

**Investigation of Identity in Interior Space of
Kindergarten: A review on an example of
High/Scope Kindergarten**

Shirin Izadpanah

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Approval of the Institute of Graduate Studies and Research

Prof. Dr. Elvan Yılmaz
Director

I certify that this thesis satisfies the requirements as a thesis for the degree of Master of Science in Architecture.

Assoc. Prof. Dr. Özgür Dinçyürek
Chair, Department of Architecture

We certify that we have read this thesis and that in our opinion it is fully adequate in scope and quality as a thesis for the degree of Master of Science in Architecture.

Asst. Prof. Dr. Kağan Günçe
Supervisor

Examining Committee

1. Prof. Dr. Kutsal Öztürk

2. Assoc. Prof. Dr. Mukaddes Fasli

3. Asst. Prof. Dr. Kağan Günçe

ABSTRACT

This thesis investigates the main elements and factors which define an identity in interior space of kindergarten with the intention of supporting children's learning and development. Identity is a complex issue and at the same time essential in favor of creating positive sense for users in interiors. Since children interact with interior space physically more than adult the importance of qualified interior space becomes more critical. Kindergartens are one of the communities which a large number of children attend before attending primary school. In this research, in first chapter the necessary elements due to defining identity in interior space have been discussed by referring to the original concept of identity. In second chapter, elements and factors which define identity in interior space of kindergarten has been defined by referring to previous studies and researches and in third chapter, interior space identity of kindergarten is investigated according to High/Scope education. According to the findings, architectural and interior space elements with the intention of supporting physical characteristic of space that represent children's requirements define an identity in interior space of kindergarten. Parallel to interior space characteristics, age category of children and the education method are two other factors which affect the interior space identity of kindergarten as well. In this study it is emphasized that form is the most significant element in defining children's requirements in interior space of kindergarten, but all the factors and elements should concrete each other with the aim of enriching the identity and increasing the design quality of interior in kindergarten.

Keywords: Kindergarten, interior space elements, children's requirements, preschool children, High/Scope education, identity.

ÖZ

Bu tez, çocukların öğrenme ve gelişimini desteklemek amacıyla kreş mekanlarında kimliği tanımlayan ana eleman ve faktörleri incelemektedir. Kimlik karmaşık bir problemdir ve aynı zamanda kullanıcılar için olumlu bir his uyandırması açısından önemlidir. Yetişkinlere kıyasla çocuklar iç mekanlarla fiziksel olarak daha çok etkileşim halinde oldukları var sayılarak, özellikle gelişimleri için nitelikli iç mekanların önemi daha kritik hale gelir. Kreş mekanları, çocuklara ilk okuldan önce eğitim verilen çoklu yaşam alanlarıdır. Bu çalışmanın birinci bölümünde, iç mekanlardaki kimlik tanımı için gerekli elemanlar, genel anlamı ile kimlik konsepti referans verilerek tartışılmıştır. İkinci bölümde, kreş mekanlarındaki kimlik belirleyici eleman ve faktörler yapılmış çalışmalar referans verilerek, genelden kreş mekanlarına indirgenerek tanımlanmıştır. Üçüncü bölümde ise kreş iç mekanlarındaki kimlik ‘Yüksek seviyede verilen eğitim yaklaşımı (High/scope)’na göre sorgulanmıştır. Bulgulara göre, mimari ve iç mekan elemanları çocukların ihtiyaçlarını desteklemek amacı ile iç mekanda kimlik tanımlar. İç mekan özelliklerine paralel olarak, çocukların yaş kategorileri ve eğitim metodu da kreş mekanlarında kimliği belirleyen diğer iki faktördür. Bu çalışmada, biçimin, kreş iç mekanlarında çocukların gereksinimlerini belirleyen en önemli faktörlerden olmasının yanı sıra; tanımlanan faktörler ve bütün elemanlar iç mekanda kimliği tanımlamak, zenginleştirmek ve kreş mekanlarındaki tasarım kalitesini artırmak amacıyla birbirini desteklemesi gerektiği vurgulanmaktadır.

Anahtar kelimeler: Kreş mekanları, İç mekan elemanları, çocuk gereksinimleri, okul öncesi çocuklar, yüksek seviyede verilen eğitim yaklaşımı (High/Scope), kimlik.

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Chapter 1

INTRODUCTION

1.1 Background

Children have tendency to change. They shape their beliefs in response to adults' advises and their surrounded environment. They explore as much as they are allowed and they'll enrich their knowledge as much as they receive education. Today's children will be tomorrow's successful members of the world society. They should be confident to form a secure society which is an important necessity in today's civilization.

Parents and children shape the small society called family. Families are inner oriented and private; it is not easy to reform them directly while children's communities are public and they have the potential to develop. Kindergarten is children's first community before school. Apart from the fact that nowadays number of double career families is increased, positive effect of kindergarten on children has been proved (D.S.Wiggin, 2009); therefore most of the children spend their main period of time during a day in kindergarten.

Consistent with the importance of kindergarten in term of the social order, not only adopting the correct methods for children's development but the interior environment of kindergarten has a significant role in supporting the methods (Trancik & Evans, 1995).

“The first seven years of a child are the years which tendencies are given and the germs of children character are set” (D.S.Wiggin, 2009, p.104). This sentence defines the critical role of early childhood in shaping the person’s identity. Being negligent in children’s growth will give the wrong impressions to them and threaten their future in bigger societies. Today, the world is suffering from the social defect and in order to find the reasons, researchers should go through its members’ childhood (Eisenberg, 1992/1999) and as Greenman (1988, p.30) puts it “childhood is the most powerful period of our lives”, therefore it is all experts responsibility to support the positive development of the miniature members.

Interior design in kindergartens has a direct effect on children’s development (Trancik & Evans, 1995), therefore their designers’ job is to study children’s social and physical needs and design the interior space in order to respond to their needs. Interior space of kindergarten should have a unique identity to make children feel special. Defining this identity cannot be successful only by decreasing the scale of the furniture according to the children’s scale and creating a colorful environment.

Children create a specific image of their surrounding environment before attending the kindergartens and as soon as they enter kindergarten they start to compare the unique characteristic of the new environment with their previous surroundings, which is most probably their home. Adopting the interior space fundamentals in order to create a unique meaning in children’s imagination will increase their place attachment and support their development in that environment (Trank & Evans, 1995). Considering all the above discussions, clarifies the importance of defining identity in interior space of kindergartens.

As soon as children begin to experience their environment they start to shape their self-esteem. Independency begins in children after eighteen months of age. Slowly when children start to talk they start to differentiate themselves from others and start using the words 'me' and 'mine'. They are self-centered till age seven and their brain development is very fast during this stage. It is important for parents to be an optimistic example and create a positive environment to support their development since every impression will affect their self identity in future (Debord, n.d.).

Elements in interior space of kindergartens have effects on children's beliefs. Appropriate design increases the sense of belonging and safety for children and supports their development (Community Playthings, 2009). Identity in interior space of kindergarten will create a positive atmosphere which will be pleasant for both children and other members, responsible for children development. Margaret McMillan emphasis the positive effect of kindergarten on children in today's split society by stating an argument about the "potential of pre-school education to overcome the harmful effect on the development of unhygienic living condition, a restricted environment, family poverty and other hardships (Dudek, 1996, p.13)".

The space around us defines our movement, our temperature, what can be seen and what cannot be seen and how can we communicate to the others. Users' expect from lighting in interior to be able to have vision of their surrounding, they expect to touch the interior furniture and rearrange them and with all the expectations the interiors which make them feel good are interesting for us (Lawson, 2001).

Effect of environment on individual turns out to be more critical when it comes to children(Pol, 2002). According to Paula Lillard “children use the environment to improve themselves; adults use themselves to improve the environment. Children work for sake of process while adults work to achieve an end results (Day&Midbjer, 2007)”. Due to strong effect of overall environment on children, designers should be aware of children’s requirements, so they’ll be able to adopt the appropriate design elements and define identity in interior space of kindergarten and encourage children development.

Designs never happen by a chance. There is always a reason behind each design (Laer & Pentak, 2005). In designing the kindergartens, this reason should be children’s positive development. Every detail in interior space has an effect on human behavior or in other words identity of the interior environment has an effect on defining the identity of its users within that environment (Docherty *et al*, 2006).

Vitruvius has an interesting theory for defining unique architecture. He believes architecture will earn meaning when “it is seen as human body” (F.M.Shih, 1996). Marco Frascari in his essay “The Tell-The-Tale Detail” defines the meaning of architecture by its details. He claims that:

In architecture, feeling a handrail, walking up steps or between walls, turning a corner and noting the sitting of a beam in a wall, are coordinated elements of visual and tactile sensations. The conception of the architecture space achieved in this way is the results of association of the visual images of details gained through the phenomenon of indirect vision, with the geometrical proposition embodied in forms, dimension and location developed by touching and walking through buildings. (Nesbitt, 1996, p.506)

According to Vitruvius (F.M.Shih, 1996) and Frascari (Nesbitt, 1996) statements, in designing the architectural space, designing the details are important because they will be perceived by users as the characteristic of the specific environment. “The users and form reinforce each other and interact” and in this way the identity of interior space will be defined (Hertsberg, 2001).

Although individuals have different perceptions but there are certain methods to provide positive sensation for various views. In kindergarten most the users whom will perceive their surroundings regularly are children, although it should not forget the existence of adults. Since children are self interested and they care about themselves more than anything else (F.M.Shih, 1996), the overall design process should base on their perception and requirements.

Docherty *et al.* (2006, p.1) in their research about “Interior design and residential child care” argue that “Poor design of buildings is likely to lead to stigma and loss of children’s and young people’s self-esteem and self-respect”. To support this argument they explain how the quality of design can support children and staff positive relationship besides encouraging children learning and exploration.

With the intention of providing an appropriate environment for children’s development whom will be future’s politicians, academicians, inventors and in better words professionals should focus on improving the environment of communal spaces. Existence of a source to recommend the important tips in identifying the positive environment in kindergartens will ease the job for both designers and parents in choosing the best option.

In line with the report which was published in 2006 by Scottish Executive website:

Design guidance can provide a valuable tool to ensure that the pertinent issues that mark the success of a children's home are adequately addressed. It can also help identify approaches that are problematic and do not work well... Design guidance can help in preparation of a design process. It can provide the framework for the client to effectively define the considerations to be addressed and to adequately inform the designer during the creative process (p. 2).

This research investigates the elements and factors which affect the identity in interior space of kindergarten and establish a theoretical framework which helps designers to improve the interior environment of kindergarten for children.

1.2 Problem Statement

Children are living in a different world. Psychologists study early childhood and reveal reasons behind their behavior and imagination. According to Matthews (1992) when it is talked about adult perception of a space, it is meant the overall form of that space together with function and aesthetic while children perceive interior space more with its function rather than its level of aesthetic.

As White and Stoeclin (2008) put forward in their research "Adults see the environment as form, shape, structure and as a background, on the other hand, kids see the environment not as a background, but interpret the environment holistically and evaluate it for all the ways they can interact with it", therefore the nonverbal communication between children and interior space is stronger than adults.

Compatible with discussions above, role of interior space for providing various experiences for children is significant. Providing positive physical experiences will increase the space aesthetic for children and improve their development.

Since most of today's children attend kindergartens and due to the influence of interior space on children's development (Trancik, Evans, 1995), the interior space is another teacher which instead of using verbal communication, it uses the nonverbal communication (Augustin, 2009) which in general, include visual and physical experience.

The 'nonverbal communication' between children and adults will be done by the 'specific elements and factors', which affect the character of the interior space or in other words, interior space identity. The problem for actualization of this research was defining the "design considerations in identifying the nonverbal communication between children and interior space of kindergartens in order to create a positive space for children".

1.3 Purpose of the Study

Jean Jacques Rousseau:

Childhood has its own way of seeing, thinking and feeling and nothing is more foolish than to try and substitute ours for theirs (Greenman, 1988, p.21).

Investigating the children's interest, requirements and needs should be main attempt for designers who are responsible to design an environment for them. Categorizing the main items that should be considered in design process will be a positive attempt to lead them.

The purpose of this research is to investigate the elements and factors which affect the identity of interior space of kindergartens to increase children's sense of space and design quality of interior space.

1.3.1 Research Objectives

The main aim of this research aims to provide the frameworks in order to define required consideration for creating identity in interior space of kindergartens in order to support children's development increase the interior space quality for children. Besides the main aim, this study also defines the objectives below:

- Investigate the elements which define identity in interior space in general.
- Investigate the children's requirements in interior space of kindergartens.
- Investigate the design inputs which affect identity in interior space of kindergartens.
- Review the identity in interior space of High/Scope kindergartens.
- Define the main requirements which should be considered in defining the identify in interior space of High/Scope kindergartens.

1.4 Limitation

According to researches, preschool age is the age which parents prefer to send their children to experience outside world (Boca & Wetzels, 2007) and Preschool age is the age which child starts identifying himself (Wana, 2010), therefore 'Pre-School' children are the focus of this research on children's age category.

Kindergartens has been responsible for preschool children's development and learning for a long time, therefore 'Kindergarten' chooses among children's communities as the center of focus of this research.

This study will only consider the 'Interior Space' of kindergartens. "Architecture and interior design consist of manipulation of many different interrelated elements including space, form, structure, light, texture and color (Poore, 1994, p. 17)". Since

interior designers generally do not have the chance to touch the structure and defining new spaces, due to lack of time fund and other limitations (Abercrombie, 1990), therefore they don't always have the chance to touch the structure. This study scope is limited to the review of interior space elements and 'Architectural Elements' will only be introduced and will not be discussed in detail, Since Mark Dudek has done a comprehensive research about architectural form of kindergarten..

The activities differ from one kindergarten to another. Some kindergarten changes their program monthly, but generally modern kindergartens "support activities that encourage the children's development" (Dudek, 1996, p. 17). Undertaking a study for all the methods is not an easy task, therefore choosing a 'Method' is essential for studying interior space of kindergartens. Due to positive results of 'High/Scope' educational this study will only review the interior space of 'High/Scope kindergartens'.

The concept of 'Culture' is introduced, but not discussed in this research since it varies in different states and it should be defined according to specific region.

1.5 Methodology

Researches on children to be reliable generally should be long-term researches and include wide number of participants therefore; document analysis has been employed as the method of this research.

This research will employ qualitative methodology, using document analysis to provide the theoretical framework. In order to provide the framework, reliable sources such as written documents by experts, visual documents, accomplished researches and analysis and official publications and reports will be studied and

interpreted (Patton, 200). The sources for accomplishing this research are mainly books with different publishing dates to catch the wider views through the wider period of time.

Photographs of different children's spaces all around the world related to the discussions has been used to support and visualize the verbal explanations. Images do not only choose from very famous and popular examples but also ordinary good examples as well.

1.5.1 Organization of Research

In secondchapter the concept of identity studies and then the interior space identity has investigates accordingly by relying on studies of experts and categorized as architectural elements (vertical and horizontal elements, openings, spatial organization and spatial relationship) and interior space elements (forms, color, texture, lighting, style) and the interior space elements will be discussed in detail.

In thirdchapter the concept of kindergarten studies in details by considering children's age category, their characteristics and the number of different educational methods to define the general design inputs which do not belong to interior space but has an effect on shaping the identity of interior space of kindergartens. At the end of the third chapter, the interior space of kindergarten is studied in details and the children's main requirements in space which are defined according to children's social and physical characteristics (health, comfort, scale, exploration, control, complexity, safety, privacy, legibility and flexibility) and afterward they are discussed according to interior design elements (form, light, color, texture).

In fourth chapter, the concept of identity reviews in High/Scope kindergartens and main interior spaces of kindergarten are categorized related with High/Scope daily activities and the effect of interior design elements and characteristics which are discussed in previous chapters explained by referring to the High/Scope principle and theory, to identify the most significance requirements in interior space related with children's characteristics in High/Scope kindergartens.

In last chapter the findings will be summarized in a conclusion and numbers of consideration are recommended related with designing interior space of kindergartens and future studies.

Chapter 2

IDENTITY IN INTERIOR SPACE

In this chapter first the concept of identity in different field will be discussed and the identity of interior space will be investigated and categorized by referring to the general concept of identity. In last part of this chapter, the elements which are defining the identity in interior space will be introduced.

2.1 Concept of Identity

“Identification turns out to be one of the least well-understood concepts, though preferable to identity itself (Hall & Gay, 1996, p.2)”. Almost every researcher in psychology and sociology agree on the complex meaning of identity. There have been many investigations on the concept of identity, going through the details to define a general meaning for this term. James Fearon(1999) in his research on concept of Identity mentions the fact that dictionaries are not representing the meaning of identity in present time and while people are using identity as a word in appropriate manner in every day talk, they will face problem to lay down a short definition of it. In his research, he presents various definitions of this concept by different professionals in political science and international relations. Some of them are as follow:

According to Hogg and Abrams (1998, p.2) Identity is “people concepts of who they are, of what sort of people they are, and how they relate to others”, Deng (1995, p.1) describes Identity as “the way individuals and groups define themselves and are defined by others on the basis of race, ethnicity, religion, language and culture”,

Kowert and Legro (1996, p.453) see Identities as “perspective representations of political actors themselves and of their relationship to each other” and in another statement by White (1992, p.6) Identity “is any source of action not explicable from biophysical regularities, and to which observers can attribute meaning” (Fearon,1999, p.4).

While experts above define identity in different ways by stating different arguments there is a common point in all of their statements, which clarifies that identity take shape in between individual and society and the concept of individual Identity is meaningless with the absence of society.

Erik Erikson, one of the well known specialists in the field of psychology, and in particular in field of identity (Kincheloe & Horn, 2008), in one of his theories about identity describes that:

Sense of identities means a sense of being at one with oneself as one grow and develops; and it means,atthe same time, a sense of affinity with a community’s sense of being at one with its future as well as its history-or mythology... individuals only feel at home in the world if they develop a strong sense of personal, individual identity which resonates with and finds validity in an accompanying collective identity. Individual identities only can be formed within stable group identities: the term expresses... a mutual relation in that it connotes both a persistent sameness within oneself and a persistent of some kind of essential character with others. (Yamani, 2005, p 24)

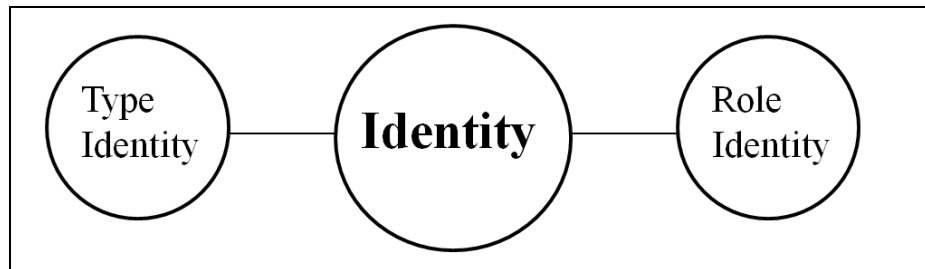
Erikson’s statement (Kincheloe & Horn, 2008) once again mentions the necessity of both individual and social community to define the concept of individual identity. There are doubts if the identity is sameness or differences. Steph Lawler (2008) in

his book “Identity” argues that identity lies somewhere in between sameness and differences. It can be define as same attributes while it describes specific individuality. Lawler also refers to two specialists, Somers and Gibson (1994, p.20) which define individual identity during individual’s life by stating that “stories guide action;... people construct identities (multiple or changing) by locating themselves or being located within repertoire of stories, while in a book called “Identity and Differences”, Woodward (1997) define identity generally as differences rather than similarities.

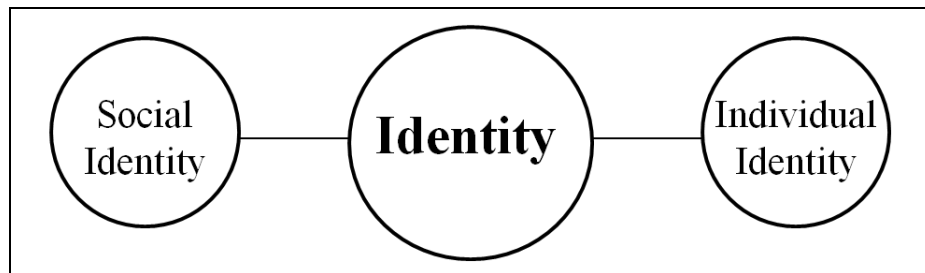
Issues in identities are changing during the time. In 1960’s there were discussions about class identity while now gender and ethnic identity is the main topic (Craib, 1998).

Craib (1998) in his book “Experiencing Identity” argues that one is an “identity with several different identities”. He explains that people have limited identity while they have unlimited identity. A 25 years old girl cannot be 30 years old guy, or a tall black man cannot be a short white man. But in first example the 25 years old girl can be thirty years old woman in 5 years. So some of the identities are changeable while some of them not. This argument once again clarifies the difficulty of defining a specific meaning for identity, especially when it comes to individual identity. From explanations above individuals identity can be same and different, they can change during the time or stay the same, they can be limited or unlimited but they all form human’s characteristic in society.

There are different categories in term of identity. Fearon in his research “ What is Identity”, names two types of categories for identity which has been shown below.



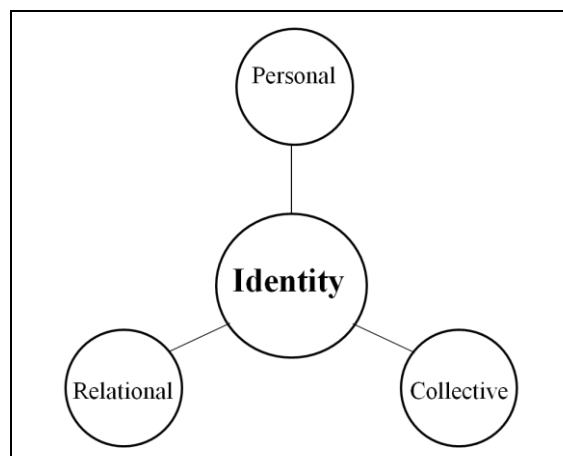
Graph 1. Individual Identity based on Fearon's theory (1999)



Graph 2. Social identity based on Fearon's theory (1999)

The first category includes individual identity. He/she as a mother, father or president and etc (as his/her role) together with his/her knowledge, opinions, experiences and etc (as his/her type) shape his/her individual identity (Fearon, 1999) and number of individual Identities shape the social identity therefore it is better to refer first category as individual identity.

In another book "Organizational Identity" by Brewer and Gardner (2004), identity has been categorized in three main themes which have been shown in below.



Graph 3. Categorizing Identity based on Brewer and Gardner (2004)

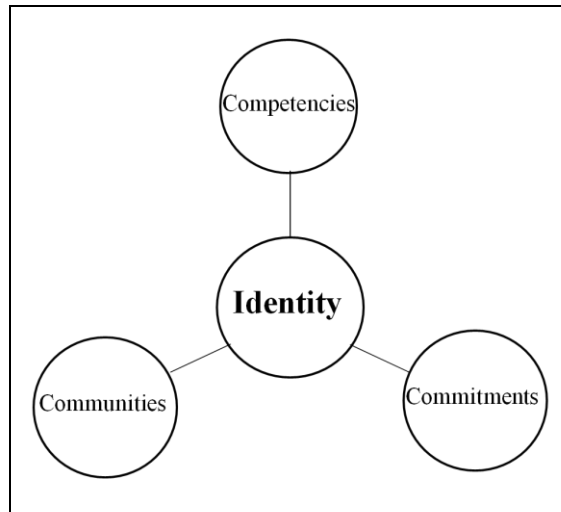
According to Brewer and Gardner (2004):

Defining one's differences from the others shapes personal identity, one's uniformity to specific others define relational identity and one's unity to the major society reflects collective identity. They claimed that the separation and unification creates a stress which exists in all three groups: Similarity versus uniqueness in personal level, intimacy versus separation at the relational level and inclusion versus distinctiveness at collective level (p 14).

Antony (1991) Smith in his book "National Identity" categorized the issues which composed and form the collective individual identity as gender, space or region, socio-economy. Every person ID firstly identified by gender before any other category. People come from different settlements within different localities and again localities go under different region. While nowadays in order to high level of mobilization regionalism is not sustainable but still the original region of any person remains as a part of his or her collective identity. Socio-economy is directly related to the social class. Varied circumstances effect person class in society such as religion, income salary, job and... socio-economy is not sustainable same as regionalism and it is "territorially dispersed like gender". Employers and employees have different class in society while there are different classes between employees according to their level of education and their responsibilities, therefore there are many issues which define class and they can transform during the time period.

Apart from the academic definitions and categorizing of a concept of identity, according to the empirical research done with Jane Kroger and colleagues due to the validity of identity when people were asked to defined the identity, the results can fit in three groups:

“What one does (competencies)”, “where one is from (communities)” “and what who is with (commitments)” (Hoover, 2004, p. 4). [Graph 4]



Graph 4. People’s general categorization of Identity based on Hoover (2004)

The complexity of concept of identity makes it a critical issue of all time. According to Craib (1998) issues in identities are changing during the time. Zygmunt Bauman Parallel to Craib declares that identity is not a modern problem and it was the problem from the time it has been born. He states that “Identity is a critical projection of what is demanded and/or sought upon what is; or more exactly still, incompleteness of the latter (Hall & Gay, 1996, p.6)”.

According to Anthony Appiah (2005) “The contemporary use of identity refers to such features of people as their face, nationality, gender, religion or sexuality”. These factors will be labels for individuals in the society. People in a society not only do self identification but they identify other members of a society and start labeling the people around them. Labeling is one of the products of identity. Labeling is generally negative and one of the reasons in creation of identity crisis (Jenkins, 1996). Sometimes people do not like their labels in society and try to imitate other people and therefore they lost their own way and identity. Craib(1998) explains that

people are trying to find their identity in others. They try to see what are the good examples and chasing those identities to construct their own identity. In this way they spend their life following the identifications which is not possible to achieve and this is one of the crises in today's society.

Identity crisis, a gift from modernity, treats all societies and becomes one of the considering social problems. According to Fearon (1999) being uncertain about our self, in particular our character, goal and region taking place in adolescence which happens due to growing up troubled and fast-changing circumstances, results 'Identity Crisis'.

"Identity gives us the idea of who we are and how we relate to the others and to the world in which we live (Woodward, 1997)". With all the complexity of identity and difficulty for defining its concept, it is an important issue for individual and his/her society. According to Anthony Smith national identity can help people in era of identity crisis to bind ourselves to a common and specific culture and refresh our self identity.

In next section the interior space identity, the main aim of this research will be discuss and analyzed by referring to the previous discussions, while interior spaces are no less inviolable from identity crisis than societies.

2.2 Identity in Interior Space

The development of humanity produces the pursuit for beauty and comfort in environment. The interior started to be transformed from shelters which were only protecting human to multi functional environments. In 12 century architects and craftsmen were in charge of designing the interiors and interior design was not

existed. The field of interior design has been gained respect after World War 1 and generally employed by upper class, but even from that early time interior design earned its meaning from its users (Forest, 2005).

