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A PHENOMENOLOGICAL APPROACH TO EXAMINE THE LIVED EXPERIENCE OF PUPILS WITH SCHOOL WALLS; CASE STUDY OF PRESCHOOL CHILDREN

MASTER'S THESIS

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ABSTRACT

A PHENOMENOLOGICAL APPROACH TO EXAMINE THE LIVED EXPERIENCE OF PUPILS WITH SCHOOL WALLS; CASE STUDY OF PRESCHOOL CHILDREN

Salehi, Delnaz

Architecture Master's Program

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Throughout history walls have existed as one of the fundamental components of any building which are used to define a space or outline edges, to contain a space that provides indoor comfort qualities for the specific needs of users. Different architectural typologies such as a house, a factory, a school, a prison, or a religious building can only be recognized by building walls. However, it is wise to note that the term wall has the implication of a plane being existed in a vertical and horizontal configuration which identifies a place. An educational place/institute such as a school is a place in which children spend most of their time. In this light, it is believed that the value of education has always been attached to the significance of the 'educational place/institute,' as well as the impact it has on the human mind, particularly during childhood, a period during which a child's personality, attitude, and behavior are still developing. This thesis aims to examine the lived experiences of students aged 5-6 of 'school-wall' from a phenomenological perspective. There are studies about 'walls' in architecture and the role they play in construction resulting in categorizing walls as several types. There is, however, no research that is more focused on the perceptive role that walls play in the minds of children and the role that walls play in an educational context from the perspective of children's subjective interpretation. The

methodology of the study is qualitative based on a literature review, field observation of children as well as a semi-structured interview conducted among 58 children in Bahçeşehir College Preschool.

Keywords: Architecture, Phenomenology, Lived-experience, School, Wall

ÖZ

OKUL DUVARLARIYLA ÖĞRENCİLERİN YAŞAMLARINI İNCELEMEK İÇİN FENOMENOLOJİK BİR YAKLAŞIM; ANAOKULU ÇOCUKLARI ÖRNEĞİ

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Tarih boyunca duvarlar, herhangi bir binanın temel bileşenlerinden biri olarak var olmuş, kullanıcıların özel ihtiyaçları için iç mekan konfor nitelikleri sağlayan bir alanı içermek üzere bir alanı tanımlamak veya kenarları çizmek için kullanılmıştır. Ev, fabrika, okul, hapishane, dini yapı gibi farklı mimari tipolojiler ancak duvar örerek tanınabilir. Bununla birlikte, duvar teriminin, bir yeri tanımlayan dikey ve yatay bir konfigürasyonda var olan bir düzlemi ima ettiğini not etmek akıllıca olacaktır. Okul gibi bir eğitim yeri/enstitü, çocukların zamanlarının çoğunu geçirdikleri bir yerdir. Bu bağlamda, eğitimin değerinin her zaman 'eğitim yeri/enstitü'nün önemine ve bunun insan zihni üzerindeki etkisine atfedildiğine inanılmaktadır, özellikle çocukluk döneminde, ki bu dönem bir çocuğun gelişiminin başladığı bir dönemdir. kişilik, tutum ve davranış hala gelişmektedir. Bu tez, 5-6 yaşlarındaki öğrencilerin yaşadıkları 'okul duvarı' deneyimlerini fenomenolojik bir bakış açısıyla incelemeyi amaçlamaktadır. Mimaride 'duvarlar' ve inşaatta oynadığı rolle ilgili çalışmalar bulunmaktaysa da bunlar genellikle duvarları çeşitli tiplerde kategorize eden teknik çalışmalardır. Duvarların çocukların zihinlerinde oynadığı algısal role ve çocukların öznel yorumları

açısından bir eğitim bağlamındaki etkisine odaklanan bir araştırma bulunmamaktadır. Araştırmanın metodolojisi literatür taramasına, çocukların saha gözlemine ve Bahçeşehir Anaokulunda devam eden 58 çocukla yapılan yarı yapılandırılmış görüşmeye dayalı nitel bir yöntemdir.

Anahtar Kelimeler: Mimarlık, Fenomenoloji, Yaşanmışlık, Okul, Duvar.

To my parents

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TABLE OF CONTENTS

LIST OF FIGURES

FIGURES

LIST OF TABLES

TABLES

Chapter 1

Introduction

Space and humans are two interconnected notions that have bi-directional influences in terms of how space can impact humans mentally and how humans can impact space. This means that humans are affected by the environment and they also affect the environment. Phenomenologically, place is not the physical environment distinct from the people associated with it (Seamon, 2014). Besides, places gain meaning only because people exist in them and they interact with them (Relph,1976). According to Norberg-Schulz (1965), perception is what gives people instant knowledge of their surroundings and the primary purpose of architecture is to structure the environment, which means it controls and directs human interaction with the environment. These studies demonstrate that the physical environment, including architecture and spatial design, can have a significant impact on individuals' mental psychologically and the experiences they gain through the space. Vygotsky emphasizes that knowledge can be acquired by engaging with others through encouraging activities since the child's mental development and perception processes are directly related to the environment in which they interact (Kozulin, 2003).

Some characteristics of space can affect human's experience of a space; as well as transferring a sense or feeling by being in that space. In this regard, Merleau-Ponty (1964) said that "Perception is not a sum of visual, tactile, and audible givens. Humans observe with their entire being: they understand a distinctive structure of the thing, a unique manner of being that interacts to all of their senses at the same time». Additionally, along with the five Aristotelian senses, there are atmospheric perception includes experiences of orientation, gravity, balance, stability, motion, duration, continuity, scale, and illumination. (Pallasmaa, 2014). According to Shultz (1965), a diverse range of actions demands places formed by a diverse range of characters. For instance, a house should be "protective", an office "practical," a ballroom "festive," and a church "solemn." A place's character is integrally connected to its spatial arrangement and the features that characterize it. He believed that walls are one of the primary elements shaping the spatial organization and character of a place as they serve

as boundaries that define and enclose space, separating the inside from the outside. Walls are crucial to a building's articulation because they determine how a space lies on the ground and rises to the sky. In addition, walls let people define a space's indoor or outdoor edges. While acknowledging that walls are the components that genuinely identify a place it is also worthwhile to note that the proper terminology of 'wall' can be considered as 'plane' being existing and used in different configurations. In architecture and construction walls, floors, and ceilings are in fact the planes that have been mounted whether in vertical or horizontal positions.

