practice*, 46(1), 40-47.
- Sutton-Smith, B., (1997). *The Ambiguity of Play*. Cambridge. Harvard University Press.
- Vandenberg, B. (1981). Environmental and Cognitive Factors in Social Play. *Journal of Experimental Child Psychology*, 31, 169-175.
- Yongsan Statistics Service, (2009). *2009 Yongsan Statistical Data*. Retrieved May 4, 2010, from <http://ebook.yongsan.go.kr/home/list.php?code=1210&sitecdv=S0000100&menucdv=03040200&decorator=pmsweb>
- (Date of Submission : 2010.8.2)