Same as societies, interior environments are no longer secure from identity crisis. Considering only the budget, space planning and time schedule in designing the interior space destroys the interior identity and results a meaningless environment which bore the users immediately (Augustin, 2009). The other critical issue affecting interior space identity is multiculturalism. Multiculturalism in today's society is a product of modern life with its fast mobilization and increase in immigration. This affects the social identity in a community which results the identity crisis (Gupta & Ferguson, 1992). The multiculturalism do not only affect the societies, but also the interior environments as well.

The growth of population causes urban planning. Urban planning affects the physical structure of the city and therefore creates changes in its structure. The necessary time for urban change is a way less than the time for social change. According to the many authors, in past, user's involvement in constructing their surrounding physical structure was leading the community to a strong identity (Pol, 2002). Today's involvement of architects and interior designers together with the enormous immigrants with different cultures mix up the old routine and mislead the urban identity.

Not all the designers are familiar with the identity of the context and not all the designers agree to move according to the context. Although interiors are enclosed spaces but they are still the extension of the exterior context and they should have an

identity in order to be sustainable. There are of course differences between the city scale identity and interior scale identity, but both identifications obey from number of rules.

The first impression of interior space is the visual impression. Visual identity is the first stage of defining the identity in interior space. Understanding the visual art is possible for any person. It does not need to know the artist's language or character. The image tells the story (Laer & Pentak, 2005).

In the image below, artists reflect their opposition with torture in this poster. Even though there is no verbal explanation and no color or extra visual support the figure tells the whole story.

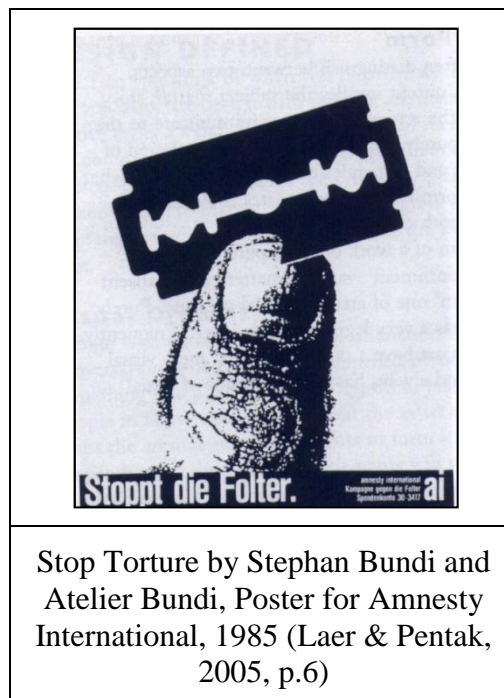


Figure 1. Artist transfer his verbal message with visual graphics

Image plays an important role in visual identity which is distinct (Westcott Alessandri, 2006). Creating the appropriate image is a critical duty of visual designers. The image can reflect the wrong message to observers or create a conflict.

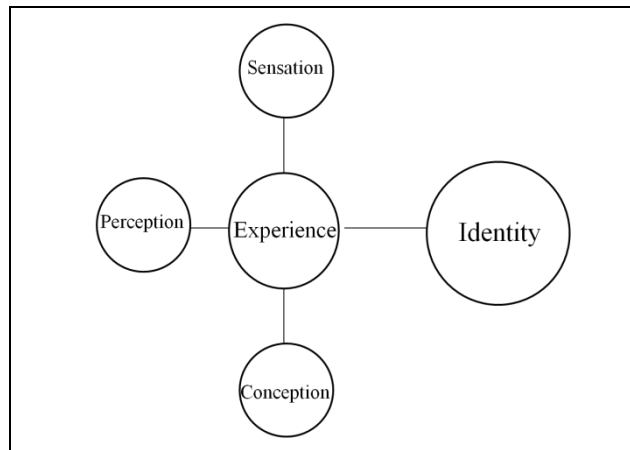
Alessandri (2006) in his book “Visual Identity” define visual identity elements in marketing and advertising as follow:

First element is “Name”. Choosing the appropriate Name is the first step in introducing the organization or product. Second is “Promoting Strategy”. Aaker and Joechimsthler (2000) define promotion strategy as “the “organization structure of the brand portfolio that specifies the brand roles and the relationships among brand and different product-market brand context”. Third is “Tagline” which means the slogan or logo. Fourth is “Color Palette”. The right choice in choosing a color for the slogan or logo can be as dominant as the logo itself in defining the visual identity. The last element is the “Architecture and Interior Design”. Different organization and firms have different looks. A law firm should not look like an advertising agencies or a bank. The same brand can follow the same interior design elements in its different branches all around the world, so the interior environment will also define the visual identity along with the other elements. (p. 12)

According to the above description, while interior space identity is developed by visual identity, it also supports visual identity parallel to this explanation Gibbs (2005) states that aunique interior space is able to act as an advertisement and promote the function or the users of that space.

The identity of the interior space is the nonverbal communication between users and the interior environment. Interior space communicates with the users with its elements. Sink in the kitchen talks about the washing action and curtains speak about the amount of light and level of visibility (Augustin, 2009).

Tuan (2003) in the book “Space and Place” describes three factors which form the experience and through the experience human starts to define an identity about his/her environment. The verbal explanations are transferred to the graph below.



Graph 5. Factors affecting individual in defining Identity in interior space based on Tuan's description (2003)

Perception and sensation are related together and each will be nonsense with the absence of the other. In fact it is with assistance of perception and sensation that conception will be recognized in interior and the whole process will be an experience within that environment which will define an identity. Gaines (2006) argues in his article that Perception is a process and during this process individual perceives his/her surrounding with his/her senses and then start recognizing and relating the perceived objects and phenomenon in his/her surrounding and finally defines a meaning of that environment in his/her conscious mind. Though human perception of an interior space starts visually but then continues physically and maybe later socially and all these experiments shape the interior space identity.

People have different perception of their world but there are primal rules to explain their experience of their physical space (Augustin, 2009). Hodder defines the meaning of the interior space in Mousterian period with both social and physical space. He states that “physical space has been given meaning as social space, and social space is given localized expression by physical space (Hodder, 1991, p.51)”. The importance of physical and social aspect of the space for defining identity does

not only belong to Mousterian period but to the whole history from very past to contemporary time.

Shirely Andener states that “social life is given shape and when dimension or locations introduced we assert a correspondence between the so called real physical and its social reality. There is of course an interaction such that appreciation of the physical world is in turn dependent on social perception of it (Taylor & Preston, 2006, p.16)”. According to this statement the relationship between social and physical world in defining the meaning of the space cannot be rejected. Parallel to Andener’s statement Macgregor Wise argues that social and physical interrelations create identity in space (Taylor & Preston, 2006).

People communicate with words and specific codes related to their societies while space is speechless. According to Edwin Ardner “in the absence of speech, upon the apperception by the human participants of contextually define logical relation among themselves in space (Taylor & Preston, 2006, p.16)”.

Consistent with discussions above interior space identity is visual experience in the first look but it does not remain as a short visual image only and it develops by transferring to physical experiences and then it creates social experiences. Defining this visual identity and leading the physical and social experiments to express the interior space identity is in the hand of designer or designers.

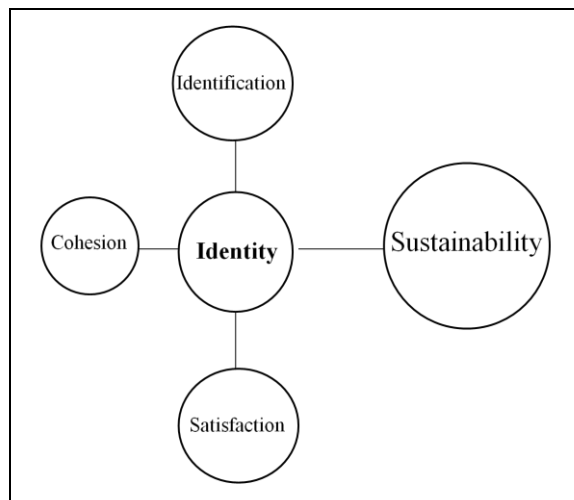
Designs never happens by a chance. There is always a reason behind designing something. “Artist or designers plan the arrangement of elements to form a visual pattern (Laer & Pentak, 2005, p.6). As Gibbs (2005, p.38) puts it “one of the key

functions of the designer is to interpret the ideas and identity of the client in order to provide an appropriate environment in which to live or to work”. Understanding the users’ requirement will help designer to create an environment which satisfy users and encourage them to spend their time in that place.

Interior space directly affects the behavior of its users. Considering different range of people in different period shows how their life pattern was related to the interior space they were living in (Pile, 2005). Arranging sitting elements too close to each other will cause people to sit so close to each other and increase the sense of stress, designing the corridors with niches allow people meet surprisingly and in this way encourage their communication if this action is desirable for such a place and changing the color of the walls, increase the room visibility with changing the window glasses, changing the form of the space and... can increase the students concentration or invite more customers to have food and desert in a restaurant and many other positive effects (Augustin, 2009).

As stokols and shumaker (1981) stressed “living space is always a sociophysical environment made up by both material and symbolic features (Pole, 2002, p.15)”. Choice of the symbols and materials which has been used in interior is the representation of the identity and designing and arranging these elements define the identity of that space. Designers who manage to choose and design the elements in interior space in appropriate manner, due to the specific use of that space and its users, will be able to increase the sustainability of that space. In fact identification will result sustainability which is another concern of our time (Pole, 2003).

Pole (2002) in his book “Environment and Behavior” describes how identification together with cohesion and satisfaction result an identity and at the end builds sustainability in cities [Graph 6]. Interior space design sustainability has the same structure. Identification of the interior space characteristics and developing them in the correct way in the overall space will result users’ satisfaction and define an identity for that space which can remain and be sustainable.



Graph 6. Structure of sustainability in cities according to concept of identity based on Pole’s description (2002)

Going through the historical architectural design and interiors, the ones which awake specific sensation in humanity remain as the famous examples. Interior spaces which have unique symbols, styles and meaning or in other words an identity always attract people to study them and investigate their stories (Bandmann, 2005). Another factor which draws attention in above explanation is the role of exceptionality of the design or in other words the unique identity of the interior space in sustainability of design. Creativity is the primary principle to be a designer (Forest, 2005). Art does not follow any rules. There is not such a thing as strict rule for an artist, when it comes to solving a visual problem, instead of distinct rules there are guidelines which lead the artist but still do not force him (Laer & Pentak, 2005), therefore designers can follow

certain tips and recommendations, but being creative in adopting these tips and rearranging them is their job.

The main two elements for any designer are “content” and “form”. Content is the word of designer and form is the tool for him to say his word (Laer & Pentak, 2005). To design the form there are certain circumstances which influence his job during the design process. There is difference between a good design and successful design. Successful design needs patterns according to the users and their needs so they feel successful in the environment. Considering the physical and psychological aspects of the users in environment in designing process, will affect their performance in a positive way. To find out the tools which assists designer to express his word and define a unique identity in interior space, which is the intention of this research, it is better to refer to Anthony Appiah’ structure of social identity in his book “The ethics of identity”. Appiah (2005) defines the structure of social identity as follow:

“First; Labels (nationality, gender...), second, Internalization of those labels as parts of the individual identities of at least some of those who bear the labels and third, Existence of patterns of behavior towards labels (p.67-68)”.

Now by comparing an interior space with an individual and try to define the structure above:

First: Labels (space characteristics such as color, furniture, fixture, lighting and style/culture).

Second: Internalization (designing the elements which define the space, which will be done by designer/designers in construction process).

Third: Existence of pattern in interior space is related to the users. (users' characteristics, requirements and perception). Both structures are reflected to the table below.

In fact in interior space identity the third stage of this structure is the stage which will clarify the success or failure of the design.

Amedee compares architect with a poet in “form”, “color” and “light” and he also adds “architecture is light because it is through light that we can see it and light is color” (Taylor & Preston, 2006, p. 238) so the interior.

Light: Light enable users to perceive the interior space. With no light there won't be any identity. “Inside space is dependent on light (Taylor & Preston, 2006, p. 180). People may have different perception of the same space by changing the lighting in that space. There won't be any visual experience in the absence of light. Lighting in interior space does not only make the design visible, it can also emphasize some characteristics and support designers' message (Abercrombie, 1999).

Color: “Like all other elements of interior design, color communicates, carrying messages about design intent from the designer to the users (Abercrombie, 1999, p.113)”. Although color is not an independent characteristic and it should be attached to something to define itself and that can be anything, a wall , a dress, a flower or a piece of furniture (Taylor & Preston, 2006), but still it is the characteristic of the space. Color has influence on proportion of the space. It has the ability to emphasize the objects; it can be the background color of the object or the color of the object itself (Miller, 1997).

Form: According to Mark Kingwell “furniture structures space, making what is otherwise undifferentiated into something meaningful (Taylor & Preston, 2006, p.177)”. Movable furniture or built in furniture, either defining a space or used as a decoration, they all have forms and meanings. Most of us are interested into rearranging the furniture because due for looking for new places for our furniture to create new look and atmosphere, so to create a new mood and a new environment there is no need to change the whole furniture, only by rearrange the old ones the characteristic of the same space will change. As Shirely Andener discusses, arranging the tables, form of the tables and number of tables can all change users’ mobility and action in the same environment, and as a result the change identity of that space (Taylor & Preston, 2006).

Style/Culture: Culture which sometimes represents itself as a style is another characteristic of the space. Most of the time the users of the space (here users include long term users) will be pleased in the environment which represents their image or their identity and people do not feel comfortable in an environment which do not speak something about them or its message is not accepted with them (Augustin, 2009). According to this definition, regardless of the function of the space, the users’ social level, beliefs and culture should be taking into consideration of the designer and then reflected to the interior space to complete the identification of the space together with the other characteristics.

Interior spaces with same function are represented in a different way in various countries and the reason generally is culture difference. A school arrangement in a country which boys and girls are allowed to go to the same school is different than the country which boys and girls are not allowed to attend the same school or the

interior space of the mosque has different characteristic from a church while both represent the religious environment.

An interior representing a specific style will influence the types of furniture and the arrangement of furniture even the lighting and the colors, and in result it affects the characteristic and identity of that space. The interior of a house design in medieval style has different characteristic than an interior space of the house in 17th century (Abercrombie, 1999). Since the culture/style differs from region to region it won't be discussed in this research, but designers should not eliminate this issue in their designing process to support users' comfort.

There is no doubt that defining elements have role in identifying the space as well as space characteristics. When space is defined and its boundaries is outlined it hold its own act on its users (Taylor & Preston, 2006), but most of the time interior designers are suppose to transfer the existing interiors to other purposes and they only tool they can assist are the space characteristics.

Space itself does not express anything until it becomes the background of something else. Without objects users cannot even discover the properties of space (Gaines, 2006), therefore the representation characteristics of the space have dominant role in identification of the space. In next two sections interior space defining elements will be discussed briefly and afterward interior space characteristic will be study in detail.

2.2.1 Architectural Elements

According to Kubba (2003, p.130) "Space is the distance, interval or area between, around or within things is either two or three dimensional". He divides spaces into three categories. First flat spaces, which are two dimensional with only width and

length, second are perceptual spaces which can be both two and three dimensional, Such as a photograph or a room. Third are the actual spaces which are the outcome of the designer job.

“Space is the background to a prior perception of the world (Gain, 2006, p.174)”. Although the space is seen as a background, it has a strong affect on defining what is seen and how is seen by users, therefore ignoring the importance of the definition of this background is impossible for designers.

When people enter the interior of the building they feel safe and secure. This feeling comes from the closure defined by a ceiling, walls and floor. These elements define the physical setting of the interior space and separate it from the exterior environment. The shape of these elements together with the openings affects the definition of interior space as well (Ching & Binggeli, 2007).

An architectural space is the result of existence of an architectural form. Frank Ching (1996) in his book “Architecture” analysis and explains the process of creating an architectural space from the very primary elements of form which is “point”. According to his description the extension of the point defines a line, the extension of lines defines a plane and the extension of plane creates volume which is three dimensional. Each of these elements describes different character in space. For instance one point describes the position in space while two points describes a line connecting them.

Architects by using the horizontal and vertical architectural elements can create a dense or empty or unitary space which each have different characteristic and are suitable for specific needs (Von Miess, 1990).

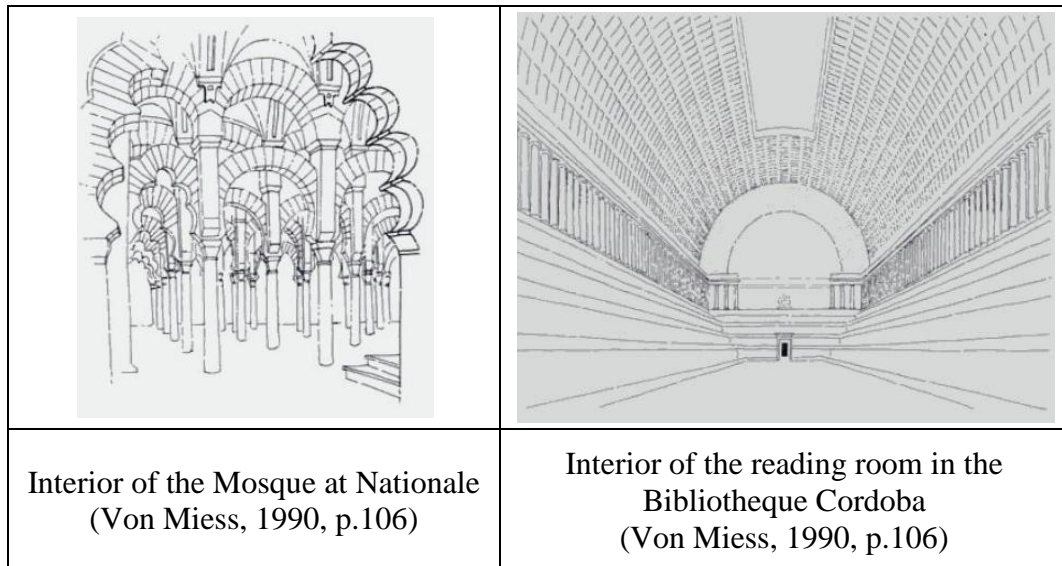


Figure 2. Creating dense and empty space by using vertical and horizontal elements

Figure 2 shows how the different arrangement and design of the horizontal and vertical elements create different characteristic in each space. In the right figure the crowded number of columns (vertical elements) together with the arcades (horizontal elements) in between the columns create a dense space, while in figure on the left, the row of columns parallel with the row of columns at the other side of the space with the long arcade roof create an empty and quiet interior suitable for concentration and reading.

Each element which defines the interior space plays a specific role on identifying the character of interior space. In figure 3 it has been shown how adding, subtracting and transforming the elements in the corner of the room change the characteristic of space in user's perception. The straight edge of corner emphasizes the closure. Adding an element which is separate than the planes for the edge of the corner will

be a positive feature in closure visually. Adding an opening right after the corner will weaken the closure if neither planes defining corner be extended to touch each other. The opening will allow the interior space to interact with outdoor. Rounding the corners will emphasize the continuing in surfaces in closure and also the volume of it and its softness (Ching, 1996).

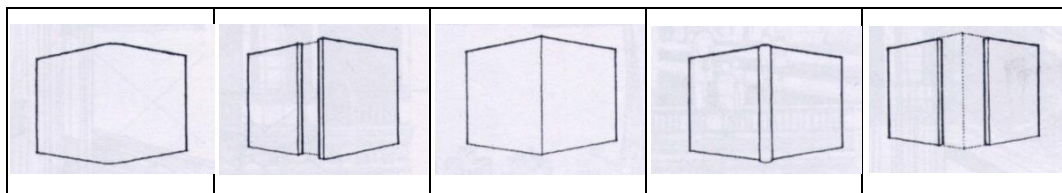


Figure 3. Creating different visions by designing the corner of the room

(Ching, 1996, p.81)

German philosopher E.W.J. Schelling was the first person who develops the discussion about the space in 19th century. Schelling (1981) insists on the importance of the space in architecture in his work “Barock and Rokoko”: “man imagines in the first place the space which surrounds him and not the physical objects which are supports of symbolic significance. Architecture is art when the design of space clearly takes precedence over the design of the objects. Spatial intention is the living soul of architecture creation (Von Miess, 1990, p. 101)”. According to his definition of the relationship between architecture and the space within its form, the spatial relationship and spatial organization are defining the space in cooperation with the defining elements of architecture. Structure shapes the interior space first, then vertical and horizontal elements such as ceiling, walls and floor define the interior space and then openings connect the interior environment to exterior environment (Ching, 2005).

Square interior spaces are central while rectangular interiors are flexible, but if the length of the space be more than double of its width it loses its flexibility and starts to control the environment. These spaces generally are proffered to connect spaces [figure 3]. Circular spaces are central same as square spaces but they have more interaction with their surrounding environments. High ceiling give us the feeling of immensity and enormity while low ceilings creates friendly and warm environment (Ching, 2005). In consistent with these explanations the design and placement of elements defining the interior space affect the activity and feelings of the users. The rectangular spaces give them the opportunity for variety of furniture arrangement while by increasing the length of the same space instead of this opportunity the space will lead them to move forward and backward. By increasing the height of the vertical element they feel respect for that environment while decreasing the height of the same elements increase their communication and create a friendly environment.

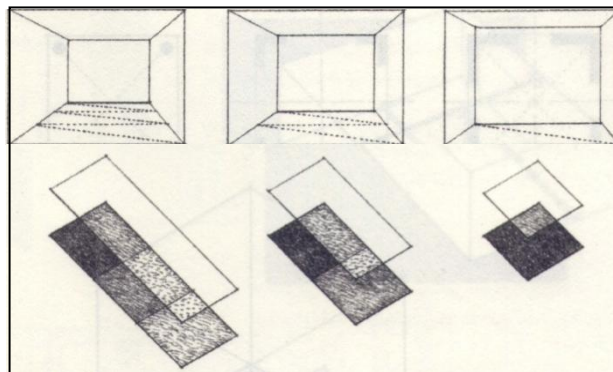


Figure 4. Transformation of the square space by Ching (Ching, 2005)

Martin Heidegger sees wall as the primary characteristics of the space (Gaines, 2006). Walls defining the boundary of interior space, they define the limits for interior designers; they define the reign of domain for the habitants. Ceiling is an important role defining interior space, as it changes the exterior to interior (Gaines, 2006, p. 43). It defines the meaning of inside and outside.

In the book “Architectural Theory Volume Two”, in the chapter with the heading “Form and Formalism” the author defined the form of architecture according to formalism movement into three sections which are “elements, structure and aesthetics”, the form needs element to be real and the structure goes below the function of that form and aesthetics goes below the meaning of the form. This theory has been transformed to the figure below (Capon, 1999, p.49).

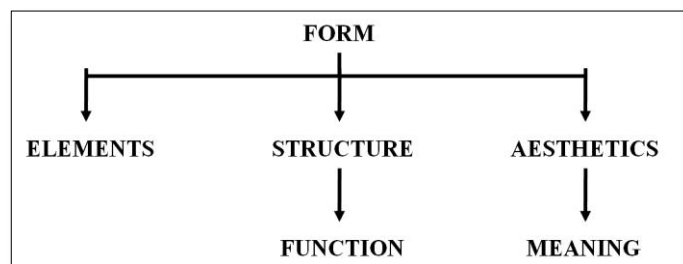


Figure 5. Categorizing the form of architecture by Capon (1999, p.40)

In other part of this chapter author introduce a new category for the elements of form [figure 6].

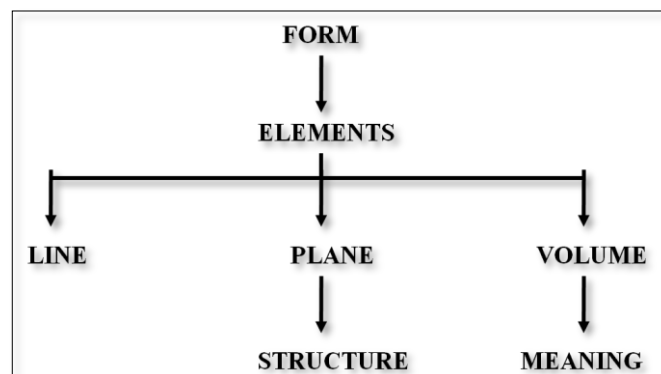


Figure 6. Category for forms by Capon (1999, p.40)

Line defines the plane and plane defines the volume and volume occupies the space. The space occupies the objects and people and they all shape the environment around us. The structure is in control of the function. The school needs different structure

than the house and the house different than the airport. Within the space the aesthetic completes the meaning of that space. The color of the ground, the texture of the walls or the lighting of the room they all present specific meaning in our mind.

According to Houser there are three categories describing the meaning of space: “First, space is independently of anything else. Second it is relative to something else and third, it is as mediate between to others (p. 174-17)”. Gains (2006) carries over Houser’s definition of space into evaluating of space and describes:

When we speak about the specific qualities of space, we are considering its firstness. However, if we consider the quality of space in a room, for example, we are already conceptualizing our enquiry in terms ‘relative to something else’. Firstness has been lost to secondness because the meaning of the space in a room is necessarily dependent upon the relevance of other objects within that space. Finally, the *thirdness* of space is mediated by a third party such as a person in a particular space; meanings are interpreted from a specific point of view, indicating the practical consequences of the qualities and relationships within a spatial sign system such as a room (p. 174).

However, in this study the focus is the thirdness and secondness of space, the person, the interior space’s design characteristics, next sections will give a brief introduction about the elements which defines the interior space and spatial relationship and organization while they have an undeniable affect in identifying the interior environment.

2.2.1 Architectural Elements Defining Interior space

In previous section it has been discussed the role of horizontal and vertical elements in defining the interior space. There also has been explained that parallel to horizontal and vertical elements the spatial relationship and organization has an effect on the identifying the interior space environment. In this section the elements defining the interior space will be introduce briefly.

1. Vertical and horizontal elements

Line is an important element in space in defining its characteristics. Horizontal lines increase the length of the space while vertical lines increase the height of the space. “Straight lines give an impression of strength, firmness and simplicity”. Lines also define the closure and present the outline and contour, they reflect the direction and define the patterns and textures as well (Kubba, 2003).

Through the history of architecture there has been styles and movements, which one of their main characteristic was the lines. The earlier views see curve lines as the best choice while straight lines was very famous in twentieth century’s architecture and become the characteristic of modern architecture. LeCorbusier were interested in both straight and curve lines in his buildings. His buildings have straight contour in exterior and curve lines in interior. The German expressionists proffered diagonal lines. In 1990’s the curve profiles on the roof become trendy again (Capon, 1999). So it is clear how the lines of the building profiles have an important role on defining their character and identity as a style or a design of pioneer architect.