In addition to that wall as an existential entity whatever the reason for its presence is, has been experienced by every individual nowadays as it is an inseparable component of the buildings we live in every day. Many scholars in phenomenology believe that human beings through personal experience extract meaning from the world (Husserl, 1931; Hycner, 1985; Koopmans, 2015; Hourigan and Edgar, 2020; Gasparyan, 2021; cited in Alhazmi & Kaufmann, 2022). Phenomenology has been chosen to investigate human perception of this fundamental component in order to have a deeper understanding of this basic component since phenomenology is a way of understanding that emphasizes the description and interpretation of human experience, awareness, and meaning, particularly their overlooked, taken-for-granted dimensions (Moran, 2000; Van Manen, 2014). Using phenomenology enables the study to gain individuals' subjective thoughts about a particular subject that is under investigation by just capturing their perceptions. This study has focused particularly on the perception of children aged 5-6 as in childhood stages their thoughts and beliefs are under construction more than in adulthood. According to Piaget’s cognitive development theory, children at young ages have more potential to discover and learn from their environment. Since children’s interaction with the physical environment impacts their cognitive development.

Houses and schools are two built environments where children are primarily present and spend considerable time in these places. Although the house is the first and integral environment in which a child is immersed and starts to interact with the surrounding environment, schools play a vital role in their educational and social development. The design and architecture of educational institutions have been given significant attention over the years, with the aim of creating an environment that fosters

positive learning experiences and enhances the overall educational process. During the formative years of childhood, when a child's personality, attitude, and behavior are still being shaped, the environment in which they learn plays a crucial role in their development. Education and its built environment strongly affect humans during childhood more than other ages; in a study from the University of California, researchers found that preschools and primary schools are definitely a crucial educational context because the human brain in childhood is more dynamic, more flexible, and have more connections per brain cell than adult human brains (Patricia McBroom, 1999).

Children's brain development during the preschool and primary school years has a substantial impact on their cognitive and social-emotional capacities. The brain's malleability during this period is owing to the high number of neuronal connections and neural network flexibility. As a result, early childhood education is critical in the development of children's cognitive, socio-emotional, and behavioral skills, as well as personality formation and attitude toward life. The physical space of an educational institution, including the classroom, corridors, playgrounds, and other areas, can have a profound impact on a child's ability to learn and grow. And, the inseparable component that allows humans to build up these places is planes implemented in a vertical and horizontal orientation to separate spaces.

This thesis aims to phenomenologically explore students' lived experiences of school walls. 'Wall," school wall,' or 'wall perception' are considered the phenomena (Creswell, 2007, p.58. Van Mannen,1990) that this study seeks to comprehend. By examining their lived experiences gained through the walls in an educational setting, the study would be able to understand how they think and perceive school walls in their daily lives. The phenomenological approach, with a concentration on lived experiences, provides an appropriate lens through which one can investigate the important role and interpretation of a phenomenon from an individual's perspective.

In order to achieve deep layers of students' awareness, knowledge, and understanding of the wall phenomenon, two methods of field observation and semi-structured interviews with students are considered as data collection methods along with the literature review. Observation and semi-structured interviews have been

conducted in Bahçeşehir College Preschool located in Istanbul-Turkey, among 58 children aged 5-6. The observation took place during one school day, 8:00-15:30, in five preschool classes while the children were in class time as well as when they were in break and playtime. The ultimate purpose of the observation was to pay attention to children's interaction with school walls. Semi-structured interviews have been conducted on the same day within the same five classes with a subset of participating children in the form of groups, focus groups, and one-by-one, to gather information about walls, school walls, and the purpose of the existence of walls from their perspectives. Obtained qualitative data from interviews and observations have been analyzed using NVivo software to identify key statements, patterns, and correlations; data transcribed, coded, and thematically analyzed to uncover common themes and patterns.

1.1 Statement of The Problem

Despite rapid technological and architectural improvements, an in-depth examination of school buildings revealed a consistent spatial composition that has remained largely unchanged for centuries. It can be said that despite changing student and educator requirements and expectations, school organization and layout have stayed essentially the same, with minimal incorporation of the latest advancements. This preservation of typical educational building design is most seen in the configuration of school walls, which commonly function as defining borders between different learning areas. The vast range of demands of today's students should be met by educational institutions, from nurturing their academic and personal development to providing a safe and comfortable study environment. However, many school buildings, even those that are newly structured, still have the same layout and construction.

This raises the question in mind that whether the current educational system and the currently produced educational building type are actually addressing the needs of children in every age they are in. In order to look into this issue, this thesis concentrates on how school walls affect children's daily lives, as walls are an essential component

of any building. As a result, this study intends to comprehend the meaning and importance of school walls from students' point of view which is critical to better understand the intricate interplay between the physical environment and the educational experience. The use of the phenomenological method allows us to investigate the individual subjective experiences of students and develop greater comprehension of how ‘wall’ as a character of a physical environment within students, shapes their experiences and perception of it.

The Ministry of National Education (MEB) in Turkey has outlined the current educational system in the country based on the National Education Basic Law No. 1739 (Ministry of Development, 2009). This system includes five educational stages: preschool, primary school, secondary school, high school, and higher education institutions (Turkish education system and secondary education, 2015). However, according to the ‘educational buildings minimum design standards guide, the scheme of the content of schools at different educational levels remains the same (MEB, 2015). This creates a potential gap in meeting the needs of students as they progress through different educational stages; The needs of a child at age 6 are different from those at age 15. The intriguing point to have the question of this research scrutinized is nothing but the fact that space can affect a person differently depending on their age (John R. Gold, Brian Goodey, 1989).