After the lines comes the plane which identify the main defining elements of interior space, horizontal and vertical plane. According to Ching (1996, p.99) Horizontal elements defining space can be categorized in four main groups: “base plane, elevated plane, depressed plane and overhead plane” [figure 7].

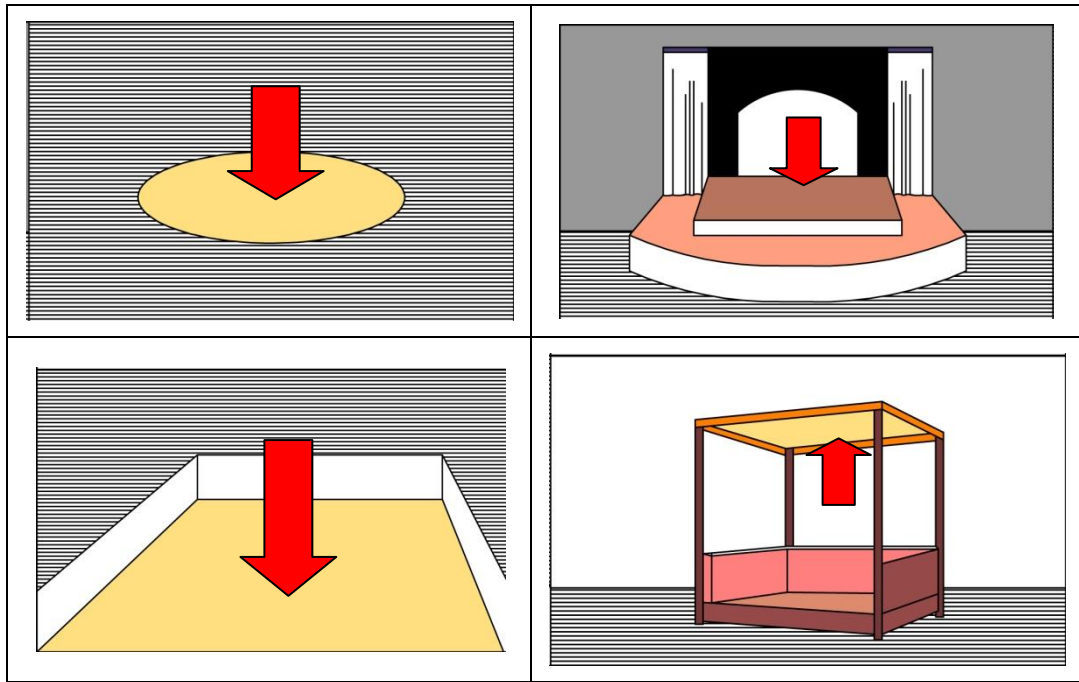


Figure 7. From top right to left “base plane, elevated plane, depressed plane and overhead plane”, Horizontal elements defining space based on Ching (1996, p.99)

Ching (1996, p.121) also categorize Vertical elements defining space in six groups: “vertical linear elements, single vertical planes, shaped plane, parallel plane, U shaped plane and closure”. [Figure8]

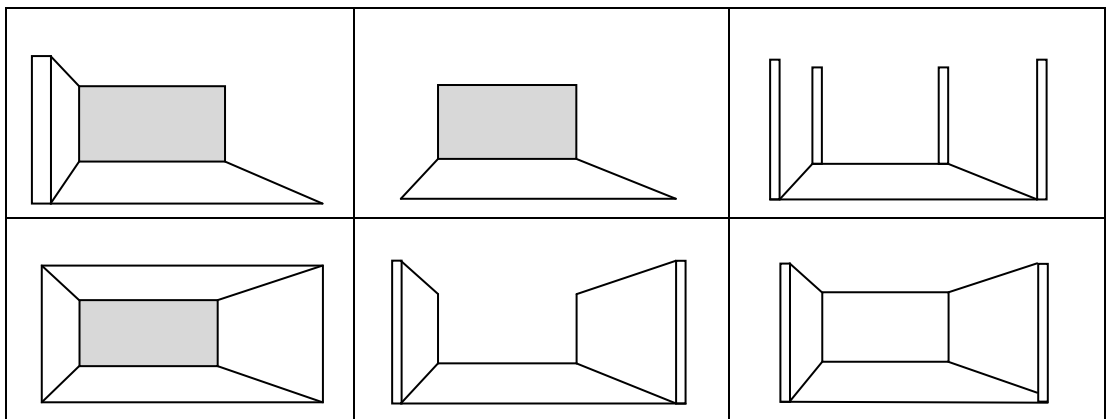


Figure 8. From top right to left “vertical linear elements, single vertical planes, L shaped plane, parallel plane, U shaped plane and closure”, vertical elements defining space by Ching (1996, P. 121)

Each vertical element describes a different characteristic of space. The height of vertical plane defines the visual access for the users in that space. Planes can either

be a primary defining element of space or they can be freestanding elements dividing space (Ching, 1996). A wooden partition in the bedroom can block the visual access from the entrance of the bedroom to the bed or it can be a divider separating the changing area from the sleeping area and increase the level of privacy.

According to Von Miess (1990) the relationship between boundaries, objects and planes define the architectural space. In the figure below the transformation of the implicit space to explicit space has been shown.

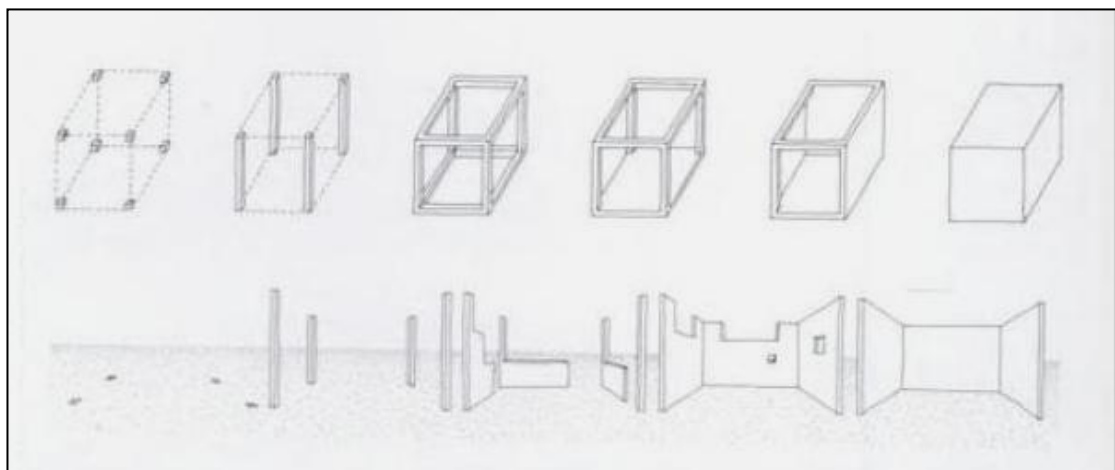


Figure 9. The transformation of the implicit space to explicit space by Von Miess (1990, p.102)

In figure 9, different vertical elements, four columns or U shaped wall or a cell all create different spatial organization which will affect users' movement and sense of place and as a result define different character within each space.

As LeCorbusier states “the task of the architect is to vitalize the surface which enclose masses... the surface is in most cases a wall with holes for doors and windows; these holes are often destruction of form; they must be made an accentuation of form (Capon, 1990, p. 50)”. He sees the role of the surfaces, or in

other words plane, in defining the architectural forms as important as that openings can destroy it and in fact he believes that the openings should be within the walls not the walls in between the openings.

“In the form composition of architecture, space comes to being formed based on and limited with the psychological and physiological factors of the horizontal and vertical elements (günçe, 2007, p.53)”. Consistent with this definition, however horizontal and vertical elements are generally related with the structure they play an important role in identifying interior space which is the result of architectural form.

The arrangement of the vertical and horizontal elements first is reflected to the two dimensional drawings, the plan and the sections. Certain issues influence the planning of the building. First is limitation. This limitation may be in the time or fund. Another factor which affects planning is the function. While a plan designed for specific function, it may be changed when the function is changed. In this situation designers do not always have the chance to change the interior structure according to their desire and the reasons are factors such as fund and structural system. The image below presents two plans of same apartment before and after remodeling (Abercrombie, 1990).



Figure 10. Before and after an apartment in New York by Firm Lembo-Bohn
(Abercrombie, 1990, p. 12)

Interior Designers do not always have the opportunity to do this level of change [figure 10] in interiors due to mentioned limitations.

Although the arrangement of the vertical and horizontal elements takes place on two dimensional drawing, in consistent with the important effect of these elements on defining the character of the space for users, visualizing the three dimensional image of these elements should note as a necessary attempt in designing process.

2.Opening in Space

The importance of windows in spaces is not only to use natural lighting and ventilation, but also to remember the world outside of the architectural space and to be in contact with it (Lawson, 2001). According to Von Miess doors and windows are “the place for passing through, a picture frame of exterior view and a source for light and air (p. 109)”.They can be an access to exterior world, they can lead users to other spaces or they can increase users’ communication by connecting to space not physically but visually.

Spatial or visual organization is impossible without defining an opening in space. Openings can be either within the plane [figure 11], at the corners [figure 12] or between the planes [figure 13].In images below different type’s openings has been shown by ching (Ching, 1996, p.159).

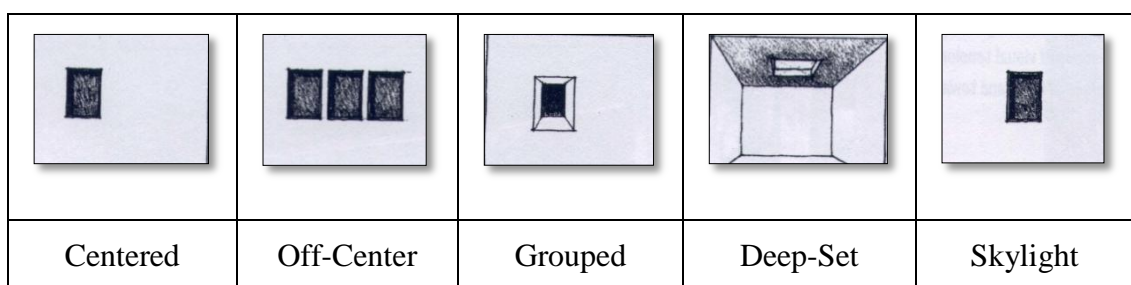


Figure 11.Placement of openings within the plane (Ching, 1996, p.159)


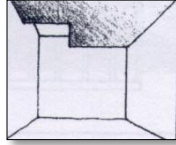



				
Along 1 edge	Along 2 edges	Turning the corner	Grouped	Skylight

Figure 12. Openings at the corner of the plane (Ching, 1996, p.159)

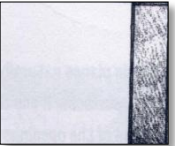
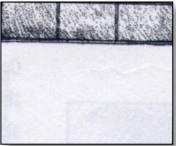
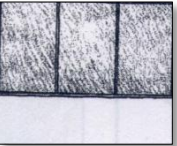
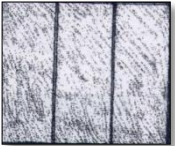
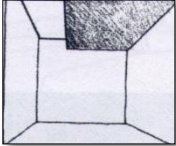
				
Vertical	Horizontal	$\frac{3}{4}$ Opening	Window-Wall	Skylight

Figure 13. Openings between the planes (Ching, 1996, p.159)

As the size of openings increases the absence of the wall becomes obvious. This absence becomes even more obvious when the openings are placed in the corners. The architect tries to shape the interior and exterior relationship by encouraging the transition between “inside and outside, nature and men, private and public, element and context (Von Miess, 1990, p. 109)” and to be able to reach his aim; the design and placement of the openings will assist him.

The size of opening is effective as well. As the size increases the opening becomes freestanding element itself (Ching, 1996). The size of the windows in an interior space defines the level of communication between interior and exterior or between adjacent spaces and also the level of privacy as well. The size of the door is generally related to the function of that space. The door of the main entrance of the house usually is larger than the door of the bedrooms. The door of the entrance of the yard is generally bigger than the entrance of the house. The entrance door of the school can be even bigger than the houses yard’s door.

Not only is the size of the windows and doors but also their placement is important in defining the character of the space. The location of the openings describes a different characteristic within that space. Generally the openings which are placed wholly within a wall are describing a contrast between the bright figure of opening and the background. Multiple openings on the wall describe the movement (ching, 1999). According to the explanations above openings have an important role in defining the character of the interior space and they should not only be seen as a hole to bring the light inside.

3. Spatial Relationship

Spatial interpenetration is the gift of modern structure by replacement of load bearing structure with steel structure. Spatial interpenetration “creates continuity from one space to the other from the moment when an important element of definition, a wall, ceiling, and floor appears to be long to two or more spaces (Von Miess, 1990, p. 110)”.

Ching (1996, p.179) defines the spatial relationship in four categories “creating a space within a space, interlocking spaces, adjacent spaces and space linked by a common space” [figure 14].

Space within a space can define number of spaces in one architectural space. If the form of the defined space is in contrast with the primary space and the new space has a different function the contrast can emphasize this differentiation.

An interlocking space defines a third space which can be created by two overlapped spaces. The shared space can be used by both interlocking spaces, it can be used by one of them or it can be a freestanding space links two other spaces.

Adjacent spaces create a clear definition of two neighbor spaces. The separating plane may divide the space totally and limit the visual and physical access, it can act as a freestanding element, and it can be a row of number of linear elements which increases the level of visual and spatial continuity. Change in level of base plane results adjacency as well.

In spaces linked by a common space the intermediate space can be in a same size with two other spaces, it can be in a linear form and link the series of spaces to one another, or it can be bigger than linking spaces and act as a dominant space, and at the end it can be defined only by a orientation of two spaces being linked.

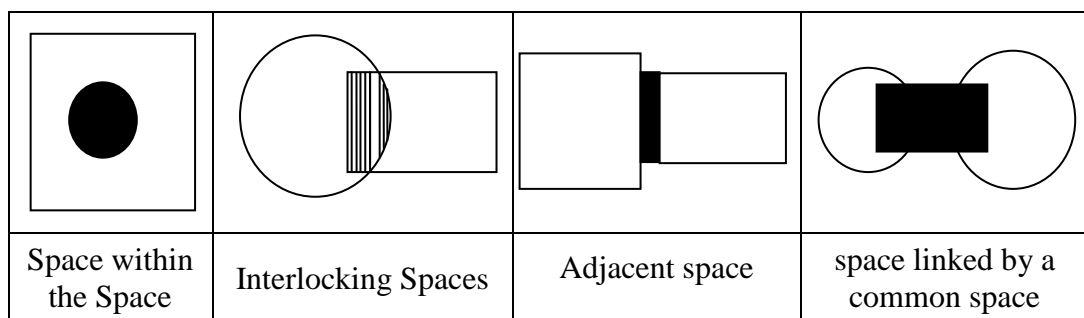


Figure 14. Configuration of spaces developed based on Ching (1996)

The spatial relationship in space is mainly defined by openings (Von Miess, 1990). As it was explained in previous sections the openings define the level of interaction of users with other spaces. Spatial relationship determines the level of privacy in space. In fact private spaces are defined by the level of spatial relationship (Hertsberg, 2001). Doors create physical accessibility and separate spaces when they are closed and provide visual and acoustic interaction when they are open. Big door frames increase this interaction and decrease the privacy. Windows define the relationship between indoor and outdoor. The larger the window will be the higher the level of this relationship (Ching & Binggeli, 2007).

The moment the vertical and horizontal elements define the interior space and the location of the openings is defined there will be a spatial relationship in that space but it is the task of the architects and interior designers to arrange these elements in a way to provide positive spatial relation which satisfy the users.

4. Spatial Organization

Types of plan can define user's movement. It can move them from a start point to a goal like the example in Alvar Alto's baker house dormitory in Massachusetts [Figure 15]; it can move the users from a center to different directions like a plan in Vingola's villa Franese in Caprarola [figure 16], or a plan can let users to choose their way of movement and feel free which is called free movement like Mies Vanderohe's Crown Hall in Chicago [figure 17].All these planning identify the interior space in a different ways for users. Their perception and movement will be influenced by the planning (Abercrombie, 1990); therefore their experience in a space will vary even though they are not aware of it.

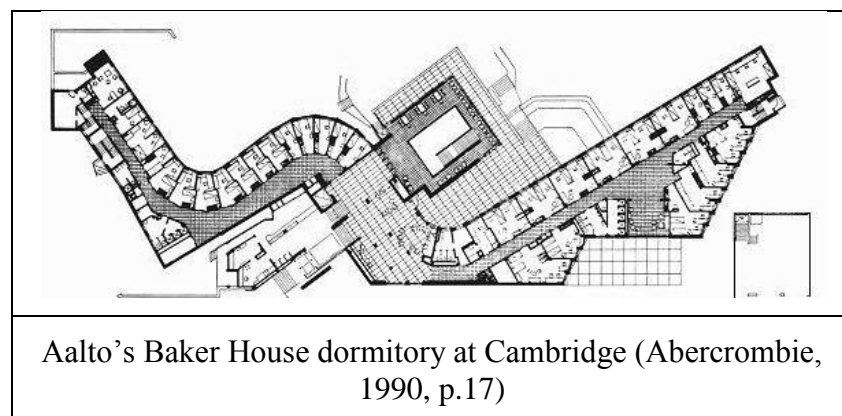


Figure 15. Architectural planning leads users' movement from starting point to the end point

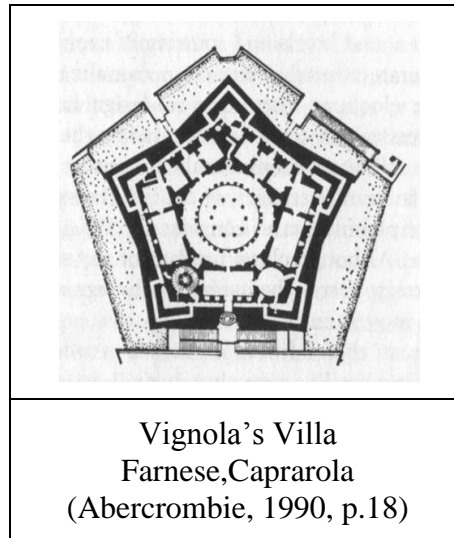


Figure 16. Architectural planning leads users' movement from center to different directions

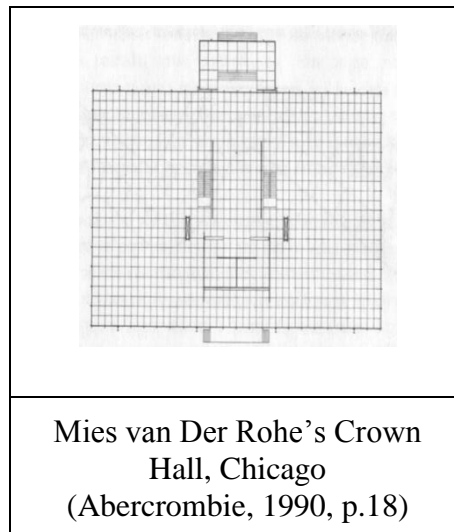


Figure 17. Architectural planning defines free movement for users

According to Ching (1996) there can be five types of organization in an architectural space: “Centralized organization, linear organization, radial organization, clustered organization and grid organization (p.189)”. In central organization the unifying space generally is regular and large enough for a number of secondary spaces and the result may create a symmetry geometrically regular organization or irregular and asymmetry organization. Linear organization is a flexible organization and it can be defined by relation of the forms in context or it can be a wall or barrier separating

space into different fields along its length. Radial organization is the combination of centralized and linear organization. The central spaces generally are similar in functions and visual shape and orientation, but it can also contain spaces with different size, form and function. Symmetry and axial cluster organization may emphasize the group of space within an organization. A grid organization can alter the visual and spatial continuity by its portion and position.

Each of the spatial organization above is in control of the defining elements of the interior space. Vertical and horizontal elements, openings and spatial relationship in between the spaces all define the organizational relationship. In each different organization, there will be different space characteristic, which lead users to different experiences.

Even the same organizational relationship can have different characteristic. The open plans of pioneers of modernism vary in their identity. Open plan of Wright differs from Mies Van de Rohe's plan and Locurbusier's plan differs from these two, so same organizations may differ by different designs (Abercrombie, 1990).

Different spaces in one interior space generally have different organization as well. For instance in a house, corridors generally have linear organization, kitchen are central while bedroom mainly are in radial organization from the sitting area or main hall. The choice of the organization is in hand of designer and it should be related to the function of the space and user's profile.

Since generally the interior space has been define by the previous architect or firms and interior designers are expected to transform the existing buildings to new

functions and new concepts with limited budget and timing, this study is focused on identifying the interior space's elements rather than architectural elements. In forthcoming sections each of interior space elements will be discussed in detail.

2.2.2 Interior Space Elements

Giedion categorize interior space history in three periods: first is the beginning of human's high civilization which he calls it "architecture as a space radiating volume", second is during roman and medieval till Baroque which he names it "architecture as interior space", and third is "architecture as both volume and interior" developed in conceptual design of 20th century (Abercrombie, 1990, p.25)". In order to have a best design approach, the third part of interior space history is the best choice for designers as the architecture and interior designer will move parallel and reinforce each other.

In previous section it was discussed that interior designers generally are in charge of designing the existing building and there will be many times which they are not involved in the architectural process. There can be different circumstances affecting this situation. Sometimes they are expected to only redesign the interior and the function is not changing. In this case the users may be changed and they desire to do changes in their environment and sometimes the users are the same but they need change in their environment. In second case designers can involve users and get benefit from the previous design problems and they can improve the issues which were bothering them visually and technically and the outcome can be very successful, while in first case achieving the desirable interior is more critical. In both cases the function is not changing which easy the job, but there are cases which the function will be changed entirely and in this situation the design becomes even more critical.

Since designers are generally in an attempt to create a best environment within the existing structure either the function is changing or not, in this research the elements which will affect the identity of the interior space and can vary according to different designers, users and function has been categorized by referring to Miller and Schiltt definition of elements which have symbolic meaning in interior space. According to Miller and Schiltt (1985) “forms, shapes, styles, materials, lighting, color and spatial configuration” all have symbolic meaning (p. 123).

Forms and shapes are interrelated elements and as earlier it has been discussed in the process of defining form by Ching (1996), the plane has a shape which will also define the shape of the form in three dimensional therefore they can fit both in same category. Materials have different texture and in fact it is their texture which defines their visual identity, therefore it is enhanced to place material in the category of texture. Spatial configuration has been discussed briefly in previous section and it has been explained that it will be defined by arrangement of vertical and horizontal elements and openings (Ching, 1996). Interior furnishing will also affect the spatial organization and new arrangement of forms such as furniture and fixture can define different spatial configuration in an existing structure therefore spatial configuration is in fact result of the form arrangement. As Hertzberg (2001, p.22) puts it “The character of each area will depend to a large extent on who determines the furnishing and arrangement of the space, who is in charge, who takes care of it and who is or feels responsible for it”. Consistent with Hertzberg statement arranging the form within the interior space will define the character of that space.

According to the discussions above elements which define the characteristic of an interior space can be divided into 5 (Fasli, 2010) categories:

1. Form
2. Lighting
3. Color
4. Texture
5. Style

The style will not be discussed in this research since it is a variable characteristic and it is related to the culture and the wish of the designers and clients.

2.2.2.1 Form

Separating the form from space is not possible because they are both depended on each other. Forms either three or two dimensional, curve or irregular, are the positive part of the space (Kubba, 2003, p.33). Forms can be only decorative and improving the visual quality in interior, they can be symbolic and defining a concept or they can be functional and define activities in that space in all the situations they are part of the characteristic of the space.

Forms in interior space can be defined in three main groups: form of Space, Form of furniture and Form of fixture/built in furniture. Form of space can be curvilinear, cubic or irregular and etc [figure 18]. In this research use of form signifies form of furniture and fixture.

		
<p>The ALV Showroom in Milan (URL1)</p>	<p>Cosmetics Store in Tokyo by Keiichi Hayashi, Photography by Yoshiyuki Hirai (URL 2)</p>	<p>Restaurant in Hangzhou, Photography by Shu He (URL 3)</p>

Figure 18. Different architectural elements creates spaces with different forms

Furniture has an important effect not only on defining the identity of space, but on the authority of its users. Looking at the interior of a courtroom, arrangement of the furniture and different scale of the furniture defines the position of the users, either judge, jury, members or accused. Or as John N. Hazard puts it “the furniture arrangement will tell you at a glance who has what authority (Abercrombie, 1990, p.13)”. An information centre at the Groninger museum has been shown in images below (URL 4). Furniture is the main element in identifying the interior. Lighting elements, sitting elements and tables all have their unique character which defines the unique identity in this interior space



Figure 19. Role of using unique furniture in defining an identity in interior space

Built in furniture also plays an important part in defining an identity in interior space. In images below although the interior is empty of any movable furniture the unique design of floating staircase and the contrast between the materials which has been used for fireplace and the stair case defines a unique character for that space (URL 5).



Figure 20. Role of using fixtures with unique design in defining an identity in interior space

Designing a fixture such as a staircase or a fireplace can give a character to an interior. Smart designers can use stairs and ramps as an emphasizing element for

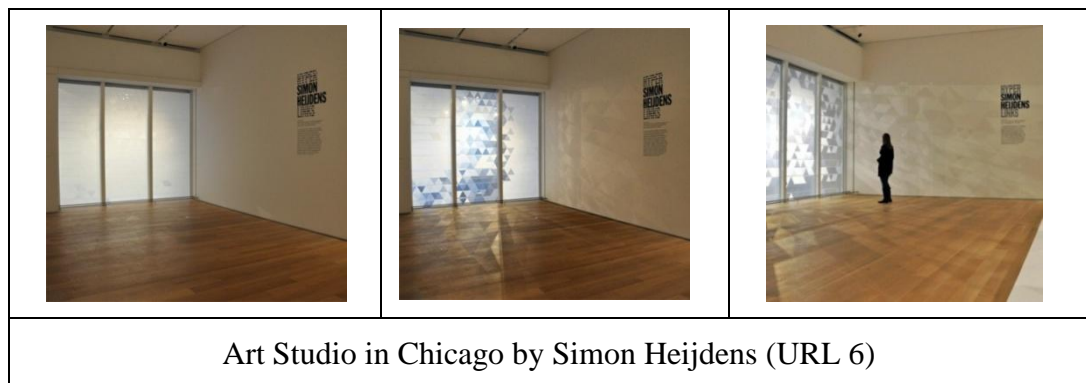
affecting the perception of users in moving from space to another (Abercrombie, 1990)”.

2.2.2.2 Lighting

According to Kubba (2003) lighting provide two basic needs “illumination” and “establishing a mood” (p. 140), however without a light in interior there will be no identity. It is with the help of the lighting which human can recognize the environment and perceive and experience its character. Light can be the main element in identifying an interior space apart from an illuminating element.

Lighting in interior may be natural or artificial. Although sunlight is the best choice to create a healthy ecological interior, but the absence of light cannot be rejected in the absence of sunlight at night and therefore increasing the quality of artificial lighting will be as important as capturing the day light in interior environment.