1.2 Aim and Significance of the Study

This study aims to investigate the meaning of planes in an educational context. To address the main question of the study, 'phenomenology' has been selected to look in-depth into the phenomenon which is 'wall'. The phenomenological approach provides an opportunity to set aside any preconceived assumptions. It allows us to step back in time and knowledge that already we have, in order to judge the phenomena itself and to be closer to the essence of the phenomena. Phenomenology in this investigation paves the way for the study to examine what is the essence of the wall phenomenon through the subjective experiences of children. This philosophical approach, founded by Edmund Husserl, can discover certain invariant structures of

consciousness that lie underlying the shifting flux of human experience and awareness (Seamon, 2000). This approach would allow this inquiry to focus particularly on the lived experiences of students gained from interaction with walls in an educational context. By delving into the students' aged 5-6 subjective perceptions and interpretations of the wall, we may gain a deeper understanding of the role that walls and school walls play in their perception as the result of educational building. The ultimate aim of the thesis is to focus on the students' subjective experiences of the physical space, examining the meaning and significance they attach to the wall within the context of their educational environment which phenomenology aids to achieve this aim. 'wall', 'wall perception', and 'school wall' as new terms will be analyzed from a phenomenological perspective by using 'bracketing' or 'epoche' (Moustakas, 1994) which attempts to put away established beliefs, definitions, and presumptions to adopt an entirely new point of view on the phenomenon. It paves the way to ask fundamental questions as follows

- what does 'wall' mean to children?
- what is the purpose of the existence of walls in the school environment?
- As well as investigating the role that school-wall play within the school context, and investigating how school walls support the school.

Through this investigation, we will be able to get close to the essence of walls and school walls from children aged 5-6 perspective during which their cognitive development has not been completed yet. According to Piaget, children between the ages of 5-6 are in the 'preoperational' stage of cognitive development which is the stage before children enter the next 'concrete-operational' stage during which children are able to think more logically and they gain the ability to turn intuitions into operations (Piaget and Inhelder, 1967). Piaget asserted that by time, children become more adaptive and gain more adaptive behavior with their environment as they start to develop a structured pattern based on their interactions with their environment and the experiences gained from their surroundings. Additionally, he asserts that developed patterns of mind are able to impact their way of thinking as they get older and more involved in their lives. (Piaget, 1997). As a result, this study selected children aged 5-6 whose experiences and definitions of any concept may not be formed and affected

comprehensively by their surrounding environment. If they impact the way we think about events and concepts, it is wise to note the strong correlation between the physical environment and human perception as these structured patterns form human perceptions throughout time by having more interaction with the physical environment. In fact, the goal of this study to select children aged 5-6 is the belief that children around those ages who have not developed a certain form of structure in mind may have not developed a concrete and definite pattern about what wall/school wall is, so we can understand their own perception with least potential of acknowledging their perception through their environmental effects.

The significance of the study lies in its exploration of the intricate relationships between phenomenology, physical environment, and human perception. By delving into the literature and examining these interconnections, the study offers valuable insights into the human experience of built environments. Regarding that, the investigation attempts to present valuable insight into the children's experiences of walls which can be considered one of the most essential and integral components of school buildings. This research has academic significance as it contributes to the theoretical understanding of the subject, uses theoretical and empirical information (gained through surveys), and bridges interdisciplinary perspectives in the fields of architecture, philosophy, pedagogy, and psychology. The findings of this study would hold practical implications for the architectural design of schools and educational institutions as the wall is a common element of any educational building. Therefore, new insights and rethinking about walls as the element of making physical environments can be valuable in order to create more suitable spaces for students/children depending on their age to fulfill their needs. Furthermore, the investigation of wall perception can become open to further research with division into multiple types of phenomenological inquiries; either examining wall perceptions of children of different ages or examining wall experiences of users of other building typologies such as houses, hospitals, offices, etc.

1.3 Scope of the Thesis

The generalization approach of humans while defining and studying phenomena has been detected as the critical reason that led the study to select a more specified area to focus on while studying phenomena. General topic research has the potential to lead to a broad and general understanding of a subject. The opposite is when it comes to examining a specific subject that demands a more deep and concentrated analysis which requires some limitations and generates scope for the investigation. As a result, this research is to provide a new perspective on a single-generalized phenomenon: internal walls of a school differ from the walls of any other building since the context of a school differs from that of other facilities.

The aim of this research is to examine the lived experiences of students aged 5-6 of wall particularly focused on the internal partition walls which divides spaces into several areas. The objective of the study is to gain the children aged 5-6 perception of walls and the role walls play in their minds. The field observation and semi-structured interviews were held among 58 preschool children enrolled in Bahçeşehir College Preschool in one day during the academic year 2023. This research aims to provide a new perspective on this single-generalized phenomenon. Hence, a phenomenological approach is adopted to examine the lived experience of pupils with school walls and to understand the meaning and purpose of these walls within the school context. Besides, the research aims to investigate the specific ways in which indoor vertical planes (walls) within primary schools affect the perceptions and experiences of students in their learning environment. In order to achieve the ultimate aim of the thesis, there is a range of literature-based studies in the fields of phenomenology, school's buildings, education, and walls as well as psychological aspects.

1.4 Overview of Literature Review

At first, investigations on 'walls' reveal that in many articles, the 'wall' is primarily used from two perspectives; virtual wall and physical wall. In some studies, the wall does not exist in the real and physical sense, yet the attributes (characteristics that we humans created for defining the wall) are being used; For example, in an article on the subject of 'school without walls', Lentz (2011) explains a school which does

not deal with 'walls,' either physically or conceptually, and the name was inspired by the idea of encouraging students to use the city as a classroom, emphasizing that participation is not a barrier or wall.

In the second aspect, the wall refers to a rigid body that exists in all too many buildings. The approach and perspective of these articles are divided into several categories; most of the articles have a technical viewpoint to wall mainly in the fields of engineering and architecture. Gür (2018) has a completely technical perspective on walls and it illustrates the mechanisms of some dynamic architectural structures and proposes an interactive interface model. Or Keleş Yiğit (2021) in the article 'Analyzing the Sustainability of Primary Schools' which has a technical approach to school exterior walls' aims to assess the sustainability of buildings and provide innovative solutions for raising energy efficiency and reducing carbon emissions from building construction, particularly from the construction of buildings' exterior walls, using various primary schools in Turkey as case studies. Although these sorts of articles struggle with walls but their approach is scientifically based on engineering, BIM (building information modeling), building technical information, etc.

However, some articles and thesis have looked into and analyzed the "wall," not only physically but also conceptually. For instance, in one article written by Errázuriz & Portales (2018) investigation was on classroom walls on which different visual images can be displayed; in fact, the importance and impact of drawings, and paintings mounted on the classroom walls are the main subject of discussion. In this study however, the wall and the role of walls themselves will be under questioning as an independent component of building to discover the meaning of school walls within students phenomenologically. Besides, the study done by Alkaya Tuğçe (2015) divided walls into several categories; wall as a threshold, perceptional situation of wall, wall as border. While Altay olak (2004) classified walls as; protective wall, conciliatory wall, amazing (game) wall, transparent wall, monumental wall, guide wall, artistic wall, mask wall, variable wall, mysterious (mysterious) wall, analog wall, natural wall, partition wall, habitual wall, contrary wall, simple wall, imaginary wall.

Literally, there are no studies more focused on school walls semantically and conceptually from a phenomenological perspective which is able to measure students' in-depth satisfaction. This study aims to see whether the walls of school make children

feel isolated or not, to see how strong is the relationship of students with walls, and to see how walls of a school support education.

1.5 Methodology

The methodology of this study is **qualitative**, based on literature research, and a survey that has been conducted in Bahçeşehir Anaokulu Koleji (Bahçeşehir College Preschool), a primary school located in Istanbul-Turkey. Data on phenomenology, schools, education, and walls have been gathered in the literature section of the thesis in order to be aware of previous studies on the topic as well as acquire an in-depth understanding of the factors that influence the way individuals and children perceive school walls. The thesis aims to figure out the linkage between 'walls' in an educational context with children aged 5-6 from the phenomenological perspective. Phenomenology which has been founded by Husserl, aims to study subjective experience and the structures of consciousness (Eagleton, 1983) since Husserl believes that objects in the external world, do not exist independently. The way that humans as subjects, perceive and experience objects, or the way that objects appear in the human mind, is what phenomenology aims to investigate. Thus, the phenomenological approach can be used in fields like architecture where the objective is to comprehend the human experience.

Regarding phenomenology, the thesis aims to outline 'what' and 'how' (Moustakas, 1994) students-aged-5-6 think and understand the 'school wall'. The phenomenological approach provides the opportunity to describe the meaning for several individuals of their lived experiences of a concept or a phenomenon (Creswell, 2007, p.57). Via phenomenology, it is possible to look in-depth into a child's perception of a wall, which since birth, every kid has experienced in common. The reason for choosing phenomenology as an approach is also due to its attempt to find a way to represent lived-experience (Wills, 2001) of an individual as a subject, towards a selected phenomenon by reducing individual experiences, to grasp the nature, or essence of the phenomenon (Creswell, 2007, p.58. Van Mannen,1990). While choosing phenomenology as an approach to study in qualitative research, identifying 'phenomenon' is crucial (Creswell, 2007, p.58. Van Mannen,1990). In this thesis, 'wall'

or ‘wall perception’ has been identified as a common phenomenon that all students experienced it. To examine the consciousness of someone else and the assumptions that they formed in their mind, their experiences would be studied, as the philosophical theories are based on the study of lived-experience that are conscious ones (Van Manen,1990). The most important inquiry in this approach is to find out what all participants have in common while experiencing a phenomenon (Creswell, 2007, p.58). By using a phenomenological approach thesis attempts to discover the in-depth and subjective perceptions and experiences regarding ‘school wall’ as a phenomenon that all participants have experienced in common. During data collection, Husserl's concept of 'epoche' or 'bracketing' is considered; the study attempts to set aside existing assumptions, preconceptions, and predefinition to take a new look towards 'walls' (Moustakas, 1994). This means that the researcher’s own knowledge, experiences, or some established definitions that are known by architects and professionals will be left out, such as the definitions of a wall as a border, a space separator, a threshold, or as having certain meaning-gain properties such as transferring the sensation of protection, isolation, concentration, etc.

The data collection method of this investigation is through field observation of children and conducting a semi-structured interview with them. According to articles (Creswell, 2007) written about the methods of a phenomenological approach in collecting data, in-depth or multiple interviews are preferred to use, since an in-depth interview is a way with which phenomenologists can figure out someone else inner experience about a phenomenon. Semi-structured interviews are undertaken in this thesis, through which children are asked to give responses to several questions to shed light on their perceptions of the phenomenon. Besides, according to Shutz (1972) and Van Manen (1990), to explore an individual’s experience of a phenomenon, asking them to write down their experiences is the most straightforward way to reach the essence and nature of their experiences. The thesis framework, on the other hand, was founded on the idea that children between the ages of 5 and 6 are just starting to read and write, and therefore conducting research by asking them to write their thoughts and feelings/experiences with school walls may not be suitable. The data gathered from observations is analyzed by reducing the information (phenomenological reduction) to reach significant statements of the pupil’s experiences. Afterward, the prepared

statements are then combined into themes. The study analysis collected observation data in two aspects of 'what' and 'how' concepts; textural description; what participants experienced of phenomenon (what students experienced of walls), and structural description; how they experienced it in terms of conditions or context (how they experienced walls in an educational setting). Finally, textural and structural data will be combined to reach an overall 'essence' of experience (Creswell, 2007, p.60). In addition to data gathered from observation, to grasp the essence of a phenomenon from the perspective of children, data acquired through semi-structured interviews were analyzed using NVivo software. Rereading the transcripts and the verbal representation of the children's perceptions and explanations, certain codes have been generated depending on how they described the phenomenon.

1.6 Limitations of the Study

This thesis has three major limitations; selected school, walls, and age group of children; which should be acknowledged and considered. These limitations have led the thesis to concentrate more precisely on a more specific area of study. Initially, as the research cannot cover and investigate child experiences of walls in all schools, analysis is limited to conducting the investigation in Bahçeşehir College Preschool which is considered as the case study, located in Istanbul-Turkey. Besides, to avoid dispersion of the main discussion of the research, school outer(external) walls and to have more focused research, yard walls are considered the study's limitation, implying that the study will concentrate solely on internal walls or partition walls. The research's ultimate objective is to examine students' lived experiences of walls and school walls. Although the purpose of the thesis is to explore pupils' lived experience of internal walls, yet it was not possible for this study to conduct the research among different ages of students so it focused just on a specific age range which is children aged around 5 to 6.

The reason for selecting children aged 5-6 is based on the belief that Piaget discussed. According to him, after the age of seven, children can begin to utilize inductive reasoning, which involves drawing conclusions from other observations to

generalize, and they can have the necessary logic to develop cognitive operations (Shaffer, David R, 2009). Also, in the final stage of Piaget's cognitive development, individuals gain the ability to "think more rationally and systematically about abstract concepts and hypothetical events". So, this study focuses on the lived experience of students aged around 5-6 years old with walls since at that age human mind and attitude are more flexible and they cannot have a generalized rational awareness of what is the wall and what is school wall. In other words, local/global/environmental definitions of phenomena such as walls/school walls might not be stabilized yet perfectly and completely in their mind. However, according to

Piaget, child cognitive development reflects children's efforts to understand the world and emphasizes different stages of thinking resulting from their changing world attitudes (Kail, 2012). That means children at any age can have different viewpoints of word theories and concepts thereby the generalizability of the results to other age groups may be not appropriate and it would need further research to see how children at every age have the perception of walls.