In the image below Simon Heijdens by using a special film on the window creates different shade and mood in interior by bringing in different amount of daylight in different times of the day (URL 6).



Art Studio in Chicago by Simon Heijdens (URL 6)

Figure 21. Using Natural Light in different time of days create different vision and unique identity in interior space

The previous image was an example of using natural light as an identifying element. Image 22 presents the artificial lighting which identifies the interior. In this space although furniture, curvilinear forms on the ceiling and the smooth taste of color all emphasize the character of the space, the unique lighting design takes attention before any other element.

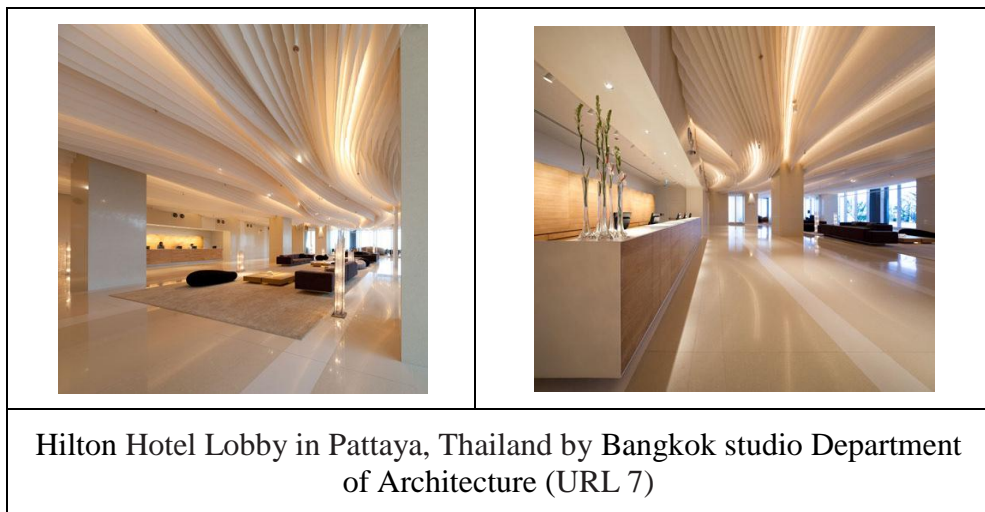


Figure 22. Role of unique artificial lighting in defining an identity in interior space

The positive effect of natural lighting has become clear in contemporary time and has been recommended by experts in architecture and psychology to gain more natural light in interior space with aim of creating a healthy, efficient and pleasant environment. Richard Kuller, a professor of Architecture explains the importance of gaining natural light as “solar radiation was important for genesis of life without light there would be no life. The second reason is that development of higher life and man to this day occurred under the constant influence of solar radiation affecting living tissues from the single cell of the skin to the specially adapted light sensitive eye (Gage, 2000, p. 102)”.

2.2.2.3 Color

Most of the events, objects, things and times remind us special colors. The night represents with black, blood with red, sun with yellow and fire with red. For us the representation of the colors affects our senses towards that color as well. Because yellow is linked with the sun it seems as a representation of warmth feeling and the link between red and fire represent the same feeling as well. Although fire do not seems to be totally red but the main color which represents it in human's mind is red. Therefore the references between colors and certain things affect the way they are perceived as well (Gage, 2000).

Color always for us is the characteristic. Users perceive color as a characteristic of their surrounded objects and environment, except the large level of human experience of color diversity makes generalizing the psychology color preferences or responses for users impossible (Meerwein, Rodeck, Mahnke, 2007), but this does deny the effect of color on users perception of space.

Deep blue reflects high degree of calmness and suggesting slipping pill. Green reflects relaxation and generation of energy (Mahnke, 1996). A room with proper touch of soothing blue invites users to relax, while an appropriate touch of green encourage users to do their activity with higher level of energy therefore choice of designer in choosing interior space colors can convey their message to users and reinforce the identity of the space with all other design elements.

In a hair dresser salon, Nuno Capa designer by using white on all the surfaces and whitish gray concrete slabs on the wall (URL 8) create a space which emphasize the activity there rather than any other thing and makes customers and hairdressers to

concentrate on the activity in that space. The white background in fact acts as exhibition for different hair styles and hair colors [figure 23].



Figure 23. Effect of color in identifying the function in interior space

Image below shows another beauty salon in Singapore (URL 9). Although designer again preferred light colors but the number of various tones has been used to create a smooth environment corresponding the function. Choice of bright yellow at entrance of different areas defines the different function in other spaces and invites users to enter the other spaces as well.



Figure 24. Using color contrast as an identifying element in interior space

In both spaces above the play with choice of colors define different characteristic in each space and each space has unique identity. Color has the power to emphasize or minimize spaces or elements within that space and in this way represent the concept behind that environment.

2.2.2.4 Texture

Texture plays an important role in interior space by creating contrast and variety (Kubba, 2003). Different materials have different textures. The texture of ash wood differs from the ply wood. Different types of steel have different textures and different types of glass have different textural surfaces.

Sometimes textures can be applied to the surfaces by the desire of the designer. These textures can carry special messages to users or they can create a special mood in that environment. Users perceive softness, coldness, roughness and smoothness by their sense of touch and with the help of texture. The texture affects the color and light as well. Different texture of glass, wood, metal, cotton and rug creates a different feeling for us (Miller & Schiltt, 1985).

Rough surfaces can reduce the height and distance and reflect colors darker and heavier. Rough surfaces create warm environment while smooth surfaces create cold environment. Living in an environment with varied textures is more satisfactory. Shiny and smooth textures can be easily cleaned and they are suitable for the spaces which being clean is a requirement in that spaces (Kubba, 2003). All these various textures define certain characteristics in space.

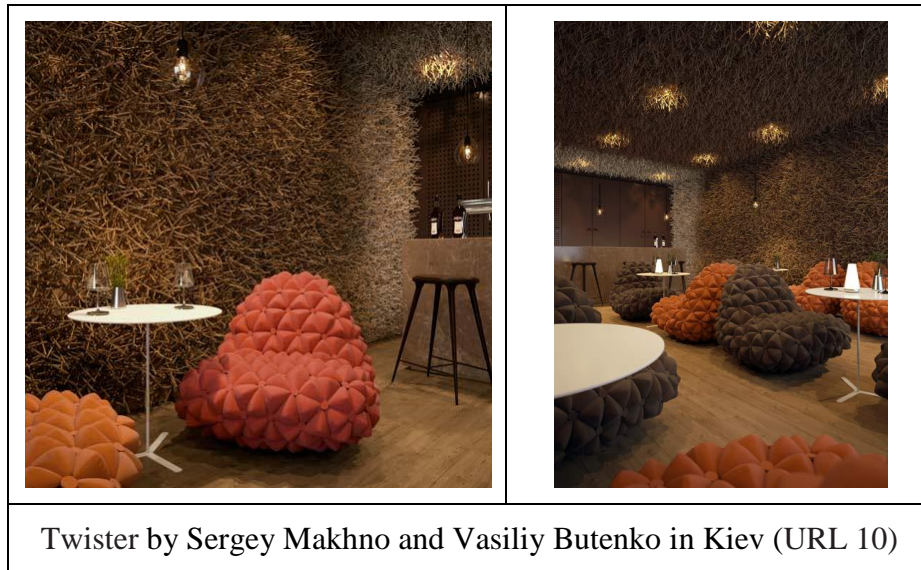


Figure 25.Elements with different textures create a unique identity in interior space

In image above designers built a new space by covering the wall with sticks (URL 10). Placement of the sticks create a rough texture while the soft texture of the marble bar and sitting elements decrease the roughness of the environment and the overall feeling is not too rough and too soft, which is a desirable feeling for users spending some time in a bar.

In previous example designers by using three dimensional and two dimensional textures create a unique identity in that bar. The texture of the fixtures and furniture is the main identical element in that interior space. Therefore is not only the form and color of objects and elements in space which affect the identity of that space, but their texture also plays an important role in users' visual and physical experience.

Since texture has direct affect on the users' mood in interior space it has affect on defining their visual and physical experience and as a result, it affects the identity of the interior space.

2.2.2.5 Style

There many different styles of interior in different region of the world, while some are the gift from previous styles and some are the designs of pioneer designers. Style is a variable characteristic which is generally defined by the designer or the client. There are three main factors which affect interior style through history: culture, technology and climate.

Differences in cultural beliefs and way of living affect the physical arrangement as well. Interior of the Muslims' mosque do not follow the same characteristic as the interior of the Christians' church (Pile, 2005). Images below show the interior of a Great Mosque in Syria and a Baroque church in Rome. The identity in each interior is unique to itself which defines different characteristics in interior space while both are the religious places.



	
Interior of the Great Mosque in Syria (Pile, 2005, p.70)	Interior Space of one of the outstanding examples of baroque churches in Rome (Pile, 2005, p. 148)

Figure 26. Factor of religion affect the interior space identity

The factor of culture differs from region to region. Two different mosques in two different countries can have different characteristics. Below are the interior of two

mosques, one in Spain and one in Istanbul. Each of the interior has its own identity due to their design approach.

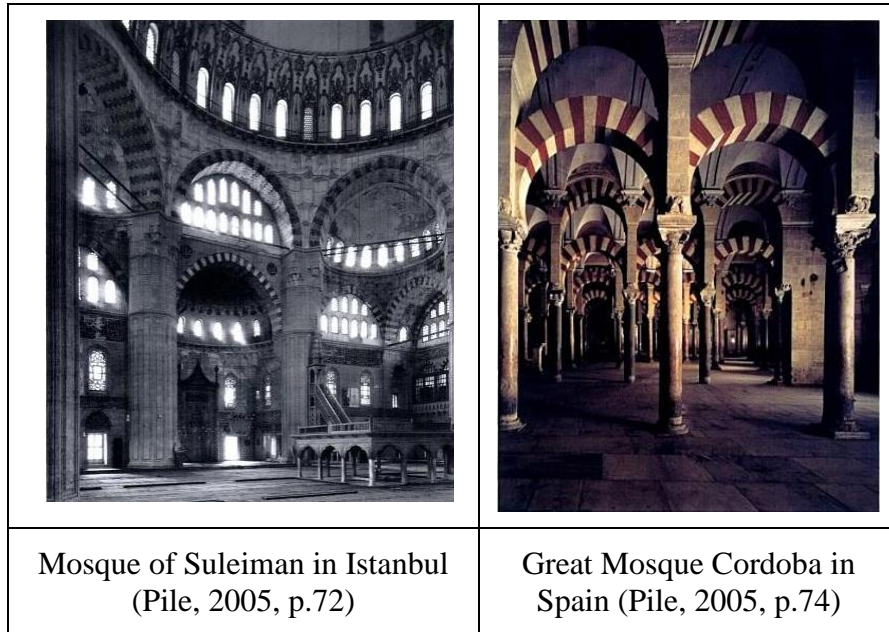


Figure 27. Two mosques with different characteristics and interior space identity

Another factor which affects different style is the development of technology (Edwards, 2010). During the time technology development allow designers to develop their techniques in design process which affect their style as well. Interior of the Modern house (Sparke & Keeble, 2009) differs from the interior of the renaissance house (Francesco, 1999). The influence of having wider choice of technology in design process on these differences is impossible to regret.

And the last factor which is climate differs region to region and the way man tried to solve his problem related to specific climate he lives in, affect the style and therefore the interior identity. Arrangement of the rooms around the central courtyard in hot climate region is the style which is still of use in number of districts (Pile, 2005).

Consistent with the variety of cultures and styles, this study is not focusing on this element however it is not also regretting the important effect it has on identifying the interiors. Designers should study the cultural requirements and beliefs in their context and reflect the positive and necessary issues to their design.

Chapter 3

INTERIOR SPACE IDENTITY IN KINDERGARTEN

3.1 Concept of Kindergarten

Kindergarten is the starting point of the modern pre-school education. Comenius, Rousseau and Pestalozzi are the modern pioneers of early childhood but the concept of kindergarten is the result of Fredrich Froebel theory (Persky, Golubchick, Doctorate Association of New York Educators, & American Federation of Teachers, 1991).

Froebel was the German educator and famous as the 'Father of Kindergarten' (Wellhousen & Keiff, 2001). He was born at Oberweissbach village in Germany in 1782. He had a hard and lonely childhood. He could not regret his conscious for knowledge about school-learning which he was failed to pass pleasantly. He sees the reason of his failure, the systematic learning by force. He studied mathematic at university and he was good at it, but he was not happy about his choice. After years living in isolated world he suddenly found his inner satisfaction and his aim narrow up on the concept of self-culture and self education method. He started researching and studying on the subject of childhood education and tried to eliminate the problems he had been faced in his own childhood (Froebel, 2007).

For Froebel the main aim of instituting kindergarten was to connect children's learning and development to a pleasure and joy and in fact he considered children's

“mental food” together with their “mental growth” (Dual, 2010, p. 2). In Froebel’s ideas not only the human life should return to the ideal life, the school should find the ideal form as well, because it is the school after all that develops human being and lead them to find their ideal way of life and achieving it (Froebel, 2007).

There have been specific considerations by Froebel in developing the idea of kindergarten which are the leading theory for many kindergartens till today.

One of the main considerations for Froebel was to increase the social communication between children, because children like adults are social creatures (Dual, 2010). According to Froebel “school should be a society in miniature” to develop children’s social character (Persky, Golubchick, Doctorate Association of New York Educators, & American Federation of Teachers, 1991, p. 85). Froebel also believes that by emphasizing the connection between child and nature, the feeling of responsibility of children for one another will be improved and in this way the positive social communication and sympathy will be increase in future societies (Wellhousen & Keiff, 2001).

His second aim was to create a joyful and pleasant environment to support children learning and development and one of the main elements which according to Froebel theory has to be considered, were landscapes elements, which can represent the concept of garden in interior (Dual, 2010). Due to the positive effect of nature on Froebel’s lonely childhood he had a deep admiration for nature (Wellhousen & Keiff, 2001) and in fact he sees the kindergarten as a garden rather than a total closure, which allows children to learn and experience freely. (Persky, Golubchick, Doctorate Association of New York Educators, & American Federation of Teachers, 1991).

The third requirement of kindergarten and the most significance one consistent with Froebel's theory is a master female teacher, which has been educated under the formulated science and art by Froebel (Dual, 2010). Fredrich Froebel sees the mother and in fact females as the best choice for taking care over children. Froebel (2007, p) describes in his book "Autobiography of Fredrich Froebel" that:

In a healthy constituted family, it is the mother who first care for, watches over and develops the child... the father receive his son from the hand and the heart of the mother, with his soul already full of active life, of desire for the knowledge of cause and effects (p. 82).

Before Froebel's theory for childhood education and his appreciation of mother role in children's development, women generally were not accepted in teaching profession (Wellhousen & Keiff, 2001), but after Froebel, today generally women are seen as teachers and staff in kindergartens.

At the end, the fourth requirement in Froebel's kindergarten is offering good toys and playing elements which provide different experiences for children (Dual, 2010). Froebel always tried to find a way which child does not only stays as receptive, but be a creative and productive person (Froebel, 2007). Froebel introduces two elements for children's development, the blocks and the gifts. The gifts include geometries such as cubes, cylinder and sphere (Wellhousen & Keiff, 2001). It is only a small percent of children who are strong in imagination and for the others; kindergarten is the best place for encouraging their ability of imagination. Adulf Dual in his book "The Kindergarten" recommends music and poesy in activity hours as a useful attempt for increasing the level of pleasure in the environment (Dual, 2010).

The effect of positive methods in kindergarten on children's creativity can be found in well known pioneers who obligate their success to their experiences in their

childhood such as Frank Lloyd Wright, a pioneer architect. He cites his success with the experiences of materials he had in kindergarten. In his Autobiography (1957, p. 19-20) Wright states that:

Mother found the gifts and gifts they were along with the system... I sat at the little kindergarten table top...and played...with the cubes, the sphere, and the triangle- these were smooth maple wood blocks...all are in my fingers to this day...I soon become the susceptible to constructive pattern evolving in everything I saw. I learned to see this way and when I did, I did not care to draw casual incidentals of nature. I wanted to design (Wellhausen & Keiff, 2001, p. 9).

According to Dual(2010), there are certain necessities in order to create the paradise for children and one of them is hiring educated teachers or educate teachers under the guidance of childhood specialists. Froebel sees the “love and sympathy” as the only factor which should exist between children and their teachers. He (1899, p. 68) states in his book “Education by Development”, that all the child is ever to become lies- however slightly indicated- in the child and can be attained only through the development from within outward (Persky , Golubchick, Doctorate Association of New York Educators, & American Federation of Teachers, 1991, p. 84)”. Well educated teachers will help children in their development and connecting their inner self with the outside world.

However there have been authors who criticize Froebel’s fanatical behavior towards his mission and principles, but it is impossible to deny the revolution he did in childhood development and education. Dr. Langes one of Froebel’s collogues who was involved in the experiment of Froebel’s educational plan in his writing with the title of “Critical Movement in the Froebel Community”, describes the long and difficult journey they had to implement the idea of kindergarten and how they stay still to their beliefs and aims in all the disappointing situations (Froebel, p.86).

Theinsistent of him allow him to implement his belief and it was for his fanatical behavior that there are kindergartens all around the world serving children and treat them as precious treasures and not the adults in smaller scale.

Kindergarten is a place to support all children's behavior and development no matter how weak and disable they are (Dual, 2010).

3.2 Preschool children in kindergarten

Children's need and characteristics change according to their age category. Children are generally categorized according to their age in kindergarten as: infants, toddlers and pre-school child (Dudek, 1996).

Boca and Wetzels (2007) in their book "Social Policies, Labour Market and Motherhood" to harmonize their comparative study in European countries, divide children in two age groups: "infants, 0-2 years of age (third birthday), and pre-school children, 3-5 (six birthday) (p.33)".

The children between ages 3 to 5 years old are in higher percentage of coverage of early childhood education in countries such as Spain, Italy, Germany, Sweden, Belgium, Denmark and Australia. The percentage of coverage average differs in these countries and even in different region within each country, but they are in a good level of children attendance in pre-school program.

Consistent with Boca and Wetzels findings, it seems that parents generally prefer to send their children to experience outside world by the age 3 and in fact Preschool age is a big change in child's life which he can starts to move towards independence in a larger world far from his/her homey environment (Wana,

2010).Due to these features, preschool category has been the focus in age category in kindergarten.

Mark Dudek (1996),who has done a wide study on kindergartens' architecture, in his book "Kindergarten Architecture" mainly focus on preschoolers. According to Dudek "the term pre-school, often uses as a catch-all to define that period prior to the commencement of statutory schooling (p.2)". He also explains that the age for children to start school varies in different countries. In UK and USA pre-school consist of children up to 5 years old, while it is 7 in Scandivian countries and in most of European countries is under six. In this study the term pre-school include children between the ages of 3 to 5years old.

Categorizing early childhood ages describes the importance of this factor on identifying kindergartens.

3.2.1 Preschool Children Characteristics

The earliest researches on pre-school children go back to the observation of exceptional children in Yale Clinic at 1911. After that Gassel (1916) did a good attempt in an experience on growth and development of children under 5 years old. After Gassel the tests and experiences continued but there was an increase concern on the validity of the previous experiments tools during 1940-196, although researchers did not give up on their studies and the development of studies during this period was productive. Until 1960s the main focus of researches was on school age children while after 1960, pre-school children become the center of interest and this interest is still enduring (Bracken & Nagle, 2007).

One of the main features which differs pre-school child from infants and toddler child is the longer time a child spend in this period and this factor provide more experiences and various interactions for him (Bentzen & Frost, 2002).

Pre-school age is the age that child start evaluating and differentiating and this development begins by evaluating child's parents or caregivers different mood. Then he continues to differentiate their initiation. As much as the environment provide the flexibility, children will be able to experience more and their capability for differentiation will be developed (Trad, 1989). Parallel to this discussion about the preschool children's ability of evaluation, according to Siegler (1996) preschool children start to make new forms of letter and compare them with the ones they are familiar with (Schickedanz & Casbergue, 2009). This activity shows the beginning of evaluation and comparison in child.

Self-stimulating is a common behavior for preschool children. They sometimes start rocking when they are asked to do a specific activity, this is not a disorder behavior for a preschool child and it is a common behavior for children in his age (Trad, 1989). Preschool children become ready for "intellectual" and "physical" stimulation (Wana, 2010) and they need an environment which offers them the best options for exploration, therefore adults should not stop this development.

Preschool children get ready to start their social development and learn to interact with other children. They start recognizing their action and the effect of their action on others and the environment. In fact they start figuring out about the world which is much larger than their home (Wana, 2010). According to Benson & Haith (2009) Preschoolers generally have a strong tendency to involve in social context and in

this age they start to interact with their environment and develop a sense of selection over the environment.

Preschool years are the beginning of phonological awareness (Schickedanz & Casbergue, 2009) and stereotyping (Katz, 1984) and the environment and activities has an important effect on supporting both development.

Preschool children judge others by their external characteristic such as physical characteristics and belongings rather than their behavior (Groenman, 1992). This shows the interest of children in this period to physical objects rather than social issues. According to Lidz (2003) playing with objects is the main characteristic of preschool children, although towards the late preschool age, sociodramatic play becomes very important feature of their play. This statement once more clarifies the effect of physical setting on children's social life.

“The preschool years are remarkable year for learning and developing (Schickedanz & Casbergue, 2009, p.38)”. Preschool age is the age which child starts identifying himself (Wana, 2010).

The socialization of children is depending on the physical context. Without any physical setting there won't be any social setting. Children begin to identify the physical environment by recognizing their home as a physical setting, and then they start to come to recognizing and identifying other meaningful places. The child place identity means his/her interrelation and integration with the physical setting. “Children between 2 and 5 years old, construct a personal identity through their

encounters with other people and with the physical environment (Weinstein & David, p.162)”.

Preschool children are ready to learn and they only need the appropriate methods and environment. Studies have been shown that children, who attend a qualified childhood education program, had a better result in tests and grades. They went to college and had a better working career. Today generally each kindergartens, pre-schools or childcares have their own program for children (Wana, 2010). The interior environment of the kindergarten should be parallel with the educational method in that environment in order to be able to support children’s development; in order to balance environment and methods, educational method of the kindergarten should be study beforehand.

3.2.2. Preschool Children Educational Methods

“The child that nature given you is nothing but a shapeless lump, but the material is still pliable, capable of assuming any form and you must so mould it that it takes on the best possible character... (Demers, 2004)” by Erasmus in 1529

Early childhood education is a subject which is increasing its value, day by day in societies. A high quality educational method not only assists children to gain success in their academic and working career in their adulthood, it also reduces the economy and social problem in society (Persky, Golubchick, Doctorate Association of New York Educators, & American Federation of Teachers, 1991).

Before eleventh century religious communities were responsible for childhood development and education. In that period there were two types of educational

models: songs and grammar school and public clerical school connected to the cathedrals. Mostly these educations were for boys only and if there was an education for girls it was very domestic. In 14th century the textual education was added to oral education. The number of girls attending educational lecture increased till 11th century while still this number was less than the boys (Demers, 2004).

By increasing the concern on children's education and development the number of researches also increases in this field. John Amos Comenius (1592-1670) appears to be the first guy to start a branch of young children special education (Persky, Golubchick, Doctorate Association of New York Educators, & American Federation of Teachers, 1991), and improvement in this branch continues till today.

Pre-school education should offer high quality educational methods and also address the other requirements of the child. The high quality educational method means "in addition to maintaining standards in basic structural features, are developmentally appropriate, meaning they employ teaching techniques and promote outcomes appropriate to the child's stage of development and learning (Zigler, Gilliam & Jones, 2006, p. 248)".

Child education specialists from Comenius (1921) till Radulph and Cohen (1964) believed in child development through experiencing, which will be done by senses. Radulph and Cohen (p. 9-20) in their book "Kindergarten : A year of learning" state that: "only by building understanding of what is senses contact, will the child be ready for the symbolic learning that will come in time (Persky , Golubchick, Doctorate Association of New York Educators, & American Federation of Teachers, 1991, p. 78)". Due to significance of the experiencing in child development based on

findings in child based researches, many childhood educational methods set this feature as the main principle of their method.

The increase in “variety of social problem, adult poverty, teen pregnancy, drug and alcohol abuse and crime” all threat children in modern societies and create difficulty for children to attend childhood educational program. Due to this critical position government in all around the world are planning to create opportunity for all children from alleconomical level to attend childhood education program (Persky, Golubchick, Doctorate Association of New York Educators, & American Federation of Teachers, 1991, p. 78).

The force for providing high-quality childhood education worldwide has a number of important supporters such as “National Association for the Education of Young Children, The National Head Start Association (2005) and The National Council of Chief State School Officers (p.19)”. There are also number of influential names in emphasizing the importance for investigating in childhood education to support it economically and provide comprehensive investigation plans such as Isabel Sawhill (1999) and professor James Heckman (2000) (Zigler, Gilliam & Jones, 2006).

According to National Association for the Education of Young Children in 1986, preschool education is worthy for all children, but it is essential for disadvantage children (Singh, 2007). The positive result of childhood education results the increase in number of early childhood education centers worldwide.

Early education representation can be summarized as follow:

1. Early education at the very least may serve to complement what children learn in their homes. At the most, it may facilitate learning that has not occurred.
2. A useful approach for planning a curriculum for young children is to employ a theory of development or learning.
3. An important component of early education program is active learning or learning through play (Gettinger, Elliott & Kratochwill, 1992, p. 9).

Today there are number of different educational methods applying in day cares, pre-kindergartens and kindergartens all around the world. One of the famous methods is Head Start method. Head start program is a free, federally funded program which has been organized for low-income children and provides high quality education for both children and their parents. Another positive feature of this program is its health service for children due to their financial problems (Wana, 2010).

- **Head Start:** There are three main philosophies which have been reflected in head start program: “An emphasis on maturational principle that stressed a maturing social-emotional environment; a behaviorist approach that emphasize highly structure didactic methods; a cognitive interactionist approach that focuses on child construction knowledge (Bracken & Nagle, 2007, p. 13)”.

In a research on Head Start program in Ohio University (1970), it has been proved that this program has a weak effect on children who participated in the program and it will be disappeared after a year child starts the school. This failure led educationalists to avoid compensatory educational methods (Smith, Cowie & Blades, 2003). Although the result of Head Start method seemed critical, but it was the start for emphasizing the importance for supporting low-income children to

attend early childhood education and there are many schools following this method all around the world.

- **Reggio Emilia:** Reggio Emilia preschool is another well-known name in preschool educations. The school of Reggio Emilia has begun in May of 1945 in Italy and Loris Malaguzzi played an important role in developing this school. Afterward the women who was working at the school and at the same time on defense of children's right, formed the first school in concept of child care for the children whose mother had working career (Fraser & Gestwicki, 2001).

Luise Boyd Cadwe (1997) in his book "Bringing Reggio Emilia home" describes his journey to Italy to study Emilia school's concept. He explains the positive features of this school. He found the excellent knowledge of teachers of words and materials as the most remarkable feature. The school itself provides variety of materials in a good quality in open bins and shelves for easy access of children. These materials are represented to children in a central and number of mini-ateliers. In 1993 after the consultant of staff and teachers with the parents of two children who were architects, it has been decided to transfer the space of the school to a space which supports the teachers and the educational method and the transformation has been done by teachers' writing about the program and their needs and recommendations (Cadwe, 1997).

There are number of key principles in shaping the concept of Emilia pre-school: "the image of the child (full of ideas and rights), environment as a teacher, relationships (physically, socially, and intellectually), collaborations (teachers and children and parents), documentation (verbal and visual), flexibility (in plan and activities), creating transparency with using transparent materials and special

lighting (Fraser & Gestwicki, 2001, p.11). In fact in Emilia preschool, lighting plays an important role in identifying the education method in environment.

- **Maria Montessori:** Maria Montessori is another innovator in childhood education. Like Froebel she believed in self-initiated education for children under the guidance of adult. She mainly emphasizes the importance of learning about real life, although she valued play as well. She believed that children should accept duties such as serving their meal and cleaning their messes instead of playing with entertaining elements, but today this philosophy has been eliminated from the programs which are working under her theory (Smith, Cowie& Blades, 2003).
- **Bank Street:** Bank street approach is another educational method for early childhood which generally focus on supporting children's feeling of competence and self-esteem. It is emphasizing John Dewey philosophy of education which describes experiences as curriculum (Gettinger, Elliott & Kratochwill, 1992).
- **High/Scope:** Childhood education should be well defined, high qualified and develop children "intellectually, socially and physically". All these factors are supported by High/Scope educational research foundation in 15 years study (Persky, Golubchick, Doctorate Association of New York Educators, & American Federation of Teachers, 1991, p. 27).

High/Scope method has shown its positive results in long term researches and it is very similar with the Froebel's original theory of kindergarten, but more developed; therefore this research focus on interior space of High/Scope kindergartens.

3.3 Interior Space Elements in Kindergartens

Mark Dudek (2008) “Schools and Kindergartens” has divided architectural design of the schools and kindergartens in three parts. First is the ordinary form of the schools which gives higher priority to gain adults sense of safety and security rather than children’s requirement. Second is the architecture which obeys from the children’s need and educational method and third is when architect starts to design through his perception of his own childhood. According to Dudek, the third category is the advanced pedagogical design. Frank Lloyd Wright is one of those architects and his influential experience of childhood has been described in previous chapter, but not all the architects can be as successful as Wright, therefore the second category is more reliable.

Greenman (1988) in his book “Caring Spaces, Learning Places” describes the influence of interior organization on children and their behavior. He describes that Long and narrow spaces tell children to run. Some objects reflect warm and pleasant feeling while some reflect fear and some texture asks them to come and touch them. Some colors makes you eat fast and leave that space, so the children. Red and oranges are those types of colors which is generally use in restaurants and make you eat and leave fast.

Any detail in interior spaces related to children should be defined to send them a message, a message to make them feel special and independent. Children’s in opposite to adults, who perceive the whole image of a place first and then start to go through details, perceive a whole image after going through details. As Blaut (1987) mentions in his article “Place perception in perspective”, a child starts perceiving a

new place by “forming images, cognitive maps and displaying place in imagination as whole”. Consistent with this discussion any detail will offer a child an experience and knowledge; therefore it is wise to design in a way to increase the quality of these experiences. As Piaget and Inhelder (1948, p.17) puts it, for children perception is “the knowledge of objects resulting from direct contact with them”.

3.3.1 Color in Kindergarten

Color has been always a characteristic of something. It can be a space, object, person or a dress. But it is never a free characteristic and it always depends on something. In psychological “red is aggressive, blue is calm and yellow is optimistic.” (Taylor & Preston, 2006, p.38)

Color is a communicating element in an interior design; it carries the designer’s words to the users. Too many colors in an environment will be annoying as much as too many words coming out of a mouth at the same time. The number of the words should be at the same understandable so users can get the message correctly (Abercrombie, 1990). Too many colors in kindergarten will also be annoying. Generally the interior furniture and objects are colorful if the walls and ceiling covers by too many colors it will confuse both children and adults.

Generally white walls seems to be a solution for increasing the negative color complexity in interior, but According to K. Warner Schaie study on preferences of using white and black in an environment by using color pyramid, the choice of these two colors was higher between the schizophrenics rather than normal people (Mahnke, 1996, p. 80). Using the white for the public spaces which their users will spend a long period of time in that environment is not a positive attempt. White environment with bright artificial lighting will disturb human vision. Using white or

off-white on the walls to act as a background of colorful objects will still remain as white environment (Gage, 2000).

To find the best taste of color, designers should find a golden middle, to ignore the space of being extreme colorful and extreme colorless and designers will not gain this aim by following trends and reflecting them to their design (Meerwein, Rodeck, & Mahnke, 2007).

There are different categories for colors. Colors have three main characteristics: “hue, value and saturation (Poore, 1994, p. 9)”. There are infinite hues for each color but the most common hues are the one represented in color wheel. The hue of color is related to darkness and lightness of the color which generally reaches by adding white and black to specific colors. Saturation is related to the intensity of the color. In this stage the value of the color is not changing and only is the intensity which varies by adding little amount of gray (Poore, 1994). [Figure28]

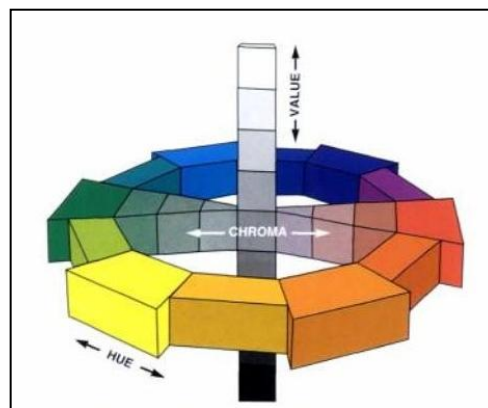


Figure 28.Hue, Value and Chroma (Poore, 1994, p.10)

Colors can also be categorized to warm and cold, light or heavy (Meerwein, Rodeck, & Mahnke, 2007). [Figure 29]

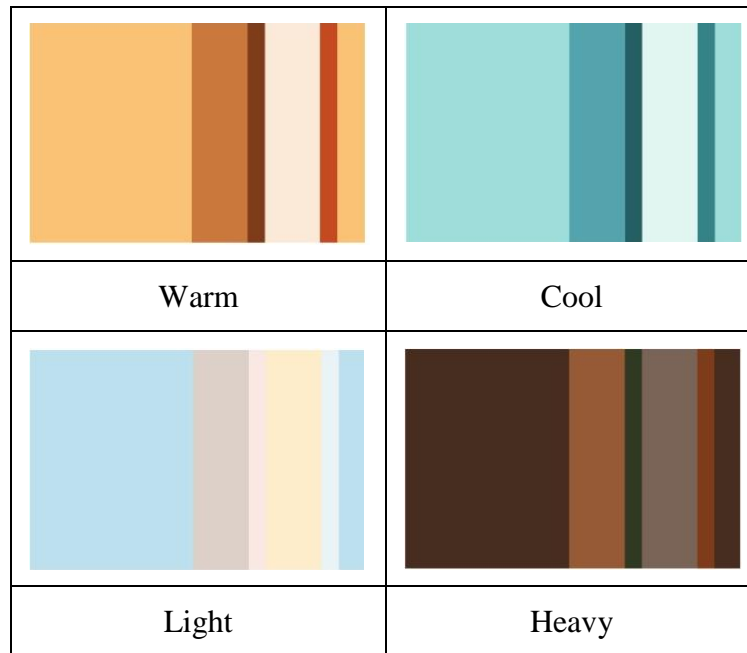


Figure 29. Color category based on Meerwein, Rodeck, & Mahnke (2007, p.25)

In an environment there must be colors with variable level of lightness, warm and cold and strong and weak (Mahnke, 1996). The idea of using warm color and ignore cold colors to create a preferable atmosphere should be rejected and both warm and cold colors should act together (Taylor & Preston, 2006).

There is not only the color categorization which creates moods; there are other factors as well. One of these factors is culture. In some culture black is representing the mourning and in some other cultures white has the same representation (Lawson, 2001).

Another factor is personality. Personal factors which effect color experiences are “basic personal disposition, personally structure and temperature, physical and psychological constitution, age and gender and sensitivity of color (Meerwein, Rodeck, & Mahnke, 2007, p. 21)”. Children’s favorite colors differs according to their personality same as adults, but they generally prefer bold colors (Creative Publishing International, 2002).

The third factor is surrounding. It is impossible to define an absolute quality for colors or textures and they should be measured along with their surroundings. The value of color is not independent and it relies on the surrounding objects and background colors. “Brightness value can be amplified or bottled out by the other values. A color can be intensified or neutralized in the same way (Kepes, 1995, p.17)”.

One of the solutions to provide the colorful interior space with appropriate level of complexity for children is to consider the color harmonies. Marberry & Zagon (1995, p.12) divided color harmonies in 4 categories: “1) Analogues harmony: colors next to each other on the color wheel. 2) Complementary harmony: color opposite of each other in color wheel. 3) Split harmony: two directly opposite colors along with one or two more colors that are analogues to one or another. 4) Full spectrum: all colors use in various proportion with changes in their value and chroma”.

Preschool children generally refer badness and ugliness to black and goodness to white (Katz, 1984); therefore black is not a good choice for children’s interior spaces.

In figure 30, color plays an identifying role in the kid’s activity center. However there are various colors in this environment, but the result is not disturbing and create an exciting place for children. Designers in choosing the colors for interior space of kindergartens should also consider the scale of the space and function.



Figure 30. Effect of color in identifying the interior space for kids

3.1.2 Texture in Kindergarten

Textures add physical impression to our psychological impression in our surrounding environment. Smooth surfaces lead us to feel luxury and formal while rough textures gives us the impression of solidity and informality (Kubba, 2003). For children this experience is much stronger. Children learn about their environment through their senses (Auer, 2008). Different textures may create different tactile experience which can be exciting and increase their exploration.

According to Kubba (2003, p. 139) there are four types of texture sensation in architecture:

1. Smooth surface such as painted walls, windows and built in furniture.
2. Rough textures such as brick, stucco, and stone.
3. The soft sensation of a pillow or curtain.
4. The delicate and sensuous texture of live objects such as human skin or rippling water.

Using each category should be done by considering the function and children safety (This will be discussed in next sections).

Using natural look of natural materials will present the sense of nature in interior which is positive for children's mood. Unfortunately, the old warm look of wood, stone and cotton is replaced with modern choice of concrete, polystyrene and nylon. True or false various circumstances result these replacements but the fact that these replacements decrease the warmness of the atmosphere, depends on the combination of those material rather than choice of traditional or modern (Taylor, & Preston, 2006).

The value of texture same as color is related to other values as well, such as the size and the shape of the texture in compare to the shape of its background. Irregular shapes may seems strongly irregular in a background of well defined geometry squares while they will seem regular in reference of extremely irregular units around them (Kepes, 1995).

Texture can define paths and spaces for children. Different textures on the floor can identify different areas in same space (Clark, 2010). Texture should also be used carefully in interior spaces of kindergarten same as colors because too many textures may create over stimulation and decrease teachers' comfort (Meerwein, Rodeck, & Mahnke, 2007). [Figure 31]

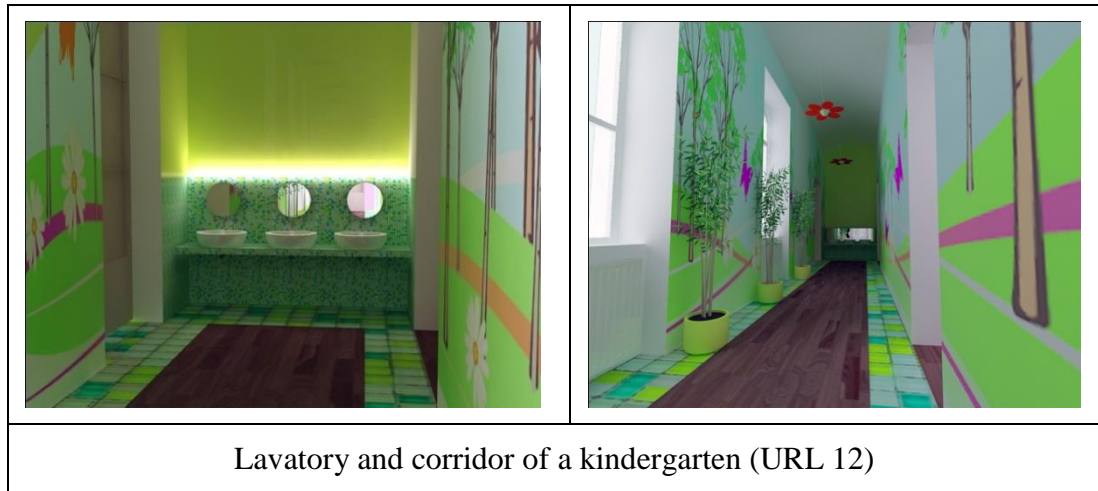


Figure 31. Role of texture in creating a positive complexity in interior space of kindergarten

3.1.3 Lighting in Kindergarten

“Light is vehicle of color (Abercrombie, 1990, p. 115)”. In fact light is the vehicle of interior space. With no light there will be no perception and no identity. Lighting instead of its traditional meaning which is luminously quality of an interior, is the result of a process consist of light, surfaces and color. As Beyoce explains in his book “the illusion of luminance” to create satisfying lighting in an interior environment, it is not enough to focus on the lighting systems and standards and instead lighting should be as an element in interior and do not be considered alone (Suri, 1995, p. 129).

while some researches claim of effect of light only on plants growth and not on the human, most of the researches claim in oppose of this idea and believe in differences between artificial lighting and natural lighting and they see artificial lighting to be unable to replace the natural light such as research done by Hollwich, Diekhues and Schrameyer done in 1977 (Gage, 2000).

Natural lighting is best option for children due to its sense of softness and various qualities (Kubba, 2003), but the artificial lighting is also essential in space. Cloudy

days or the lack of enough opening may cause problem in children’s vision. Experts recommend imitating natural lighting in the designing artificial light. Due to imitate natural lighting, the artificial source should be located in position to stimulate the fall of sunlight. The best position is to locate the source at the window to be able to contribute the illusion of diffuse light, and the best choice is neon tubes, specifically located behind a glass (Taylor & Preston, 2006).

If a space is windowless, to bring sunshine inside those spaces, optic fibers can be used, but these spaces are not recommended as children’s learning or activity spaces because Scientists found the spaces with absence of natural light damage human physically and psychologically and results “depressions, worry and vitamin (Suri, 1995, p. 162)”.

Ceilings fan lighting is another good example of artificial lighting for children spaces(Creative Publishing International, 2002), but it should consider that However artificial lighting has been produced to imitate sunlight, still it won’t reach sunlight’s “brightness”, “range” and “variation” (Taylor & Preston, p. 182). [Figure 32]

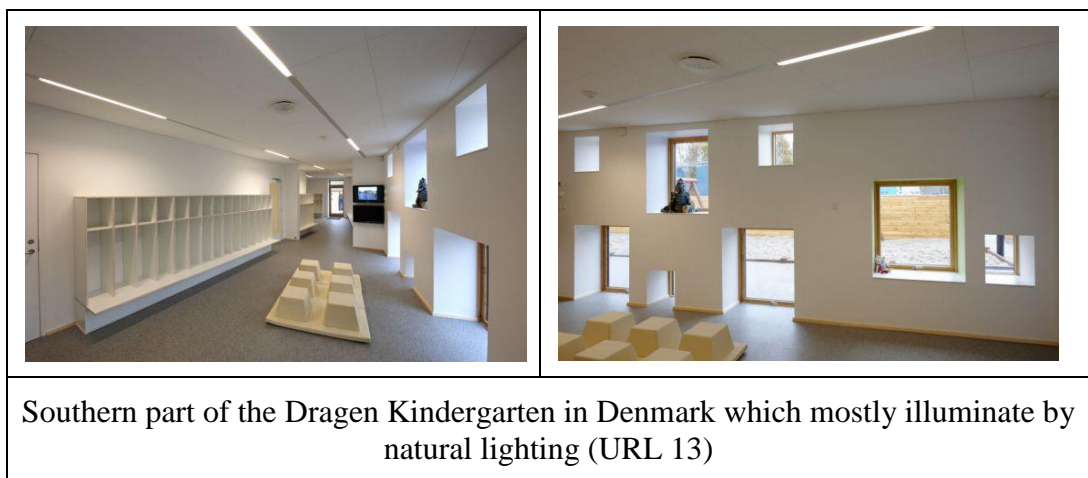


Figure 32. Use of natural light to emphasize the interior space of kindergarten

The amount of lighting is important in interior of kindergartens. However you lost your vision in absence of light, in too much light you will have the same problem as well (Abercrombie, 1990).

Lighting, color and texture should all support each other and be considered together; otherwise the result may be disturbing and unsuccessful. As Dudek (1996) puts it where use of natural light is impossible use of color becomes more critical.

[Figure33]



Figure 33.Using special artificial lighting to emphasize the exhibition elements

3.1.4 Forms in Kindergarten

As it has been explained in previous chapter form in interior include: form of space, furniture and fixtures, but only the form of furniture and fixture is the focus of this study.

3.1.4.1 Furniture

Marc Kingwell in one of his philosophical articles, in answer to the question “what is furniture for” names functionalism as the first reason for producing furniture. In his

opinion building furniture raises the need for designing another piece of furniture. A table is an extension of a chair, so furniture completes the physical task of human. Along with the functionalism comes the aesthetic and commodity. Commodity means the relationship. According to him Furniture is not something to sit upon; no longer the elevated surface where individuals lay their tools, instead furniture is an invitation to think and dream, a beckoning of possible ideas and half-formed notions” (Taylor & Preston, 2006, p. 178).

Changing the furniture can change the whole character of the same space (Abercrombie, 1990). [Figure 34] Arranging the interior furniture can define the users’ movements as well (Ching & Binggeli, 2007).

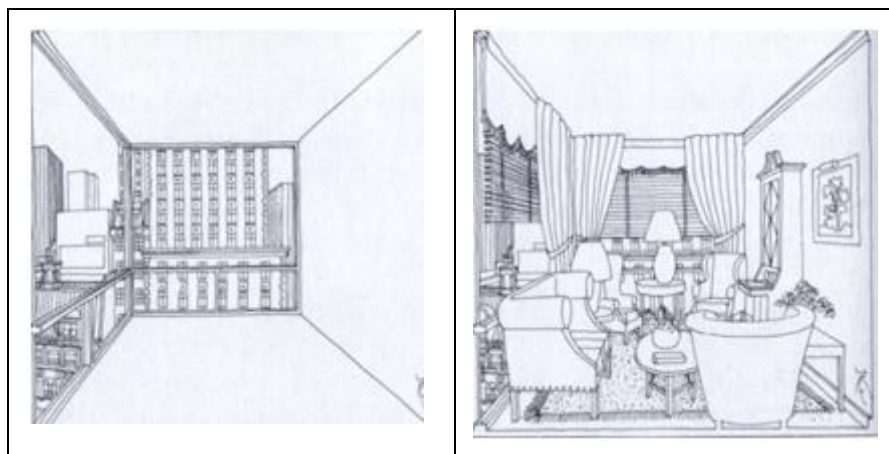


Figure 34. Furniture change the character of same room-Drawing by Der Scutt (Abercrombie, 1990, p. 74)

Generally the personality of the user’s of the space is reflected to the horizontal dimension such as shelves and vertical dimensions such as walls and bulletins (Miller & Schiltt, 1985), therefore when it comes to children’s spaces the first characteristic of the furniture will be their scale. “Scale down furniture for children is comforting and create a sense of security (Hubbard & Olsen, 2004, p. 64)”.

In figure 31, in a kindergarten designed by Monika Juhasz, the scale of the classroom has been arranged according to child scale and they can use the space easily. To transfer the furniture in child scale furniture, not only the height but the whole scale should be transferred (Feinberg & Keller, 2010).



Figure 35. Using different types of furniture with appropriate scale creates an identity in interior space of kindergarten

The character of the piece of furniture should be parallel to the character of the interior space. Furniture needs to fit with the overall ambience of the interior. People feel different in an environment with soft and comfortable furniture than an environment with straight and sharp furniture (Abercrombie, 1990).

Furniture in kindergarten should be comfortable, secure and attractive. Low weight furniture are more useful than heavy furniture in order to increase the flexibility (Feinberg & Keller, 2010).

Sometimes locating an appropriate adult size piece of furniture can be a positive element in kindergartens. Miller and Schiltt (1985) explain how the adult size sofa

can be interesting and comfortable for a child to curl up with his/her teachers and at the same time feel as a part of the adult's world.

There are three types of furniture: furniture which serves our body like our bed, couch and chair. Second types are the furniture which serves our position such as our desk, shelves and tables. And at last, the third type serves our senses, such as furniture which affect the interior quality and visual presentation [figure 36] rather than serving human's physical needs, such as lighting elements, pots, pictures and more (Abercrombie,1990).

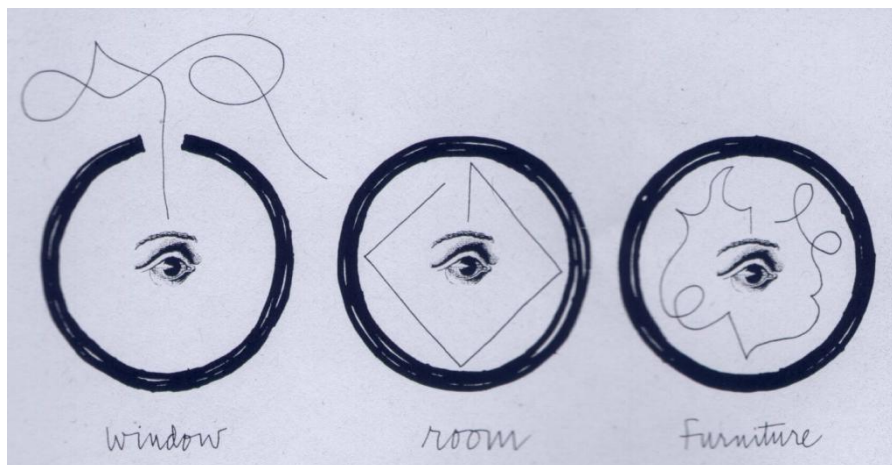


Figure 36. Furniture can bring the visual experience in interior, drawing by the author for Tod Williams and Ricardo (Abercrombie, 1990, p.82)

One of the characteristics related to furniture that should be considered in interior space of kindergarten is safety. Safe furniture should be durable, can easily be cleaned and its scale should be appropriate for the child which will use it. Number of the furniture in interior is important as well. Too many furniture in a small space will

decrease the freedom of children's movement and cause falling and crashing(Robertson, 2001).

Shelving is an important part of the furniture arrangement in High/Scope kindergartens due to the importance of the materials in children's learning. Size of the shelves is related to variety of the materials, size of the materials, scale of the children and size of the space. Shelves can either be fixed or movable. Fixed shelves are more preferred for large spaces. Movable shelves will increase the flexibility which is required in small kindergartens with lack of enough space. Movable shelves may be wheeled which easy the task of moving them for both teachers and children (Feinberg & Keller, 2010). [Figure37]



Figure 37.Movable shelving in Lexington Public Library, Village Branch (Feinberg & Keller, 2010, p.38)

Since learning about space is part of High/Scope education, Creating form and void in interior space will increase child experience of space. Since space is a part of High/Scope educational method, creating void and solid by furniture or fixture or a divider with geometry hole in it can support this skill (Feinberg & Keller, 2010).

In image below the fixtures and furniture create a successful combination to present the void and solid in interior of this kindergarten and the lighting emphasize this attempt. The space has been divided into smaller and more private spaces but the semi-close elements.



Figure 38.Using furniture and fixture to present solid and void in kindergarten

To provide private spaces, visual barriers such as partitions, objects and furniture can be useful. Landscape elements can be used as visual barriers and refreshment elements as well and provide a good feeling. Cubbies and curtains are another useful element for providing private spaces as they can be pulled whenever is desired and save space.

Existence of furniture enables an environment to be usable for teachers and children (Clark, 2010). The appropriate choice of furniture and arrangement can increase the usage for both children and teachers (Miller & Schiltt, 1985).

3.1.4.2 Fixture

Fixtures or built-in furniture can be added to the space after construction, but they will decrease the flexibility. Sometimes adding fixtures can be useful. Very large spaces decrease the sense of safety for both children and teachers. Children generally prefer small, bounded spaces. Fixtures can define smaller spaces within a large space.

In an interview about the childhood interest one person mentions: “when we were putting sheets or blankets on the bed, we were all getting under it and pretend that it was our own little house. I remember feeling very warm and protected there (Miller & Schiltt, 1985, p. 71)”.

Each interior architectural element such as furniture and fixture is able to provide a new experience for children and support their development (Dual, 2010). One of these elements is stair case. Someone in an interview describes a home with its unique staircase “that house had a winding stairway with a marvelous, ornate banister, as a child I would slide down it and have vision of someday descending that staircase in along, lovely dress. It’s been years since my parents sold that house, but it holds many wonderful memories (Miller & Schiltt, 1985, p. 49)”.

According to Abercrombie (1990, p.53) “As we climb the stairs, the interior around us change, different features coming into focus while other recede. Our relationship to our fellow inhabitant will also change. Stairs are wonderful theater”. The theater characteristic of the stairs in interior of kindergarten can create a mysterious story for children [figure 39].



Colorful staircase in kid's republic design by SAKO Architect (URL 11)

Figure 39. The unique color and design of the staircase identify the interior by defining an interesting experience for children

As it has been mentioned earlier, fixtures will decrease flexibility, therefore if it is they should be ignored in small spaces and if it is necessary to have fixture, their location and design should be well defined.

In next section focal interior spaces of High/Scope kindergarten will be analyzed according to space physical characteristics.

3.4 Children's Requirements in Interior Space of Kindergarten

Referring to Froebel's original idea about kindergarten emphasizes the importance of interior space of kindergarten. Although Froebel believed in children's free learning and experiencing for positive development, he also believed upon designing the environment according to children's interest (Persky, Golubchick, Doctorate Association of New York Educators & American Federation of Teachers, 1991).

In Reggio Emilia's philosophy, the role of environment is emphasized as "a valuable teacher if it is amiable, comfortable, pleasing, organized, clean, inviting and engaging (Cadwell, 1997, p. 92)".

Dudek (1996, p.10) sees the kindergarten as a total environment by involvement of "structure, children's fantasy and physical needs". He also mentions the essential need for creating an architectural space which not only supports the function, but support children's education and psychological development as well.