Chapter 2

Phenomenology

2.1 Philosophy of Phenomenology

Phenomenological Movement

This chapter mainly deals with explaining the phenomenological movement, its philosophical history, and significant concepts that Edmund Husserl elaborated on and supported. During the section definition of phenomenology has been investigated from different angles and by various scholars, to understand better the meaning of phenomenology and the role of the phenomenological approach in the investigations. ‘Phenomenological Movement’ is one of the well-known books written about phenomenology by Herbert Spiegelberg in 1960 that introduces phenomenology as a movement and discusses various definitions and comprehensions of this concept. However, the study of structures of consciousness as they are experienced from the first-person viewpoint is known as phenomenology (Smith, 2018). From Rossman and Rallis's (2003) viewpoint, the origin of this philosophical movement as a new tradition of German philosophy is the study of lived experience’s essence. In other words, the ultimate purpose of a phenomenological investigation is description, interpretation, and critical self-reflection on the “world as world” (Van Manen 1990, p. 72).

Besides, in the introduction part of the book 'The Phenomenon of Place' written by Christion Norberg-Schulz, phenomenology is described as an exploration of consciousness and its objects which was initially invented by Edmund Husserl (1859-1938). Norberg-Schulz expressed that phenomenology is more like a "method" by emphasizing the notion of 'return to things’, rather than focusing on hypothetical ideas and mental concepts." (Norberg-Schulz, 1976). According to Merleau-Ponty "...phenomenology can be practiced and identified as a manner or style of thinking..." (Merleau-Ponty, 1962). In the preface of the book ‘Phenomenology of Perception’, phenomenology is described as allowing one to study essences; to investigate the essence of consciousness or the essence of perception. According to the book, this method brings the essence into reality and it does not predict human/world

understanding from other perspectives than their "facticity." (Merleau-Ponty, 1962). There is no one certain and comprehensive definition for the historical movement of phenomenology which emerged in the first half of the 20th century by Edmund Husserl (Smith, 2018). Yet, the creation of philosophy was not initialed by Edmund Husserl as this concept and the term 'phenomenology' had been used before Husserl's first published work about phenomenology (Logical Investigations). Phenomenology was used before in some philosophical texts in the 18th century, by Kant, Hegel, and Bernanto (Moran, 2000; cited in Dowling, 2007).

Through a detailed look into the term phenomenology, investigations revealed that although, Husserl founded the phenomenology movement, yet, this term was created and used before in 1807, by Georg Wilhelm Friedrich Hegel, in the book 'Phenomenology of Spirit'. Besides, in Bretano's unpublished writings, the term 'phenomenology' was used within his notes for the course on Descriptive Psychology that he attended at the University of Vienna in 1888-1889 (Spiegelberg, 1960, p.27). Bretano and his ideas had a significant role on Husserl as he was inspired by some works of his teacher, Franz Brentano, and his oldest student, Carl Stumpf (Spiegelberg, 1960, p.21). In conclusion, phenomenology is not a movement that is limited and defined only by Edmund Husserl. Yet, Husserl is the most prominent philosopher who is known and recognized as the main figure in the origin and development of the phenomenology movement (Spiegelberg, 1960, p.73).

After Husserl developed phenomenology, other pioneers in this field such as Max Scheler and Nicolai Hartmann had their own distinct interpretations of this concept (Spiegelberg, 1960, p.22). This movement initially started in Germany, but during the thirties, the phenomenological movement gradually spread to the West (Spiegelberg, 1960, p.22). In addition to Hegel and Brentano, Carl Stumpf who was a prominent student of Brentano, used consistently the term 'phenomenology' as he believed that phenomenology is a field of study that has a significant place in scientific research. He especially continued to write about phenomenology during when Husserl's phenomenology was already emerging. During the years from 1884 to 1888, he was then joined by Edmund Husserl, who on the advice of Brentano, came to study with him. The relationship between Husserl and Stumpf remained strong even though

when they were apart and this became clear when Husserl committed the "Logical Investigations", his first major phenomenological work, to Carl Stumpf; Husserl dedicated this book as the symbol of his admiration and friendship (Spiegelberg, 1960, p.54). Stumpf utilized the term phenomenology differently from Husserl in that it was more limited in scope, which caused their ideas to be frequently confused. Stumpf's focus in phenomenology was particularly on the raw materials or sense data of our intentional actions, and he did so without Husserl's process of "bracketing" or "phenomenological reduction." (Spiegelberg, 1960, p.65).

In essence, phenomenology refers to the study of “phenomena” (Smith, 2018). This phrase phenomenon originates from the Greek phaenesthai, which means to show itself, and to appear (Moustakas, 1994; cited in Dowling, 2007). The meaning of phenomena is actually ‘appearances of things, or things as they appear in our experience, or the ways we experience things’. Phenomenology is one of the fields of philosophy that is distinguished from ontology (the study of being or what is), epistemology (the study of knowledge), logic (the study of valid reasoning), ethics (the study of right and wrong action), etc. It seeks to study conscious experience as experienced subjectively or from the first-person point of view (Smith, 2018). Phenomenology is also known as a way of understanding that points out the definition and interpretation of human experience, consciousness, awareness, and meaning, especially their undetected, taken-for-granted aspects (Moran, 2000; Van Manen, 2014). Originally, the slogan of phenomenology is “Zu den Sachen” which can be translated as “to the things themselves” (Van Manen, 1990). This historical movement in the philosophical tradition was launched in the first half of the 20th century by Edmund Husserl, and later on, other thinkers pursued their own path within this movement including Heidegger, Sartre, Merleau-Ponty, Max Van Manen, Gadamer (Dowling, 2007; Smith, 2018). Afterward, French phenomenology developed, from 1935, by borrowing some of the German tradition, especially through the interpretations and misinterpretations of Heidegger, Scheler, and Husserl (in that order) by Gabriel Marcel, and Merleau-Ponty, Sartre (Spiegelberg, 1960, p.22).