Arnold Gasel (1923) stated that "kindergarten is likely to be the first experience outside at the home, its influence and it's inevitably affects all subsequent development. These years determine character, much as the foundation and frame determine a structure."

Marion (2010) in her book "Guidance of Young Children" states how preschool children start to learn and manage their behavior according to the standards in environment and Carol Simon Weinstein in the book "Space for Children" reminds the importance of designing an environment which support teachers to help children through this period (Weinstein & David , 1987, p.86)". Weinstein & David (1987, p.6), parallel to the previous statements, declare that "The developmental process can be influenced by characteristics of physical setting". Consistent with these statements the importance of physical environment is an essential feature in children's development.

Every detail in an interior space of kindergarten can be an option to create new experience for children. Different surfaces on the floor may create different sounds

while children walk or run on these surfaces and in this way increase their experience of sound. Different textures on the walls create different vision and various feeling when children touch the surfaces and develop their sense of tactile, by comparing soft and rough or smooth and bumpy (Dudek, 1996). As the environment offers various actions which increase child experience, it will increase the level of child independence, which is the significance part of preschool child development (Wana, 2010).

In previous section it has been discussed the effect of interior design elements on defining an identity in interior space of kindergarten, it has been also discussed in previous chapter that the environment which reflect the user's identity and their requirements will have a unique identity, therefore it is not enough to define the identity by only considering the architectural and interior space elements and arrange the interior according to specific educational method, The interior space should reflect the children's characteristic as well.

Miller and Schiltt (1985, p.67) recommend number of consideration for transforming the home environment into a child friendly environment. These recommendations are as follow: first different types of objects such as toys, books and puzzles (complexity), comfortable table and chairs (comfort), second, soft furnishings to provide their safety and control (safety and control and flexibility). Third, visual protected areas to provide their privacy (privacy) and fourth creating playing area to encourage their imagination and fantasy (exploration) and at the end a personalized bedroom which present the child identity (scale).

Trancik and Evans (1995), in their study “Spaces Fit for Children”, state the “competency” as the important factor in interior space of day cares to support children’s development and by competency they mean the positive interaction between children and environment. In order to gain competency they categorize the physical characteristics that increase competency for preschool children as “control, privacy, complexity, exploration, restoration, place identity, legibility and safety (p.44)”.

Two of the factors above may be eliminate. First factor is restoration. Trancik and Evans by restoration meant objects and animals. Objects can fit in form category as space characteristics and animals are not the characteristics of space. The second factor is place identity which is main objective of this research and it is wider than being only a physical characteristic.

In another research done by collaboration between WestEd’s Program for Infant-Toddler Care (PITC) and Community Playthings (2008) on designing a quality classroom for children recommend 8 characteristics to increase the quality of child care environment. 4 of these factors are related to both children and teachers which are “safety, health, comfort and convenience” and 4 of them to children’s development only which are “scale, flexibility, movement and choice” (p. 3).

In fact convenience is the result of legible environment, movement is the result of exploration and choice is the result of flexible and legible environment with positive level of complexity, therefore it is better to consider “legibility” instead of “convenience”, “exploration” instead of “movement” and “complexity” instead of choice.

According to the above categorization of children's environment should reflect children's requirements which can be categorized to 10 main categories due to provide a positive environment which support children's development.

3.4.1 Health

Providing the healthy environment for children should be the first concern for designers. Locating the wet area close to the activity area so that children can wash their hands regularly (Maxwell, n.d.), Using surfaces for furniture which can be easily cleaned (PITC & Community Playthings, 2008), Well ventilation, and avoiding using hazardous or pollutant (Dudek, 1996) and designating a space for children to do physical activities will all be positive attempt to create a healthy environment.

Doing activities such as gymnastic and dance will teach children the importance of doing sport. "This will allow children to strive their mind and body, and this activity will support their physical and psychological health and increase their interest for "rhythm, energy, order and pleasant conduct (Dual, 2008, p. 15)". [Figure40]The image below shows a classroom. The special design of the ceiling creates a healthy environment by minimizing the energy consumption and environmental impact. There is a tropical garden in interior of this classroom which refreshes the environment.

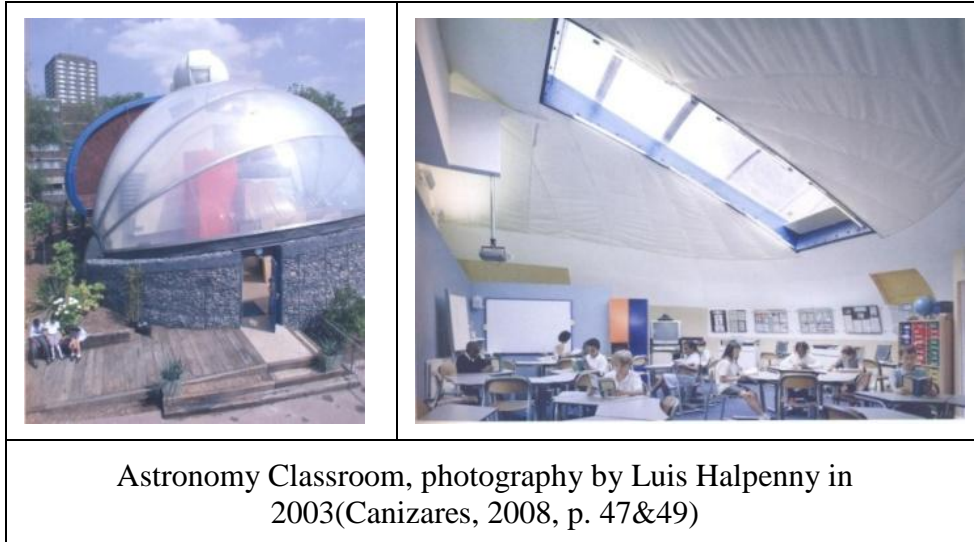


Figure 40.Using natural lighting and ventilation creates a healthy environment for children

3.4.2 Comfort

Jones and Prescott (1978) suggest that spaces which consist of soft elements and materials increase the comfort and decrease the stress for children. Soft furniture and objects such as furry toys, carpet, boxes of sand, smooth chair covering, cushions and etc can provide the required softness in interior space (Weinstein & David, 1987).

Using natural lighting instead of florescent, considering the acoustic of the space to prevent noise, using landscape elements to create fresh mood will increase the level of comfort and decrease the stress in the environment and makes it pleasant for both children and teachers (PITC & Community Playthings, 2008). [Figure 37] The waiting area in child study center below has been designed in a way to provide comfort for both adults and children. The taste of color and texture and lighting together with the flexible scale creates a unique identity in this space.



Figure 41. New York University child study center, photography by Chuck Choi
Architectural photography (Unknown, 2004, p. 85)

3.4.3 Scale

Child scale environment will increase children's sense of control over that environment. The space should provide children with all they want to do in that space. All the objects should be placed in their scale and if not, there should be other subjects support them using adult scale equipments. "If there is an adult-sized table or sink there should be a step-up stool which help them use that sink or table (Weinstein & David, 1987, p.163)".

The classroom below has been design according to the scale of the children which will use that space; therefore children will be able to use all the facilities there without feeling a need to ask their teachers to help them and in this way they feel special and confident.



Figure 42. Stix Childhood Center in USA, Photography by Sam Fentress
(Unknown, 2004, p. 105)

3.4.4 Exploration

Increasing the sense of exploration in children will increase their level of interest in space. Children should have a comfortable movement in order to have a positive exploration. Difficulties in movement will create problem in children's behavior and learning (Community Plaything, 2009). The level of exploration is also related with the level of complexity in interior space (Trancik & Evans, 1995). Objects with conceptual design and vary in different geometrics will also increase children's level of exploration (Dual, 2010).

In figure 43 the nearly empty space fill with specific objects invites children to move and stimulate and increase their exploration. The colors and playing elements identify the function in that space and the good visual access to exterior create a pleasant atmosphere.

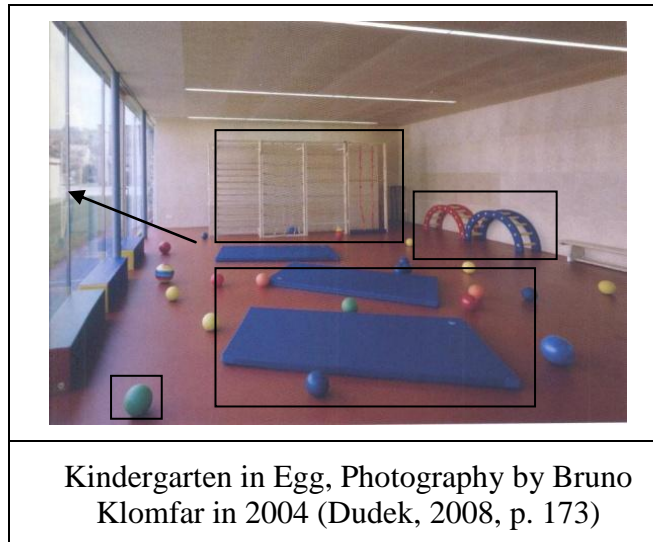


Figure 43.Placing appropriate number of elements and offering enough amount of space decrease the level of exploration of children

3.4.5 Control

Well functionally defined classroom will help children to remember that space and increase their sense of control. Houseman (1972), Smith and Green (1975) and Dawe (1934) all stated that the children’s fight on property is the most aggressive behavior for children. This property fights directly related to children. According to Prescott and Kritchevsky (1969), the number of objects, or elements or furniture for children should be 2 per children, so they’ll be able to cooperate easily without the teacher help, otherwise they won’t feel to have control over that environment (Weinstein & David, 1987). Another factor which will affect the sense of control in kindergarten is the scale of the furniture and objects. If children feel disable to use the environment and it components they feel helpless and this is not preferred for their development. The child scale design will let children to use the space sufficiently (Trancik & Evans, 1995).

In figure 40, the curvilinear space has provide a cozy playing area with a visual access from doors with transparent glass and appropriate scale of the existing object will allow children to feel in control over their surroundings.

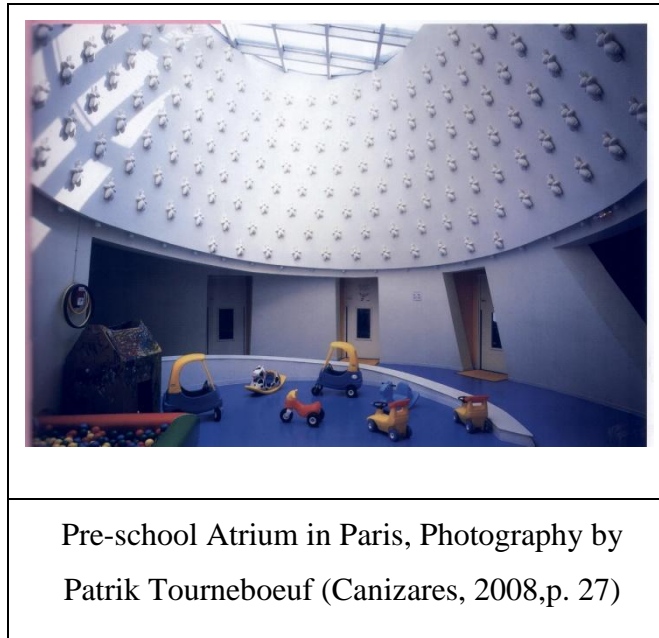


Figure 44.Placing small scale elements in a curvilinear space increase children’s visual access and in result their sense of control

3.4.6 Complexity

Spaces which provide different options for children to explore and manipulate increase children interest in space (Wilson, 1997). Stimulation and complexity are interrelated factors. The level of stimulation in interior space defines the level of exploration for children. Level of stimulation should be appropriate in an environment. Low level of stimulation results boredom, while if the space creates over-stimulation, it is hard to concentrate and decrease the task performance, therefore the positive level of stimulation should be in between (Lawson, 2001). The explanation above clearly has been reflected to the “performance curve” below [figure 45].

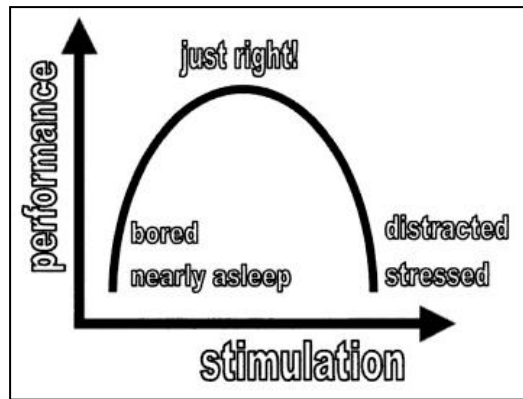


Figure 45. The stimulation performance curve that is characteristic of many psychological performances (Lawson, 2001, p. 20)

Anita Olds (2000) suggests five ways to develop appropriate variety in interior environment:

1. Creating contrast between indoors and outdoors by windows, porches, fences, transition areas.
2. Creating different heights of floor and ceiling by steps, ramps, lofts.
3. Creating bright areas and dimmer corners by lattices, screens, curtains, awnings, shadows.
4. Creating the contrast between a wall and a window, empty or cluttered space with window seat, arches, alcoves, and corners.
5. Creating contrast between order and chaos, predictability and surprise by using partially concealed entrances, winding paths, possibilities for discovery (Community Plaything, 2009, p.18).

Consistent with Olds recommendations, lighting, color and furniture all should be involved to define a positive complexity.

3.4.7 Safety

Sometimes users prefer to lose their comfort to gain security. In a well-design and comfortable waiting space in waiting hall of the railway station, there are always people who are waiting outside in cold next to the railway. They prefer to overcome their comfort by assuring themselves that they won't miss the train. Indeed they are overcoming their comfort with the sense of safety (Lawson, 2001). Children are the same. Creating comfortable area for them is not only providing soft environment, it should be safe at the same time.

Kindergarten for most of the preschool children is the first major experience outside their home, so they are looking for security so they'll be able to be adapted to that environment. The image of entrance plays an important role for supporting their sense of security. The image should be inviting, familiar and friendly (Dudek, 1996).

[Figure 46]

The transparent entrance below, allow children to have an access to different areas before they enter and the visual view of other children and teachers provide sense of safety for both parents and children. Inviting colors and unique form of the staircase identify the interior environment of that space.



Figure 46. The transparency allow arrivals to see other children and teachers in different floors and this visual connection increases their sense of safety

3.4.8 Privacy

Anne Troutman considers secret and hidden spaces the memories of her childhood. She describes that “in these long dusky hall ways and cabinets with box latches that my memories of losses and loneliness of childhood resonate” and in further she discusses the importance of hidden spaces such as “hall, stairs, closet and attic” and that she won’t feel comfortable without the existence of these spaces in her everyday life. For her hidden spaces are “light spaces, repositories of activities and memories just beyond and within the main episode of her life (Taylor & Preston, 2006, p. 237)”. She describes her exploration when she was a child and she mentions that she preferred hidden spaces to explore her fears. “Corners, eaves, slanted ceilings and areas under stairwells” will be best choices for children’s special spaces (Miller & Schiltt, 1985, p. 71)”.

In figure 47, boxes for each child to store his/her personal belongings provide sense of privacy. The images and the names of each child on each box reflect the identity of children and increase their sense of space.

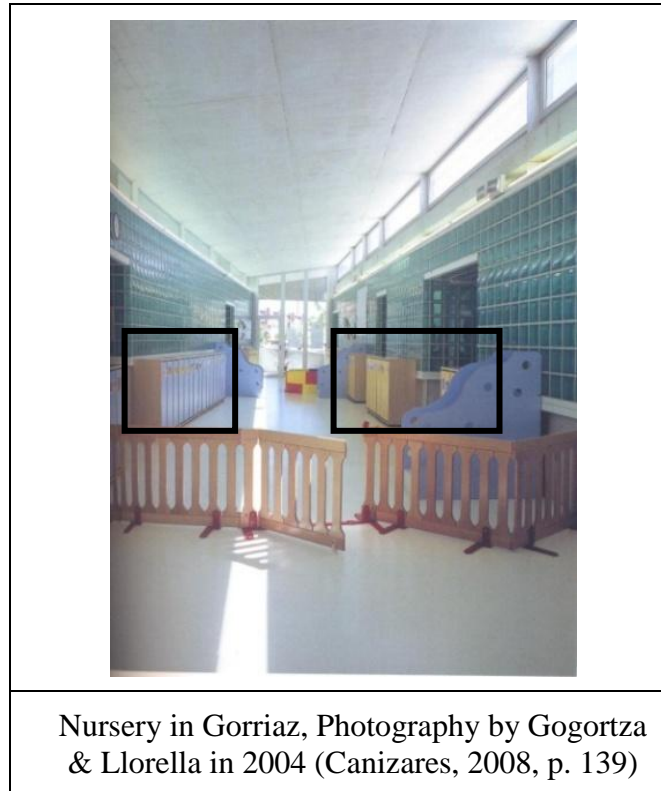


Figure 47. Children's personal cubbies in kindergarten increase their sense of privacy and sense of place

3.4.9 Legibility

A good interior organization will provide readable paths and appropriate amount of empty spaces, which will support legibility (Weinstein & David, 1987). Generally curvilinear lines increase the legibility (Ching & Binggeli, 2007). Using different colors and textures on the floor, using forms and objects such as landmarks, partitions and visual access to lead children's movement and perception in interior space will increase legibility for them (Trancik & Evans, 1995).

In image below, transparent mezzanine floor and the level differences increase children's visual access and in result, increase the legibility in the space.

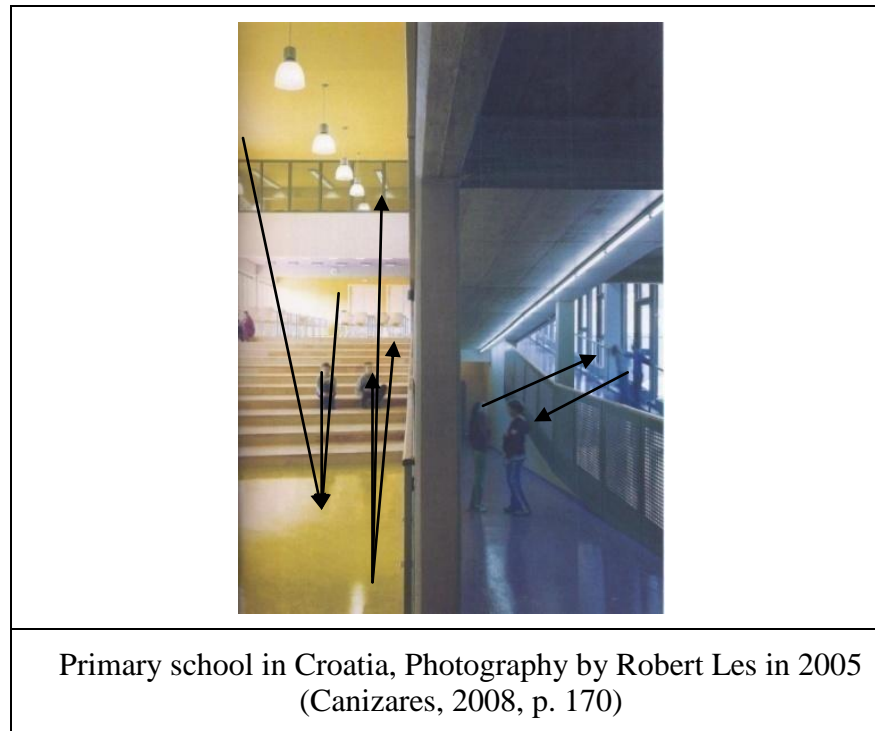


Figure 48. Level differences increases legibility in interior space

3.4.10 Flexibility

According to Sir Hugh Casson (1969) “an interior that carries too heavily and forever the professional signature of its designer and permits no contribution from its user, may be a fine monument, but it is nevertheless a tomb (Mahnke, 1996, p. 46)”.

Light-weight furniture will let children to participate in rearranging their surrounding and in this way they will transfer their identity to their environment. Providing the opportunities for children and teachers to recreate the interior spaces in kindergarten, increase children's sense of space (Wilson, 1997).

In space below, the curtain partition, allow users to change the size and number of the space. The space can be a large room or two smaller rooms by closing the curtain divider.

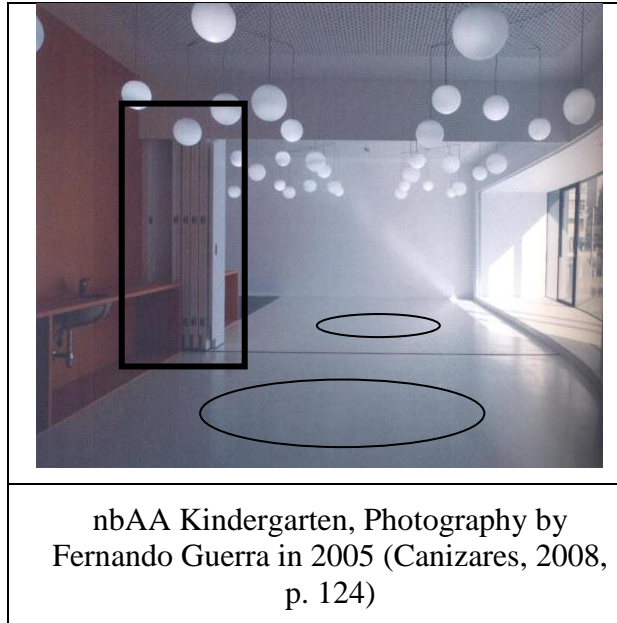


Figure 49. Movable divider in the middle of the space provide flexible scale in spaces

According to analysis of previous sections in this chapter to define an identity in interior space of kindergarten there are number of influential elements and factors.

The summery of these analyses are as follow:

Elements defining identity in interior space of kindergartens include:

1) Architectural Elements:

- Vertical elements
- Horizontal elements
- Openings
- Spatial relationship
- Spatial organization

2) Interior Space Elements:

- Forms (furniture and fixtures)
- Light
- Color
- Texture
- Style/culture

3) Children's requirement in Interior Space:

- Health
- Comfort
- Privacy
- Safety
- Legibility
- Control
- Flexibility
- Scale
- Exploration
- Complexity

4) Age category

- Infants
- Toddlers
- Preschoolers

5) Educational Method in Kindergarten

In next chapter interior space of High/Scope kindergartens will be analyzed according to design and physical characteristics of space for preschool children.

Chapter 4

A REVIEW ON HIGH/SCOPE KINDERGARTENS

INERIOR SPACE IDENTITY

4.1 High/Scope Kindergarten Interior Environment

In this chapter interior space of High/Scope kindergarten will be categorized according to the High/Scope daily activities and then children's requirements in interior space will be discussed in each space by interpretation of appropriate interior space elements (form, light, color and texture).

However the subject of culture and style is not discussed in this study, but each space in kindergarten should reflect the personality and culture of the children and staff. They also should fit with the style and cultural values of the surrounding (Community Plaything, 2009).

4.1.1 High/Scope Education

High/Scope education was found by David P. Weikart in Michigan in 1970. The organization is nonprofit and the aim is to provide active participation and learning for all children and support their success in their future life (Staples New & Cochran, 2007). High/Scope program has been developed for economically disadvantage children and it is well known as Perry pre-school project. This program invites children to logical thinking and encourages self-learning experiences. In High/Scope method "children are active learners while teachers are

facilitators and not directors, of their learning (Gettinger, Elliott, & Kratochwill, 1992, p. 25)”.

In a long-term research done from 1962 through 1967, David Weinskart and his colleagues in the Ypsilanti, Michigan chose a sample of 123 low-income African American children which were seemed to be in a risk of school failure. Half of this group attended the quality preschool program and the other half attended a preschool with no program. Same data were collected from this sample group at age 11, 14, 15, 19, 27 and 40 and then data were analyzed and official were written according to analysis. The analysis showed the success of the group which had been attended the program in education process, economy performance, health, family and children and low percentage of crime in adulthood (Weikart, Deloria & Lawser, 1970).

The daily program in High/Scope centers goes around a number of key experiences which are: “creative representation, language and literacy, initiative and social relation, movement, music, classification, seriation, time, space and number (Holt, 2007, p.3)”.

High/Scope education enables children to develop their learning by their own choice, while teachers are challenging them and attend their activity(Dudek, 1996). Adults in High/Scope education are not teachers to control children; they follow children’s initiated activities as supporters and even participate in their activities to be a part of their world. Teachers use children’s sentences in communication rather than praise because they believe this will encourage children to be in control of their activities and be able to evaluate their work. Teachers in High/Scope centers behave children

calmly, solve their problems by asking children questions about the problem listen to their comments and accept and support their solutions (Holt, 2007).

The researches has been confirmed the High/Scope education as one of the most influential approaches for pre-school children (Durlak & Ferrari, 1998). High/Scope education has been the key method in developing childhood education in many countries such as: “United State, Netherlands, Norway, Finland and Singapore”. New methods such as World Bank and Inter American Bank also have based their methods and principles on High/Scope education (Staples New & Cochran, 2007, p.261).

4.1.2 Categorizing Interior Space in High/Scope Kindergarten

Learning environment is one of the main key features of High/Scope educational method. The interior space should be well defined and labeled and design arrangement should provide the easy access for children to the other spaces and stored materials (Nutbrown, 2006).

There are certain considerations for arranging the equipments and furniture in interior space of High/Scope kindergarten. Central space will be a positive space to provide dramatic play, book shelves and music oriented activities. Well defined and carefully designed storages are essential for storing materials and children’s personal belongings (Committee on the Prevention of Reading Difficulties in Young Children, Snow, Burns, & Griffin, 1998).

There are 4 key principles consistent with High/Scope method which affects the environment. “a) Active learning b) Positive adult and child interaction c) Child-Friendly environment d) team-based daily assessment(p. 220)”. According to these

key principles and main concept of High/Scope curriculum there 3 main stages for children in their daily routine: First planning their intentions and activities which they are interested to do in that day, second, their easy access to the material to start their experience and third, the conversation between adults and children describing their daily experience (Howe & Prochner, 2000). The role of positive communication between the children adults plays an important role in supporting their development in High/Scope kindergarten; therefore elements which decrease the interaction in interior space are not preferred.

In order to categorize the required interior spaces in kindergarten, first the daily activities should be categorize. According to the research done by High/Scope Educational Research Foundation (n.d.), High/scope method consist of four main groups of daily activities in order to improve children's development as follow:

- a) **Mathematics and Science**(such as time, space and numbers): these skills develop generally by using the materials in classroom.
- b) **Language and Literacy** (such as comprehension, print and alphabet knowledge): these skills are developed generally by invoking useful conversation by teachers or actions which bring up sudden subject among children. These skills will be developed throughout the day in any action.
- c) **Social Skills** (such as restating the problem, involve children in solving the problem and calm approaches to children behavior): social skills same as language and literacy skills are developed throughout the day during different activities. Due to support this development there should be a high level of visual communication between children and teachers in spaces.
- d) **Artistic activities** (such as visual art, music and movement and dramatic play): artistic skills in High/Scope education has been defined in a way to support all

other 3 skills. Visual art will support children’s literacy, mathematics and social skills as well and it is mainly supported by using various materials. Dramatic play supports children’s imagination by giving them the opportunity to act instead of imaginary characters and act out imaginary stories, it also support their literacy and social skills. Music and movement are both interrelated activities. Children are introduced to the sounds through their movement with the music and also their physical development will be encouraged. Children at the same time can improve their other skills such as math and literacy through the music by learning and singing interesting poems.