By the time, other philosophers from Europe, such as Maurice Merleau-Ponty (1908 1961) and Martin Heidegger (1889–1976), altered and defined their own

phenomenological interpretations beyond Husserl's phenomenology which asserted on "consciousness". By phenomenology, Merleau-Ponty stated bodily presence and action in human life and Heidegger explained more about philosophical topics for example the nature of human existence (Seamon, 2018). Merleau-Ponty (1945/1962) mostly focused on the specific way in which the lived body plays a crucial part in human spatiality (Hale 2017; McCann and Locke 2015; cited in Seamon, 2018), and Heidegger (1951/1971) argued that "human-being-in-the-world is always human-being-grounded-in-place", particularly when a place sustains and is constant by engaged caretaking—this is what Heidegger determined as dwelling (Harr 2007; Malpas 2006; Mugerauer 2008; cited in Seamon, 2018). According to Moran, Merleau–Ponty expressed his own way of thinking on this movement and defined "phenomenology of origins" which aims to present a fresh perspective of what one can experience that is not based on pre-reflective experience (Dowling, 2007). Moreover, Martin Heidegger interpreted the concept of phenomenology in another manner (Spiegelberg, 1960) which expressed the meaning of phenomenology is more ontological and he believed the very initial phenomenon in the world is 'being' (presence in the world) (Cohen and Omery, 1994; cited in Dowling, 2007). He is one of the earliest thinkers who attempted to combine phenomenology with existentialism and he argued that to reach the meaning of a phenomenon one should investigate the 'being' of that thing (van Manen, 1990). He published the book 'Being in Time' in 1927 and explained that human consciousness is intertwined with the world of human existence which means they are not repeatable components (Polkinghorne, 1983; cited in Dowling, 2007). So, he proposed the phrase "Being-in-the-world" to state the human presence situation in the world (van Manen, 1990; cited in Dowling, 2007).

In addition to very well-known philosophers and thinkers in the field of phenomenology such as Husserl, Merleau-Ponty, Heidegger, and Sartre, there are other prominent persons (mostly architects) who contributed to the development of this movement. During the late1940s and 1950s, phenomenology was in the central attention of some architects such as Ernesto Nathan Rogers (1909–1969), Jean Labutut (1899–1986), Charles Moore (1925–1993), and Christian Norberg-Schulz (1926–2000). According to architectural theorist Jorge Otero-Pailos (2010), Rogers advanced phenomenology by creating contacts between architects and phenomenologists and he

gathered a small but influential group of young European architects who defined and investigated phenomenology as a framework for rethinking modernism" (Cited in Seamon, 2018). Otero-Pailos also introduced Jean Labutut (1899–1986), a French-American architect, as a significant role in developing phenomenology as Labutut defined phenomenology as a tool for imagining innovative designs that emerged from. Labutut is known as an important person who contributed to architectural phenomenology academically since he was the founder of the first American Architecture doctoral program at Princeton in 1949. Charles Moore (1925-1993), an American architect, is the other key figure contributing to architectural phenomenology as completed a doctoral program at Princeton under this guidance in 1957, which was focused on "Water and Architecture" inspired by Gaston Bachelard. Christian Norberg-Schulz (1926–2000), is one of the well-known architectural theorists and during the 1970s-1980s, was one of the architects who played a significant role in keeping phenomenology vital for architects (Cited in Seamon, 2018).

Husserl's phenomenology

If Husserl's philosophical life has been examined in terms of phenomenology and his perception of phenomenology, it can be divided into three important periods: pre-phenomenological period, phenomenological period as an epistemological effort, and pure phenomenology. Husserl spent major of his time while he was in Halle to study pre-phenomenology philosophy and most of his thoughts based on this period are mostly reflected in the first volume of his book "Logical Investigations". The second phase of phenomenology includes mostly in the second volume of "logical investigations" which is mostly an attempt to understand phenomenology as an epistemological science. And finally, Husserl introduced pure phenomenology in 1906, which can be a foundation for philosophy and science. In pure phenomenology, he created a new transcendentalism and a distinct phenomenological idealism (Spiegelberg, 1960, p.74). Husserl states that phenomenology and pure logic are two related propositions. In his idea, understanding the correlation between subjective experience and objective references related to it can lead people to better understand the human mind as well as empirical phenomena. He also emphasizes that human subjective experience and its objective content are two parallel and reciprocal

structures. In his opinion, the mental action and the objective content of the phenomenon should be studied and analyzed together in order to realize the different aspects of the phenomenon. Husserl defined the parallelism and the relation of two structures as "pneumatic" (content) and "nautical" (action), which are two aspects of human experience (Spiegelberg, 1960, p.103).

Husserl's initial usage of phenomenology refers to ‘descriptive phenomenology of inner experience’, besides the term "phenomenology" in Husser’s own writings first appeared in his independent writings, in a footnote in the Prolegomena's initial edition (1900); phenomenology appeared first in the second volume of the Logische Untersuchungen in 1901, becoming as a title of a newly created and important subject (Spiegelberg, 1960, p.103). Edmund Husserl asserted the psychological aspect of phenomenology and expressed that 'phenomenological psychology' would be like a bridge between psychology and philosophy (Spiegelberg, 1960, p.150). From Hussel's point of view, to better comprehend his philosophical ideas, the relationship between phenomenology and psychology should be clarified (Spiegelberg, 1960, p.146). He argued that a meaningful empirical investigation requires a comprehensive understanding of the intentional structures of consciousness as well as clarifying the essence of psychological phenomena (Spiegelberg, 1960, p.146). There are different concepts of study including pure phenomenology which is concentrated on the essential structures of consciousness, phenomenological psychology which is focused on the study of psychological phenomena subjectively, and empirical psychology which pays attention to the mental entities within the psychophysical body (Spiegelberg, 1960, p.152).

Intentionality

Husserl defined the terminology of "pure consciousness" as the "consciousness as it is in and of itself", released from any intentional contents. He divided consciousness into two; intentional and non-intentional consciousness. He describes the intentional consciousness as the consciousness directed to something else and non-intentional consciousness as not directed into anything at all. In Husserl's idea in order to comprehend the intentional structure of consciousness, pure consciousness must be investigated and studied (Husserl, 1982). In essence, phenomenology investigates the

structure of different kinds of experience including human "perception, thinking, memory, imagination, emotion, desire, and volition to bodily awareness, embodied action, and social activity, including linguistic activity." (Smith, 2018). While working on phenomenology, Husserl proposed a concept with an important place in this movement and named it "intentionality" which refers to the fact that human consciousness is intentional. “Intentionality” is one of the leading concepts/ideas of phenomenology which refers to the structures of various forms of experience. In fact, phenomenologist believes that human consciousness, actions, and experiences are always intentional. Originally, “intentionality“ comes from the verb intention and expresses the situation of human consciousness that is always is 'consciousness of' or 'consciousness about' (Smith, 2018). In the book ' Logische Untersuchungen' this concept is known as a pivotal point as it provides new insights into consciousness in the phenomenological vision. The term and the concept of ‘intentionality' were previously created by Brentano, Husser's teacher, however, Brentano's and Husserl's concept of intentionality is completely different, and it was actually Husserl who developed this concept. The term "intentional" is acquiring the meaning of directedness toward an object in Husserl's definition, while acquiring the meaning of an object's immanence in consciousness in Brentano's explanation (Spiegelberg, 1960, p.107).

Actually, Brentano defined the term "intentional" to describe the immanency feature of the objects in the world. However, Husserl completely eliminated this aspect and instead his ideology of using the term "intentional" was to pay attention to the directedness of consciousness toward objects (Spiegelberg, 1960, p.107). Some of the very core sense of 'directedness to an object' can be recognized for instance in the relation of a person as a subject and its objective referents. For instance, in the terms "consciousness of," "perception of," "joy at," etc (Spiegelberg, 1960, p.108).

The concept of intentionality in Husserl's idea has four main characteristics including intention objectivates, intention identifies, intention connects, and intention constitutes. Intention "objectivates" means an action that refers to the data of the integral parts of consciousness to the "intentional objects." By intentionality, sensory data gained from objects become integrated and related to the intentional object. To

Husserl, this is an objectivation procedure during which the sensory data as raw materials contribute to the establishment of an object which can be called an intentional object. The intentional object gains the ability to be perceived and thought or doubted about (Spiegelberg, 1960, p.108). Afterward, the second characteristic of intentionality is to be identified which means that the consciousness contributes to assigning successive data to the same referents; for instance, assigning several beliefs and experiences to a singular object. In fact, this feature gives the potential to pay attention to the various perspectives, aspects, and stages of any intentional object and see the object as a coherent whole. But, to understand an identical object, one needs to comprehend its related aspects that form its horizon. This is when an intentional object gains its connectedness feature. The expectation that comes into the mind is probably based on experiences and these experiences may not be satisfied as experiences unfold. In summary, Intentional objects foreshadow expectations and enhance understanding and anticipation of experiences. And finally, a new concept of intentions added by Husserl after the Logical Investigations, which asserts that intentions actually constitute intentional objects (Spiegelberg, 1960, p.108).

David Seamon expressed that human beings are not just conscious rather they are conscious of something else, whether an object or a living thing, feeling, idea, etc. Adapted from Merleau-Ponty (1962), David Seamon stated about one of the features of intentionality; "the unity of the world, before being posited by knowledge in a specific act of identification, is ‘lived, as ready-made or already there.” (Seamon, 2018). He also argued that intentionality is the central phenomenological claim which makes it possible to understand experiences as it is already inevitable that human beings are always immersed and entwined in their own worlds (Moran 2011; Seamon 2014). The reason for not being possible to designate phenomena to just a person or just to the world is the interconnectedness and soldering between person and world; in the world experiences of a person is "given" and “interpreted” which means everything is “of the world” but also “of the person” (Compton, 1997; Seamon 2018). Husserl defines the concept of lifeworld which actually links to the everyday, intentional structure of human immersion in the world. An individual’s unnoticed day-to-day life of taken-for-granted things and, thus, hidden as a phenomenon; humans as conscious

beings always inhabit in an experiential world, in a pre-theoretical mode by knowledge on hand, and experienced in unity" (Moran 2005; Seamon, 2018).

Phenomenological reduction or epoche

The purpose of phenomenology is to realize the essence of phenomena through intuitive understanding instead of understanding through pure empirical generalization (Spiegelberg, 1960, p.119). So, in "pure phenomenology" Husserl presented 'reduction' as a method of suspending transcendental claims to get to the pure phenomena. It is also reflected in one of Husserl's books "ideas" focusing on the fact that there is a difference between "pure phenomenology" and empirical psychology. This book can be considered as one of the most important works of Husserl about phenomenology as it contains theory, method, and fundamental insights. While doing phenomenological suspension, objects' existence remains stable in reality, which means the reduction or suspension does not impact the conscious subject own's being, consisting of its components. Even though the validity of its contents has been temporarily suspended, the consciousness that engages in the suspension remains unchanged (Spiegelberg, 1960, p.140).

Moustakas (1994) believes assigning bracketing to the inquiry enables 'whatever or whoever appears in our consciousness to be addressed with openness'. According to Husserl, there are differences between phenomena in terms of their capability to undergo reduction. In fact, he separates the phenomenon in two; the phenomena that reduction can be applied to them and those that cannot. According to him, in the process of reduction, the consciousness remains while transforming any object of our beliefs; he expressed this as absolute and pure reduction, and he called it apodictic consciousness. In other words, this is a situation in which the suspended contents are entirely independent of the consciousness itself (Spiegelberg, 1960, p.140). Moustakas (1994) notes Husserl's epoche concept which actually frees from any suppositions, is a Greek term, meaning to "stay away from" or "abstain" (Steinbock, 1997). The phenomenological reduction can also be defined as a technique that allows a specific described experience to be re-described and clarifies the phenomenon's meaning (Moustakas, 1994; Creswell, 2007). The objective of phenomenology is the return to the concrete, taken by the slogan "Back to the things themselves" (Moustakas, 1994).

In the book 'Back to the things themselves', Steinbock (1997) argued about the concept epoché which is founded by Husserl and involves in suspending pre-existing ideas and presumptions about anything in the world in order to see and perceive it in its true essence. He explained one of the requirements of using this approach in any inquiry is to set aside any prejudices and preconceptions to see the world from a completely new viewpoint (Steinbock, 1997).