By considering the daily activities and development in High/Scope kindergarten, the interior space of the kindergarten can be categorized according to the table 1.

Table 1. Categories of interior space of High/Scope kindergarten

Interior space	Activities
Entrance	<ul style="list-style-type: none"> ● Children’s Arrival ● Children’s Collection
Learning space	<ul style="list-style-type: none"> ● Maths and Science ● Visual art ● Literacy and Social skills
Activity space	<ul style="list-style-type: none"> ● Dramatic play ● Movement and Music ● Literacy and Social skills
Kitchen	<ul style="list-style-type: none"> ● Social Interaction
Lavatories	<ul style="list-style-type: none"> ● Health ● Independence

Consistent with the previous section, educational method plays an important role in identifying interior space of kindergarten and therefore, each interior space of kindergarten first should be defined according to the activities which will be held in that space and then they should be designed and developed by adopting appropriate design elements according to the required interior space characteristic. In forthcoming Section the characteristics of interior space of kindergarten will be discussed by referring to interior space design elements.

4.2 Design Considerations in Interior Space of High/Scope

Kindergarten

According to Elizabeth Mayo, head teacher at one of the High/Scope kindergarten “the environment is crucial because it is how the children access their learning” (Dudek, 1996, p. 20).

It is hard to identify an environment when it does not differ in something with other environments (Miller & Schiltt, 1985). Each space in kindergarten should be design according to the specific activity and learning which will happen in that space, to encourage the children’s sense of comprehension. Comprehension is one of the skills children earn through High/scope method (Holt, 2007), therefore in this section each space will be discussed individually by using the appropriate interior space elements (form, light, color, texture) in defining the characteristics of kindergarten due to create a positive environment in each space which can support kindergarten’s educational method and children’s learning and development.

• Entrance

Entrance is a critical space which child separates from his parents (Dudek, 1996).

Norman Bel Gaddes stated in 1935 three characteristic for a window display that

should be take into consideration while designing an entrance for kindergartens. These characteristics are as follow: “Arrest the glance, focus the attention upon merchandise and persuade the onlooker to desire it (Leslie, 2000, p. 12)”. The same characteristic should be considered for kindergarten’s entrance.

Transparency in entrance will create *legibility* and allows children to see activities and spaces in kindergarten and feel *safe* and in *control* over the interior, which will encourage them to go in and *explore*(Weinstein & David, 1987). [Figure50]

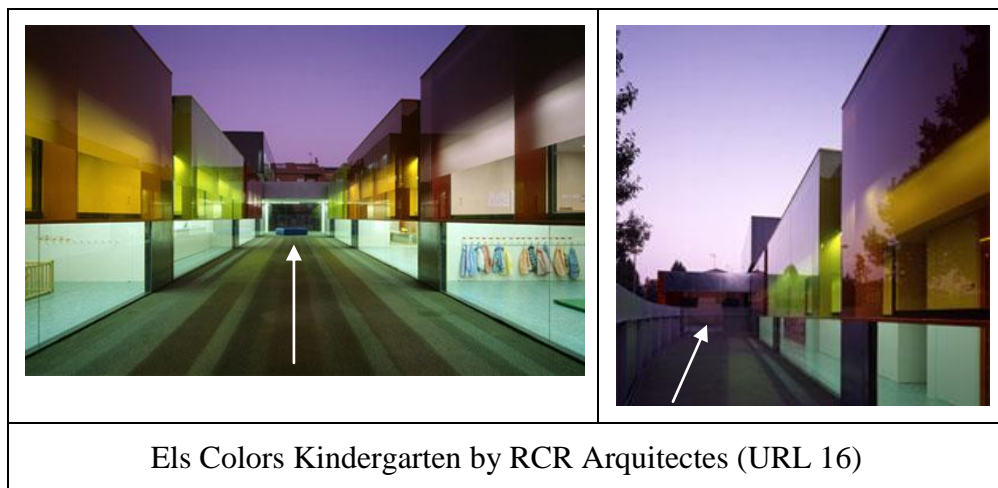


Figure 50.Using colorful and transparent glasses creates inviting access for entrance

Entrance of kindergarten should welcome and entertain children who come early and offers *comfort* and activities for those who don’t want or cannot go home directly after the kindergarten. A comfortable and inviting entrance which allow parents to meet other parents, communicate with each other and slowly get to know each other and even start meeting outside of the kindergarten’s environment, becomes the important social space instead of only offering the access to parents and children to interior environment of kindergarten (Hertsberg,2001).

Children need a space to belong to them, no matter how small it is, because they generally spend more hours during a day in kindergarten rather than their home (Greenman, 1988). Cubbies for each child in entrance (if the space is available) so that children leave their personal things before entering the kindergarten will increase both sense of place and *privacy*. [Figure 51]

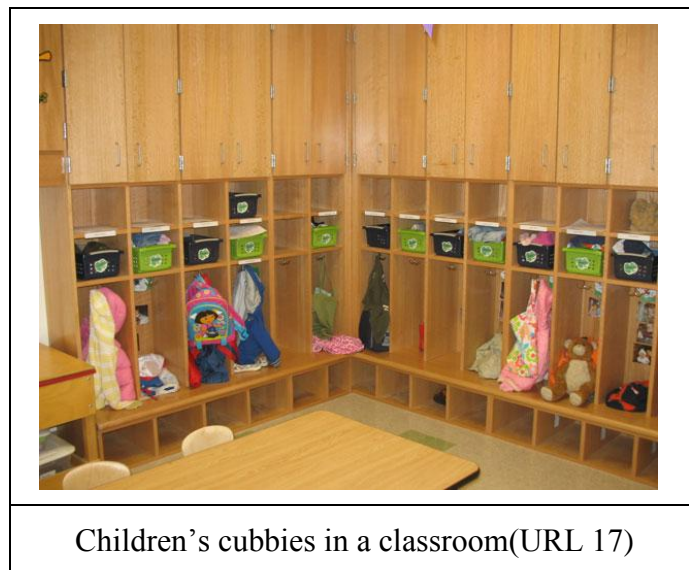


Figure 51. Children cubbies provide children with a private space to leave their personal belongings

If transparency is not available, using warm colors, various textures, landscape elements and interesting objects (Weinstein & David, 1987), provide a space for children to play and explore, a comfortable sitting arrangement will all increase the attraction of the entrance (Community Plaything, 2009).

Not only the kindergarten has an entrance, each space has a separate entrance. The entrance of a space can provide the sense of excitement and a new story for children before they enter that space. Placing a door and closing it reflects feeling of ending an experience for children. If it is not necessary, open doors are preferred. Using curvilinear vertical barriers to provide a visual *privacy* at the entrance is more

appropriate. A close door increases the consciousness of children to find out what is happening behind that door and if the door opens to another public area, it decreases the child concentration (Greenman, 1988). Since High/Scope relies on child initiated activities (Holt, 2007) it is better to not block children vision to other spaces and let them decide to choose their interested activity.

Entrance not only should provide children's sense of *safety*, it also should ensure parents to leave their children in comfort. Placing the manager or teacher's office somewhere close to the entrance which they can be seen by parents will increase the level of *security* in parents' eyes. There are worries about the exchange of control between parents and teachers, while most of the children spent their time during the day in kindergartens and teachers and educators watch children instead of parents and they will have main impression on their training. These concerns can be decreased by increasing the interaction between parents, educators and children. Entrance can be an environment to bind parents and children together with the kindergarten staff when parents deliver and collect children (Dudek, 1996). This space is essential for High/Scope kindergartens, since teachers record children's daily activities and submit them to their parents (Holt, 2007).

- **Learning Space/Classroom**

The learning environment should reflect its differences from the activity areas or an entrance hall. The arrangement of the furniture, lighting and colors can specify the character of the learning space (Dudek, 2008).

According to Schickendaz (1976) there are three rules for the preschool classroom and three design recommendations obey from these rules. If children are expected to return the materials after they are done there should be a defined storage close to

their activity area. Using “physical indicators” such as “carpet squares” and “tape” which can identify sitting arrangement will help teachers to have best position when there are group activities and children’s concentration is required and at last to prevent children from running, ignoring long and narrow spaces and instead breaking the space by using furniture, partitions and level differences will be useful (Weinstein & David, 1987).

Learning environment which need listening, concentration and building requires lower level of softness than playing area and a need for hard context is also essential (Greenman, 1988). *Flexibility* is important in learning space especially in kindergartens with lack of enough space. According to Bruce A. Jik too much *flexibility* destroys the identity of learning environment and the sense of place for learners (Dudek, 2005). A successful space is a space which has the potential for transformation and do not lose its identity. Transformation is part of the life as the nature transforms during the seasons and children develop and grow day by day (Greenmen, 1988).

As John Edwards describes in his essay “the classroom is a microcosm of the world”,In order to design a positive classroom first the activities which will take place in that classroom should be identified and then the design should facilitate those activities (Dudek, 2005). According to the table 1 in previous chapter, children by using different materials will improve their skills in math, art, literacy and social skills; therefore there should be four main areasaccordingly:

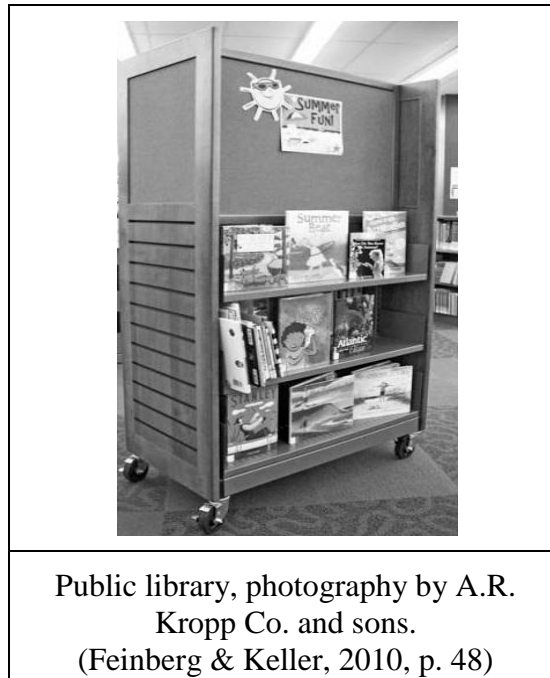
- a) Art Gallery, b) Reading Area, c) Space for supplying materials**
- d) Sitting Area**

a) Art gallery

Openness in classroom increases children aggressive behavior and decrease their concentration on school oriented spaces (Weinstein & David, 1987). If it is possible, it is better to divide the teaching activity from art gallery and have a semi open space for art activities (Dudek, 1996), but it should not be totally separate so that children can easily move from one to another space and choose their desired activity.

The physical environment of classroom in order to support children's identity should reflect children existence. Well designed cubbies which can store children personal belongings and transforming them from a small closet to children's personal spaces, using flexible materials for the cubbies so they can be painted by a child's favorite color will let children feel they belong to that space. walls and bulletin boards instead of being a background for hanging pictures and animations which only be interesting for one week can present children's drawings, pictures or something belong to them, so leaving a empty wall which can be filled later by children who will use that space will be a good attempt to support children's self esteem(Weinstein & David, 1987).

Display elements are useful for exhibiting artistic work of the children. This will make them feel special and increase their sense of place. "The blank wall covered by a tack able surface or display shelves and cabinets" can be useful for this aim (Feinberg & Keller, 2010, p. 48).



Public library, photography by A.R.
Kropp Co. and sons.
(Feinberg & Keller, 2010, p. 48)

Figure 52. Movable Display shelving allow children to present their drawings and easy mobility increase the flexibility in interior space

b) Reading area

To support children experiencing literature, which has been suggested by early childhood educators, with interior space organization, classroom can provide a well defined library or reading area. Library should be well designed and attractive to children. Weinstein recommend number of design tips for increasing the quality of library corners. Such as “locating it on quiet area, partitioned it off from the rest of the space, contain shelves and displaying books with their cover, having some elements of softness and wide variety of books and literature (Weinstein & David, 1987, p.174)”.

Using even one element can provide *complexity*. A bookshelf which offers different types of book will be a complex element. Children also will use the books in different ways and space should provide all these various usages. Some of the children may read the text or look at the pictures, so they need a comfortable elements or area to sit or lie on their stomach, some may copy and paste the text and

most probably they will need a suitable chair and table and some may sing with or listen to audio books and they need specific technology and space which enable them to do this activity without disturbing others (Community Plaything, 2009).

Since the reading activity needs more concentration, it is beneficial to give this area a suitable level of privacy. Providing smaller spaces within large spaces by using furniture and fixtures such as dividers, or a flat element hanging from ceiling, different colors and textures on the floor or even special lighting can define the smaller spaces by not blocking the visual contact to increase the sense of *security*(Greenman, 1988).

Consistent with the explanation above, the reading area despite *complexity* and *security*, should provide *comfort* (by using appropriate scale and soft furniture), *privacy* (for children who want to concentrate), *legibility* (so children can easily lead to the book or activity they are interested). Using an adult scale couch or sitting element can be a good effort in reading area.

Image below is a corner for children's reading in Crediton Library which supplies different types of elements for private and group activities. Locating the area next to the window brings natural light inside and increase the visual contact with outdoor.

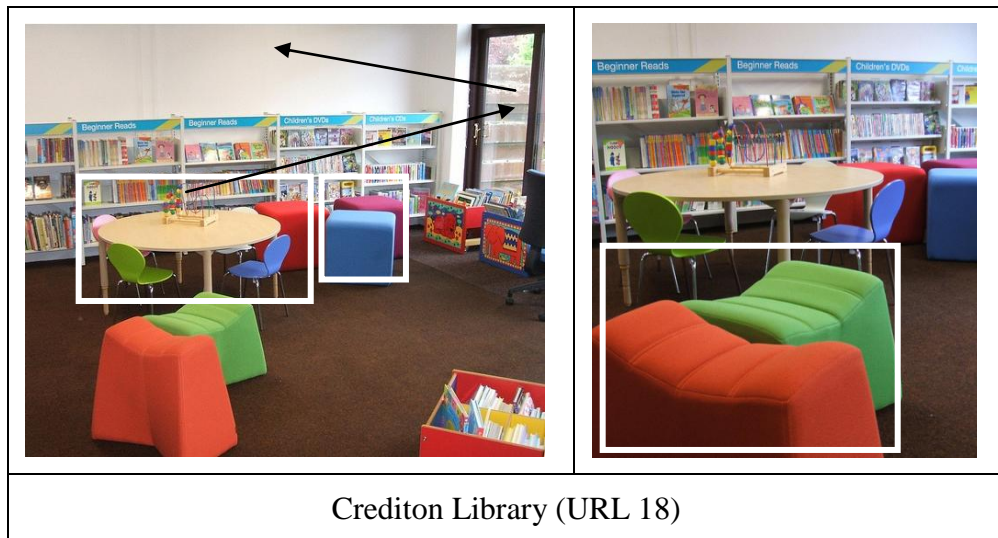


Figure 53. This corner provides a comfortable environment with various furniture for children's reading

A *healthy* reading area should provide children with sufficient light. It has been proved that number of students absenteeism will increase in windowless classroom. Therefore increasing the visibility of the classroom will encourage the student to attend that environment (Abercrombie, 1990).

In a research by Richard Kuller and his colleague Lidsten on performance of children in a classroom with window and visual access to outdoor, with windows but with no visual access to the outdoor and a windowless classroom explore the effect of natural light and visual access to the outside increases the positive performance of children (Lawson, 2001, p. 30). Parallel with Kuller and Lidsten result, study on more than 21000 students in California, Colorado and Washington proves that (Dudek, 2008, p.34):

Students in classrooms with the most window area were associated with 15-23 % faster rate of improvement. Classrooms with skylights were associated with 19-20 % faster rate of improvement. Classrooms with operable windows were associated with a 7-8 % faster improvement in compare to classrooms with non-operable window. Image below shows a classroom in Sighartstein Kindergarten. The concept of this kindergarten was to be integrated into landscape utterly. The high level of transparency creates a positive and healthy environment.

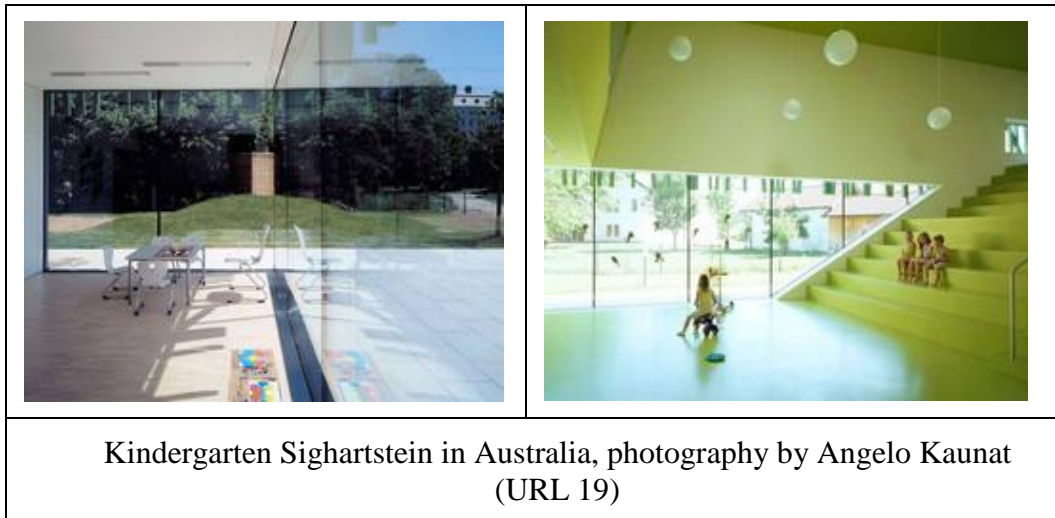


Figure 54. Increasing children's visual connection with outdoor space has a positive effect on their development

c) Space for supplying materials

In High/Scope curriculum the learning starts from simple to more complex materials during the day, therefore the need for storing is essential (Greenman, 1988). Variety of manipulate materials is an essential feature for preschoolers learning environment (Schickedanz & Casbergue, 2009). Due to importance of the materials in daily routine of High/Scope kindergarten, planning well define storage should be a first step in drawing the layout of the space. A good storage for children's spaces should have 6 characteristics according to Jim Greenman (1988):

- 1) It should be close to the space of use. (legible)
- 2) It should be able to store the required amount of materials and be able to display them easily. (*comfort* and *flexible*)
- 3) Size of the storage should be balanced with the size of the space and amount of materials.
- 4) The name of the storage should not prevent designers to design the storage aesthetically.

5) The design should be clear so that allow all the users with any age to use that space. (*legibility, scale and control*)

6) *Safety*

If all the daily materials will be kept in storage and supply to children directly, it should be large enough to allow children, move easily (*comfort*).

It is better to supply materials where children first will meet to plan their daily activity, so they can have visual access to the existing materials and choose their activity by having the visual knowledge in this type of arrangement, shelves and elements which supply the materials for children, should be in their *scale* so they do not face any disability in taking them, otherwise they will feel unable to *control* that environment (Greenman, 1988). If the materials cannot be supply on shelves only and they have to be kept in boxes, there should be a well design element to hold boxes and allow children to check the inside easily (Community Plaything, 2009) [figure 55].



Figure 55. Pulling boxes easy the task of supplying of materials for children

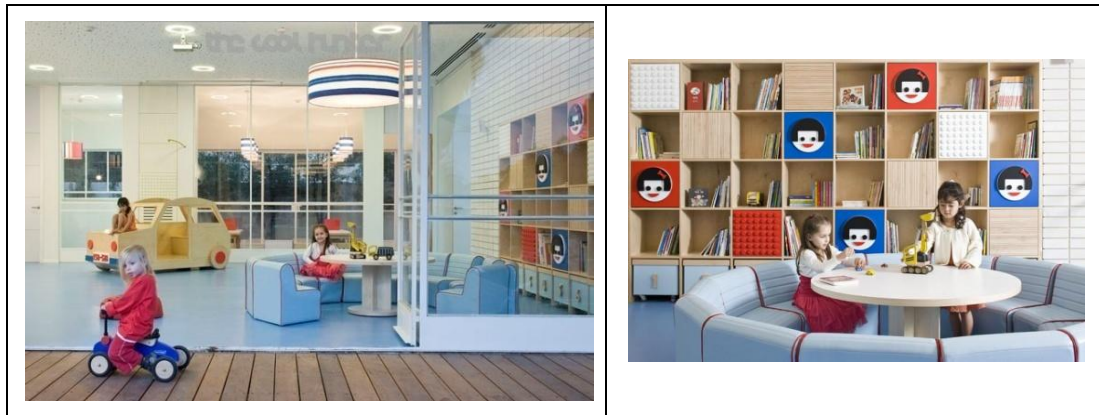
a) Sitting area

The sitting arrangement in a classroom depends on the method of teaching. It may be a teacher teaching all the children, teaches children individually, teach children in small groups or the teaching will be done through collaboration of children and teacher (Dudek, 2005). In High/Scope method the last category is used, therefore the sitting arrangement should be in a way to increase the communication for both children and teachers.

Froebel believed in circular arrangement for children because in his idea children being in circle next to each other represent the unity as a group and will also connect them with their inner self (Wellhousen & Keiff, 2001). Circular seating arrangements are suitable for sitting area which children will meet with teachers and do daily plan-review. Circular seating allow children and teachers to have a equal visual access to each other and increase the communication and decrease the privacy (Hennink, 2007), therefore for spaces which more concentration is desired rectangular arrangement is recommended.

Comfort is another important factor for seating arrangement. Not only the appropriate *scale* but the design and material of the sitting elements should be considered as well. Softness or any furniture which let you sink in it, they all make you feel relax and comfortable. Plushy pillows, soft chairs and couches are the familiar pieces providing comfort for users (Miller & Schiltt, 1985).

In figure 56, the comfortable and circular sitting arrangement next to window creates a refreshing sitting arrangement for children.



Private kindergarten in Israel, photography by Amit Garon (URL 20)

Figure 56. Flexible circular sitting element next to the window creates a desirable sitting area for both children and teachers

The interaction between classroom and outdoor space is a positive feature in figure 65. O Neil who was the pioneer of active learning and head teacher at Prestolee School in England (1850-1953), emphasize the indoor and outdoor relationship. He explains that children's activity generally divides to study indoor and play in outdoor and to be able to emphasize this, it is positive if the indoor and outdoor be in an easy access. The need for both freedom and direction is essential for children (Greenman, 1988) and it is one of the characteristic of High/Scope education.

- **Activity area/Playing area**

Children's creativity can be improved by playing. In a research by Danskey and Silverman (1975) three group of preschooler has been chose. The first group was asked to play with number of materials. Second group were asked to imitate their action by using a same object and third group were participated in a verbal experience about objects. They were all asked to explain the uses of each object in another set. The result showed, children who played, were more creative in answers than other group (Weinstein & David, 1987, p.176).

It is through the play that child learn. According to Frobel(1899, p.55) in his book “Education by Development” : “play is the purest, most spiritual activity of man at this age... it gives joy, freedom, contentment, inner and outer rest and a peace with the world... the plays of childhood are the germinal leaves of all later life (Persky, B., Golubchick, L.H., Doctorate Association of New York Educators. & American Federation of Teachers, 1991, p. 85)”.

Playing area should be unified. There can be different activities and play choices in playing area but they should be unified in a way that children be able to move from a place to place and feel this movement. To gain this unification, some places should be star and the rest of the places should be supporters. If the supporters are related to these stars the overall place will be unified. If all activities cannot be connected the patterns for connecting places will assist unification (Weinstein & David, 1987).

According to Dudek(2008) the critical issue generally in designing the interior space for children is the focus on providing adults concern for children’s safety rather than considering children’s need for exploring. In order to support children development they should be allowed to play freely in every manner they are interested and to provide this chance the playing area should be free of any stressful elements and possibilities which threaten child *safety* (Trad, 1989).

Another important factor in activity area is children’s *safety*. Unbreakable windows and mirrors, covered electrical outlets, plants which are not poisonous, well protection for the elements which can cause burn, stable furniture and softening the space as much as possible and using surfaces which are easy to clean will increase children’s safety (Bentzen & Frost, 2002).

Designers to provide safety in indoor environment should study indoor safety and indoor safety equipments and fire and burn prevention (Robertson, 2001) and to increase the safety in activity area furniture, objects and elements should check continuity for safety requirement and safe use. Placing swings, ladder and slides is not unsafe, but if the space is small and there are hard surfaces these elements are not recommended (Dudek, 2008).

To have *healthy* activity space amount of lighting should be appropriate. Circadian rhythm is the result of daylight which is essential for children, since their body system is more sensitive. Windowless rooms create depression and irritability. Although too much daylight may create stress, therefore the amount of daylight should be in a level that does not disturb the visual of children. Side lighting and top lighting mainly provide this aim. Bringing in the light from two different direction decreases the discomfort (Dudek, 2008).

Activity area should have enough *flexibility* to create *legibility* and support children's sense of *control* and *comfort* and it should also create enough visual access to assure teachers for children's *security*.

Legible space does not mean a total open plan with no direction or separation. Spaces need to be separate to work properly, but the separation does not mean defining an enclosed space. There should be a balance. Using glass and small scaled or semi-open dividers will assist designers to gain this balance (Dudek, 2008).

Legibility can be created through pattern. Pattern can be created by using form, light, line and color. Too much pattern can increase complexity and be confusing, while

very limited pattern can destroy the identity of the same space. Basic sources to create patterns are textile wall covering and floor covering (Kubba, 2003). “A clear path is broad. Elongated and easily visible (Weinstein & G.David, 1987, p.75)”. If an adult won’t be able to read the access in interior space, neither the child can.

Pathways help children to understand the space. Paths remind children, they are visible. Undefined pathways may be dangerous for children. Boundaries such as walls, partitions and rug edges will help children to read the space and increase their sense of control (Weinstein & G.David, 1987). [Figure57]

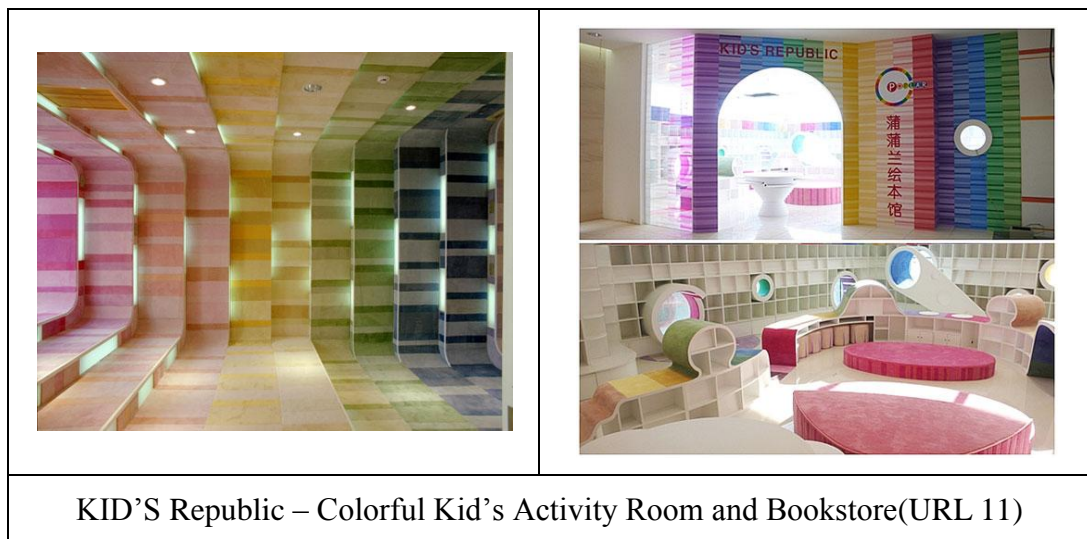


Figure 57. Creating a legible space by using color, texture, lighting and forms

According to the table 1 there should be two main spaces in high/scope kindergartens' activity area:

a) Space for 'Dramatic Play'

b) Space for 'Movement' and 'Exploration'

Dramatic play will support children's creativity(Goelman & Jacobs, 1994) and movement support children's exploration and physical health.

a) Dramatic play

Dramatic play is one of the activities in High/Scope curriculum. Dramatic play means the pretended play and is one of the aspects of preschoolers. It can be imaginary or make-belief and generally children act as different characters in this type of play. Many researches state the important role of dramatic play in developing children's social behavior, literature and creativity. Dramatic play needs specific equipments such as dress, vehicles and objects to encourage children in their role of play and these equipments need special space to supply (Goelman & Jacobs, 1994).

When play provides a means for child to differentiate fantasy and reality, it is a positive play. Children between 3 to 4 years old generally have object fantasy while for children between 4 to 5, object fantasy replaces by person fantasy. According to the research done by Cole and Voie (1985) study on 2 to 6 years old children, for children between 3 to 5 years old, objects become other objects and people become other people, which mean increase in fantasy for children (Trad,1989), therefore the variety of objects and furniture can support children's dramatic play and creativity.

According to Evans, Shub and Weinstein (1971), a space for dramatic play should contain a kitchen and bedroom [figure 67], because "these two areas are most important to children (Weinstein & G.David, 1987, p.172)". In space in figure 68, flexible furniture provides various options for children's dramatic play.



Figure 58. Spaces for Dramatic play offering appropriate elements

It should be considered that Easy access to the materials is a key feature in High/Scope environment. The rooms providing material should be legible from learning environment (Holt, 2007).

b) Movement and Exploration

Children to be able to have a positive exploration need to “use all their senses, move between activity areas and connect different activities” and to create easy movement, there is a need for in *legible* paths (Community Plaything, 2009, p. 10).

Preschoolers have more physical movement than toddlers and infants and they are starting to learn cause and effect. Children may fall; slide and crash during the play, therefore sharp edges, sharp furniture and sliding and rough surfaces should be ignored (Robertson, 2001).

To encourage children’s stimulation, nature is the best example. Inspiring from nature colors commences two categories, calm colors and exciting colors. Calm colors as blue, green and brown and exciting colors such as red and yellow. Another

feature of nature is the natural light. Daylight will bring the nature in interior space. Mirror is another artificial element which reflects the colors and light and it also stimulate children's play (Community Plaything, 2009).

Playing is working and learning for children at the same time. Preschool children generally are busy playing with objects and elements around them, because they need to perceive and experience the things physically (Dudek, 2008). To increase children's physical experience space should be able to provide different sensual experiences [figure 59].



Figure 59. Different elements, colors and textures provide enough variety for children's exploration

In image above, children can have different experiences in groups or individual through different furniture and elements in the space which its characteristics (color, lighting, texture, forms) provide a pleasant environment.

Iwanaga (1973) studied the play structure by 30 children between ages of 3 to 5 and noted the categories as follow:

1. Independent structure: play takes place without the involvement of others.

2. Parallel structure: play takes place between two and more persons with same role.
3. Complementary structure: play takes place between two and more persons and there is some degree of cooperation, but the roles are enacted independently of each other.
4. Interactive structure: play takes place between two and more persons and their role either different or undifferentiated, are enacted interactively upon each other during the course of their play together (Trad, (1989), p. 104).

Consistent with this category objects and furniture should create various options for each structure. There are three types of equipment for children according to evaluation of complexity. First is “simple unit” which means an object or equipment with a single use, such as a doll, a slide or a book. Second is “complex unit” which means an equipment, identifying two different use, such as a pile with a digging equipment, a slide with a swinger, a table with leggos, and third is “super units”, which means an equipment one and more usage, such as a table with different objects on it, a drawing boom with a hanging doll and a bookshelves with books. The last type of equipment increases the positive complexity, exploration and therefore children’s interest (Weinstein & G.David, 1987, p.76).

In table below Prescott calculates the number of play in a play yard in order to children’s lower level of interest on single units she gave value of one to simple units. If the amount of children play in this yard is 15 they have 2.0 play places per child and if they are 2 they will have 1.2 play places per a child, while she believes a good place will offer 4 choices per child (Weinstein & G.David, 1987).

Table 2. Calculating the amount to do in a play yard by Pre-scott & Kritchevsky, 1969 (Weinstein & G.David, 1987, p. 77)

Number of Play Units	Types of Unit	Number of Play Places
12 Vehicles	Simple	12
1 Rocking Boat	Simple	1
1 Tumble Tub	Simple	1
1 Jungle Gym with Boxes and Boards	Complex	4
1 Dirt Area Plus Scoop Trucks	Complex	4
One Equipped Sand and Table with Water	Super Unit	8
Totally Play Places		30

Movement in High/Scope education is not only through exploration, it is with music as well (Holt, 2007), therefore an empty space for the group activities such as dance or gymnastic is essential. If there is lack of enough space, flexible furniture can be a solution. Light weight furniture can be easily moved to create an empty space for these activities. “Climb and slide” equipments act like a gym and creates a positive physical movement for children and at the same time lead their movement and increase the safety (Community Plaything, 2009). To have a good sound experience through the music, a well define sound system is essential.



Figure 60. An activity space with flexible furniture offer various activities for children

- **Kitchen**

Most often kitchen places are separate from activity areas, while easy access of children to kitchen can be beneficial. One of the advantages of using kitchen as part of activity spaces is increasing children's exploration. If the kitchen is well designed and there won't be any element to threat children's safety, preschool children can attend food preparation by arranging tables, returning their plate after they finish their food and etc [figure 71]. In this way they can see the kitchen space as their own kitchen and create dramatic plays which support their creativity and increase their sense of *control* and *exploration*. Open kitchen let children to gain social understanding of the real world and it also let them have the chances they have at home and increase the hominess in kindergarten environment (Dudek, 1996), which is one of the aim of High/Scope education.



Figure 61. Collaboration of children and staff in kitchen (Dudek, 1996, p. 98)

Since children and teachers have a chance to communicate and relax during lunch time, it is essential to create a comfortable and warm environment to support this chance. Curvilinear tables can increase their social contact [figure 72] and warm color will increase the sense of security and create coziness and friendly environment (Creative Publishing International, 2002).



Figure 62. Warm environment of kitchen in Manzoni Elementary School (Dudek, 2008, p.30)

Kitchen also can be good place for parents and teachers meeting without interrupting children (Dudek, 1996).

- **Lavatories**

It is better to locate lavatories close to activity areas and do not see it as a common space, which can be define by using left over space, as it is an important socializing space (Dudek, 1996). Design of lavatories can be creative to encourage children to wash their hand regularly [figure 63].



Figure 63. Identifying the lavatory for children by using scale, color and fixture

Sinks and toilets are the fixtures which should be in children scale to increase their independence (Green man, 1988), otherwise there will be stools so they can use them without asking their teachers for help and feel disable.

It is useful to have washing basin in activity area and classroom, because teacher can encourage children to wash their hands regularly without forcing them and support their health.

- **Private spaces**

Not all the children are social or open to social activities very fast. This is not an abnormal behavior. These children should be able to be free to spend time on their own and slowly to adopt kindergarten's environment. Interior space of kindergarten should be providing children's desire for "take place over" (Dudek, 1996, p.22).

Altman describes privacy as “an ability to regulate social interaction (Clark, 2010, p. 96)”. Defining private spaces is essential in both activity and learning area.

Children generally look for soft areas to spend some time alone such as rugs, carpet and furry materials(Weinstein & G.David, 1987). Private areas should be protected, form noise and visual distraction, give the chance of escape physically and psychologically and be partitioned in away to give the visual access whenever is needed to provide the sense of privacy [figure 64].

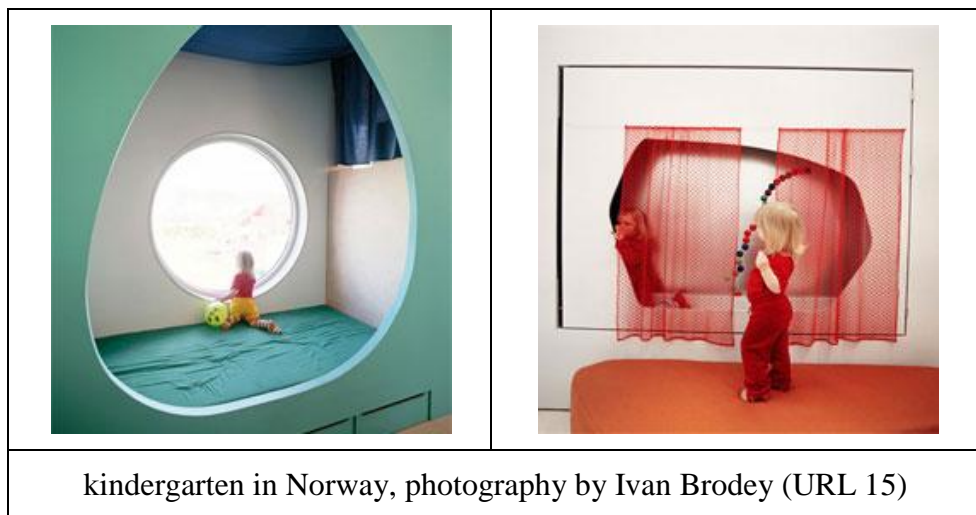


Figure 64.Private spaces for children without blocking the visual access

Dudek (2008) recommend breakout spaces inside or next to the classrooms so that children can escape whenever they need to explore or they look for privacy. Although he recommended the integration of computer lab with the breakout spaces, this is not recommended for preschoolers. If defining breakout spaces is not possible due to lack of enough space, even cozy corners or different types of furniture may create spaces for children behind them to spend some time alone (Greenman, 1988) [figure 65].



Figure 65. Specific individual furniture can provide privacy for children without creating a closure

According to Leland Shaw, children generally enjoy defensible spaces. defensible spaces are usually “small and quiet spaces with only one entrance and exit” locating defensible spaces in playing area will allow children to stop playing and return to play whenever they want. They can be also special spaces for imaginary plays (Weinstein & G.David, 1987, p.194).

Providing specific spaces for children’s privacy will mostly benefit children with psychological problems and those children who does not have positive environment at home. Dens, niches and child height spaces by creating sense of privacy will support both children’s with psychological problem and balanced children by enabling them to develop their sense of independence.

- **In Between Spaces**

There can be special spaces for specific activities which identify unique experience for children. There is a special space in Edward Everett Hale School as storytelling, connecting to public space. It is better to use these special spaces as a common space connecting to public spaces, but they also can be freestanding space in a zone which

hasan access for all children in kindergarten. The important concern should be specifying these spaces from other public spaces (Dudek, 2008) [figure 75].Hertsberg (2001) call these spaces, in between spaces which mean spaces which do not belong to public spaces.

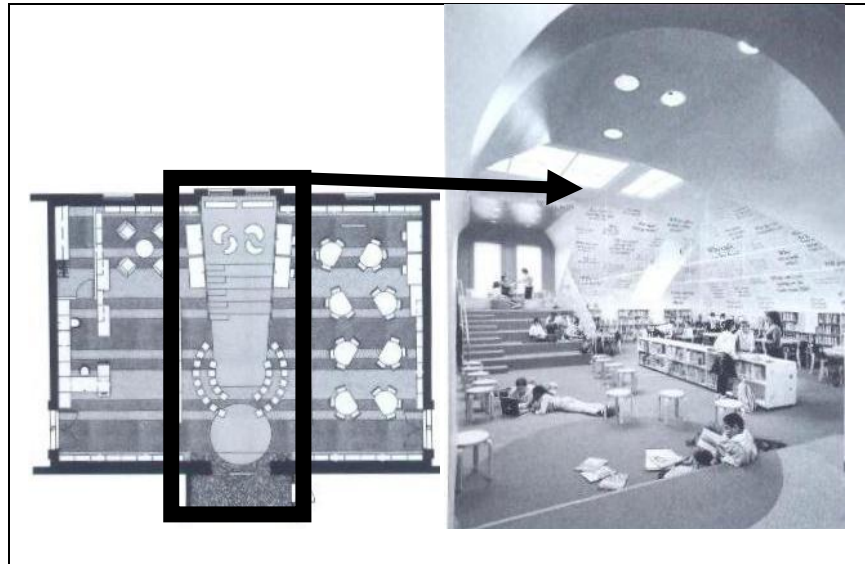


Figure 66. Central story telling at Edward Hale School Library in New York
(Dudek, 2008, p. 24)

Imaginary is an important characteristic in designing for children and it should consider through the process of design. The imagination part of designing a kindergarten connects the styles and design to contemporary designers (Dudek, 1996). As Abercrombie (1990) puts it, the designer role is not to build the design, to assemble, to select it or to purchase it, but first and primary to think it.

Chapter 5

CONCLUSION AND RECOMENDATIONS

Interior space has emotional effect on us and emotions have power over our life incidents. According to Russel and Snodgrass (1987) “places do not control emotions, but they do influence them(Augustin, 2009, p 15)”.Architectural elements define the interior which affect the user’s way of living and behavior directly or indirectly. Interior spaces elements characterize the interior space and provide it’s communication with users visually and physically.

An interior space, which architectural and interior space elements are designed to emphasize the users’ need and interest will provide the unique identity which satisfy the users whom will spend time in that environment.

As Hall puts it “space speaks (Taylor & Preston, 2006, p. 16)”. The interior space elements are the word. The spaces with identity are the spaces which speak the right words. The conversation between space and users becomes more significance when it comes to children. Parallel to architectural and interior space elements, children’s social and physical requirements should be transferred to the physical setting to provide the positive environment for their learning and development in communities such as kindergarten. Defining physical characteristics of space according to children’s requirements will represent them how special they are.

Increasing the sense of place for children in kindergartens will pleasant their time in that environment and encourage them to attend it by their desire and not parents' force. "Sense of place involves the environment's overall image and the feeling its presence transmits to the users (Weinstein & G.David, 1987, p 190), therefore only adopting one element and forget the rest will not be a positive attempt for creating the identity in interior space of kindergarten. Although specific elements and characteristics can be emphasized more due to special reasons, but all the elements and characteristics should reinforce each other to increase the interior space quality for children.

Along with the interior space characteristics there are other factors which should be consider in designing process. Teachers in kindergarten should prepare children with different toys and activities appropriate for their age category (Dual, 2010), so should the interior as well. As Dudek (2008, p.12) puts it "A good perspective design makes a difference for children at every age", therefore age category is an important concern in defining an identity in interior.

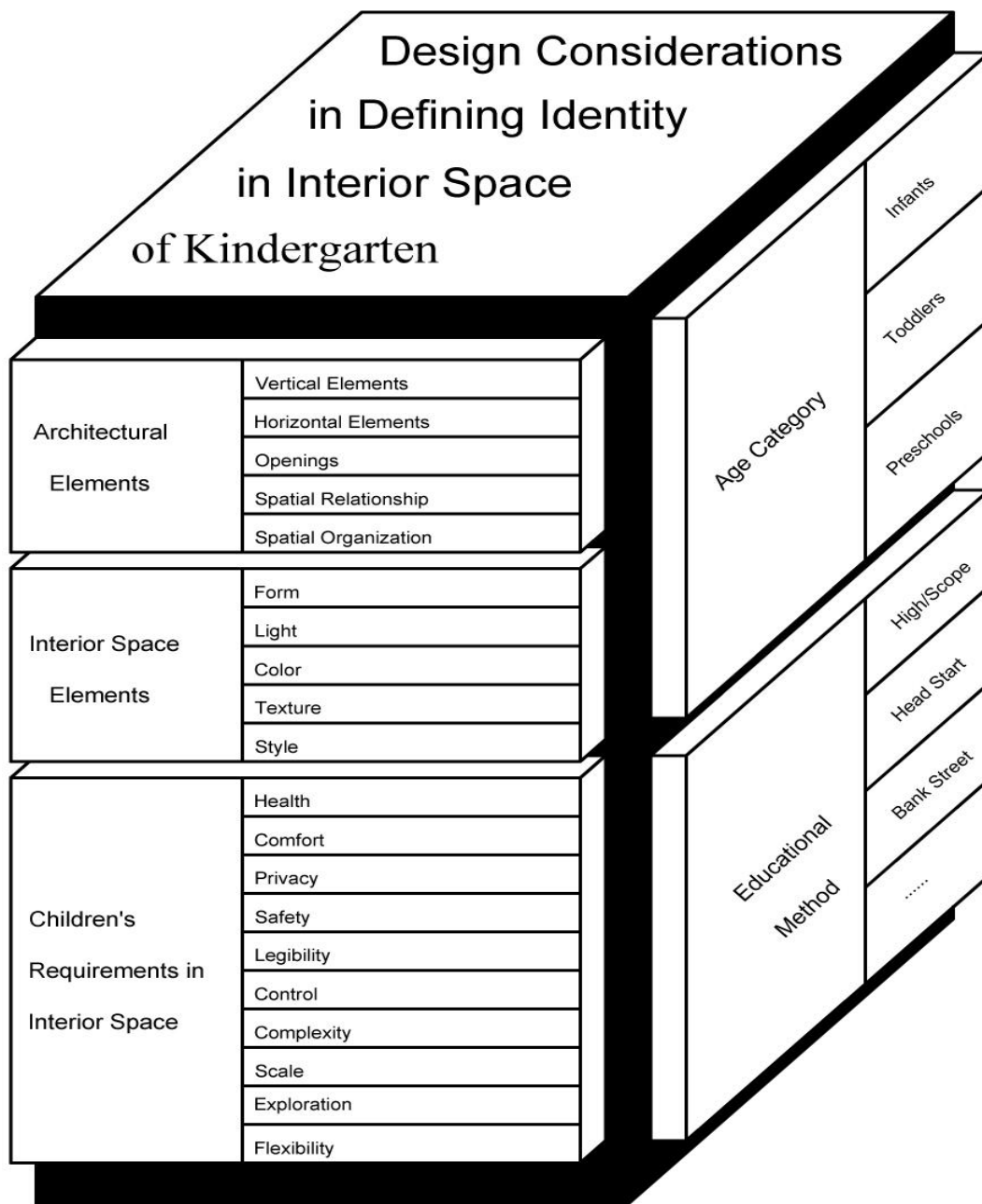
Another important concern is the teaching methods. Teaching methods will not affect children's positive development without improving the interior space (Weinstein & G.David, 1987). The interior space should be an element to support the educational theories and principles to be able to develop children's learning and experinces.

'Age Category' and 'Educational Method' are kindergarten's characteristics and although they are not related to interior space, but they affect the identity in interior space of kindergartens. Considering the designing of interior parallel to children's

requirements in interior space of kindergarten will enrich the identity and at the same time the quality of interior environment of kindergarten.

Consistent with the discussion in previous chapters the design considerations in defining identity in interior space of kindergarten are represented in the table below.

Table 3. Elements, children's requirements in interior space and design inputs that should be considered in defining Identity in Interior Space of kindergarten in order to support children's development



At one with the investigation in previous chapters, physical characteristics in kindergarten can be defined according to one or more interior space elements. This category has been emphasized in explanations below.

Forms:Forms which in this research include furniture and fixture are able to create *comfort* in environment. The *scale*, arrangement and design of forms may create *privacy*, *safety* and *legibility* in interior for children and increase or decrease their sense of *control*. The number and weight of furniture and fixture affect the *flexibility*

in interior and define the level of *complexity* and in result the level of *exploration* for children. The materials of the forms either furniture or fixture will influence the children's *health* as well.

Light:Lighting is the tool for perceiving the identity. Children will not have any vision of their surroundings without light and therefore no *control* over their environment(Suri, 1995). Inappropriate lighting decreases the *comfort* and *legibility* in interior for children and in result decreases their sense of *exploration*. Lighting has direct effect on children's *health*(Kubba, 2003)and *safety*. The level of lighting increases or decreases the sense of *privacy*. Private spaces generally expected to be dull(Abercrombie, 1990). Different types of lighting can create *complexity* (Weinstein & G.David, 1987) in space and at the same time an opportunity for creating *flexible* lighting parallel to user's preferences.

Color: Color can be the characteristic of furniture, fixture, lighting or textures (Taylor & Preston, 2006). The combination of color affects children's psychology and *health*. The appropriate choice of colors can create positive *complexity* without decreasing the *legibility* in interior of kindergarten(Meerwein, Rodeck, & Mahnke, 2007). Too many colors decrease the *comfort* for both children and teachers while positive complexity can support children's *exploration*. Since children feel *safe* in smaller spaces (Weinstein & G.David, 1987), using warmer tones of colors can decrease the size of big spaces (Marberry& Zagon, 1995) and darker colors turn private spaces to duller spaces for providing sense of *privacy* whenever is needed.

Texture: Textures are best options to define patterns and increase *legibility*. Too many textures may create over stimulation and decrease children's *safety* and teachers' *comfort*(Meerwein, Rodeck, & Mahnke, 2007). Texture of natural materials affect children's mood and *health* (Taylor, & Preston, 2006) and create pleasant

atmosphere and increase the *comfort*. Using natural materials in private spaces can emphasize their *privacy* by refreshing their mood. Using different textures will increase *complexity* (Kubba, 2003) and in result their *exploration* (Auer, 2008).

The explanations above have been reflected in table below.

Table 4. Relationship between interior space elements and interior space characteristics in kindergarten

Interior Space Elements	Interior Space Characteristics									
	Health	Safety	Privacy	Comfort	Complexity	Exploration	Legibility	Scale	Control	Flexibility
Form	Red	Red	Red	Red	Red	Red	Red	Red	Red	Red
Light	Yellow	Yellow	Yellow	Yellow	Yellow	Yellow	Yellow	White	Yellow	Yellow
Color	Blue	Blue	Blue	Blue	Blue	Blue	Blue	White	White	White
Texture	Blue	Blue	Blue	Blue	Blue	Blue	Blue	White	White	White

Interior Space Design Elements are defined according to children's requirements in Interior Space of kindergarten which reflect children's need in order to create positive environment due to support children's development to identify the most significance element. Form which has been shown by red color has the most important role in defining all 10 requirements, light is the second significance characteristics which has been shown by yellow and color and texture are the third elements in defining identity in interior space of kindergarten with the intention of increasing the interior design quality for children.

According to the table above, form have the main effect on defining the physical characteristics in interior space of kindergarten, but other elements should also be employed to enrich the identity and focusing only on the furniture and fixture will not be a best option for designers to support development of the children who will use that space later.

As it was explained in chapter 3, education methods and interior environment should both be parallel in order to increase the performance of children and teachers, therefore in chapter 4 interior spaces of High/Scope education were reviewed as an example according to the main principles and activities of High/Scope method and afterward kindergarten's interior space elements and characteristics were discussed in each key spaces of High/Scope kindergarten individually. The characteristics which should be emphasized to enrich the identity in each space have been categorized in table 6. However health, safety and comfort are three main characteristics which have the chief effect on increasing the quality of interior space for children, but they won't be enough without the support the rest of physical characteristics.

Table 5. Categorization of significance requirement for children in each space of High/Scope kindergarten

Interior Spaces	Interior Space Physical Characteristics									
	Health	Safety	Privacy	Comfort	Complexity	Exploration	Legibility	Scale	Control	Flexibility
Entrance	Red	Red	Yellow	Red	White	Blue	Yellow	White	Yellow	White
Learning Space	Red	Red	Yellow	Red	Green	White	Yellow	Blue	Yellow	Green
Activity Space	Red	Red	Yellow	Red	Green	Blue	Yellow	Blue	Yellow	Green
Kitchen	Red	Red	White	Red	White	Blue	Yellow	Blue	Yellow	White
Lavatory	Red	Red	Yellow	Red	White	White	White	White	White	White

The requirements of children in interior space of kindergarten that should be considered in each space of High /Scope kindergartens are defined according to the High/Scope education's daily activities that will be held in each space to define the most significance requirement of children in interior space in High /Scope kindergarten. The most important requirement which should be considered in designing all interior spaces are shown in red, the second requirement in yellow, third requirement in blue and fourth requirement in green.

Due to the value of self initiated activities in High/Scope kindergartens and the importance of supplying different materials and activities in their daily program, emphasizing legibility in interior environment is an important issue in supporting the identity of educational method. Legible interior provide the opportunityfor children to have an easy visual and physical access to all the options in kindergarten in order to create their own daily experience and activity. Legibility also provides teachers with good visual access to children and increases their insurance of children's safety which will support one of the main theories of High/Scope education which states that teachers are children's followers not leaders (Holt, 2007).

Legibility will not be achieved in interior space without using all interior space elements (forms, light, color and texture) and it won't be successful without the support of other physical characteristics, therefore it is designers' job to develop the identity and design quality of interior space by combining all identity elements and factors in a positive manner with the aim of supporting children's development.

Creating a unique identity is related to designer's creativity and creativity is the characteristic of a good designer (Laer & Pentak, 2005). Designer shall involve children's imaginary world into their design to create an inviting environment for children. As Mark Dudek (2005) puts it "Designers should be translator of children's imagination (p. 17)".

This research benefits both designers and parents. A theoretical framework introduce main consideration for increasing the design quality for children's spaces and assist designers in design process and also provide a checklist for evaluating the interior space of existing kindergartens to improve the problems. The theoretical framework

also provides a general knowledge for parents about the requirements of children's environment and assists them in choosing the best option for their children.

Consistent with the importance of increasing the quality of children's education and environment, there should be researches with the purpose of evaluating the interior space quality of existing children's communities and improve the critical issues accordingly.

What today's societies are required is not building brand new, luxury kindergartens and childcares for particular and upcoming generation, but applying improvement on the existing ones which broad percentage of children are attending at the moment.

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