"ego cogito cogitata"

By using Descartes' cogito as a starting point, Husserl described the structure of this world as "ego cogito cogitata"; ego is the experience of the subject, cogito is the process of experiencing or the act of thinking, and the cogitata which is the content of consciousness (Spiegelberg, 1960, p.142). Based on Husserl's phenomenology, pure self-consciousness which is actually not related to any physiological or physical (bodily) organism, can be expressed as ego. Cogitations is the process of thinking that contains suspecting, understanding, acknowledging, denying, willing, visualizing, and feeling, among others. The perception or imagination of entities that exist within our conscious experience can be called cogitata, which represent intentional objects or referents of our cogitations (Spiegelberg, 1960, p.142).

Constitution

One of the terms Husserl used frequently is the term "constitution" which initially takes place in the book Ideen (Ideas) without presenting a specific definition of it (Spiegelberg, 1960, p.147). However, apparently, he did this by drawing from the studies of Kant's Transcendentalism. According to Husserl, constitution refers more to idealistic interpretations, as it is not just simply to the static structure of an object, but it is additionally focused on the dynamic process through which it is formed and acquires its own static constitution (Spiegelberg, 1960, p.146).

Intersubjectivity

Moreover, Husserl investigated the pre-predictive experience, mostly focused on perception, which caused him to emphasize the need for intersubjectivity and study this concept more (Spiegelberg, 1960, p.140).

2.2 Phenomenological Approach. According to Moustakas, while conducting qualitative research there are two types of phenomenological approaches; interpretive phenomenology which is mostly close to the works of scholars including Gadamer (2000), Heidegger, Merleau-Ponty (1962); descriptive phenomenology which initially comes from Husserl's studies and it links with transcendental phenomenology (Moustakas, 1994; Lopez and Willis, 2004). In a phenomenological inquiry, scholars develop an interest in investigating subjective lived experiences of individuals under examination (Kvale, 1996; Greene, 1997; Holloway, 1997; Kruger, 1988; Robinson & Reed, 1998; Maypole & Davies, 2001; cited in Steinbock, 1997).

From Husserl's viewpoint, it can be considered a definite that how objects in individuals' minds can appear since objects present in the world independently and so data of objects can be considered as reliable (Eagleton, 1983; Fouche, 1993; cited in Groenewald, 2004). Thus, in order to reach certainty about reality and to return to concrete phenomenology allows to look back to the things themselves by initially defining a phenomenon (Eagleton, 1983, p. 56; Kruger, 1988, p. 28; Moustakas, 1994; cited in Groenewald, 2004). The ultimate purpose of phenomenology is to comprehend the phenomena in its own term in order to provide a description of human experiences as they are experienced through the person" (Bentz & Shapiro, 1998) as well as enabling the essence to appear (Cameron, Schaffer & Hyeon-Ae, 2001).

Moustakas asserted the role of phenomenology as its effort to reveal the essence of a thing by removing presuppositions and prejudgments about that thing by looking at things with an open mind (Creswell, 2007). In fact, using phenomenological approach in research allows one to identify and express different types of meanings of phenomenon which are gained through various lived experiences of individuals. While utilizing phenomenology, the focus point of investigation is on explaining the phenomena that are experienced in common and interpreted same within participants. One fundamental aim of phenomenology is to reach an explanation of a universal essence by minimizing individual experiences of people with a phenomenon. Accordingly, when using phenomenology as an approach for qualitative research, there should be identified a phenomenon (an "object" of human experience; van

Manen, 1990; cited in Creswell, 2007). After defining the phenomenon, the description of the different experiences of participants would be analyzed through a method of 'what' and 'how'. All participants were required to respond to the question of what they experienced (with/about phenomenon), and how they experienced it (Moustakas, 1994).

Chapter 3

Human Perception and Physical Environment

3.1 Human Perception and Personality

There are scholars in the field of psychologists, socialists, and social scientists who have concentrated on the linkage of culture with human perception as well as whether culture influences human personality (Segall et al., 1968; Wang, Q. 2006; Wober, M. 1974; Triandis, H. C. & Suh, E. M. 2002; Tsai, J. L. 2007; Wade, C., & Tavris, C.1994; Linton, R. 1936,1945; Walters, 1994; Kelland, 2010). According to a book in the title "The Influence of Culture on Visual Perception," the authors presented an argument for the role that culture plays in shaping human visual perception. Through their study, not only they found that person's perception can be influenced by their physical environment, but also, they also asserted that a person's perception can be influenced through cultural dimensions (Segall et al., 1968). In this regard, it can be said that culture and physical environment are two interconnected notions. Studies attempted to acknowledge that culture has the potential to influence human individual behavior, personality, and the way humans perceive the world. Although all too many researchers have focused on the connectedness of culture and human personality, each has a particular area of focus. There are also other studies focused particularly on the great impression of culture on shaping individuals' understanding of themselves, and development of self-knowledge, Wang, Q. (2006); Human cognitive development and intelligence, Wober, M. (1974); role of cultural context in personality development, Triandis, H. C. & Suh, E. M. (2002); role of culture factors in understanding and studying human emotional experiences, well-being, and behavior, Tsai, J. L. (2007); significant impact of culture on gender roles and social expectations, Wade, C., & Tavris, C. (1994) different cultural factors such as religion, gender, age, and race influence human personality, Kelland, (2010).

Yet the book "The Influence of Culture on Visual Perception" specifically focused on the correlation between culture and perception which is the most essential part to acquire data in this thesis research since it relates to human perception. The

book acknowledges that human perception is assumed to be universal which considers the concept of perception as universal and discusses the importance of taking cultural and ecological elements into account. They concluded that for all mankind, the basic process of perception is the same; only the contents differ. They asserted that cultural differences impact human perception not because of people's racial differences but because of people's experiences. On the other hand, they discussed that individuals' perceptual interference habits influence human perception itself which means, human perceptual inference habits are based on the human mental process with which our senses gather data by categorizing and giving patterns to them. In other words, different cultures or social groups may have different tendencies or preferences in how they interpret and conclude sensory data, resulting in differences in perceptual inference habits across societies (Segall et al., 1968).

After bearing all of them in mind it can be said that 'human perception' as an object contains a common framework for all human beings. For instance, Piaget's 'cognitive development' which is an ongoing process starting from born to the end of life has a fundamental and common pattern within all human beings. While the perception process is universal, the contents of perception can alter regarding human experience variation. The factors that contribute to having different experiences are based on our individual and cultural experiences including cultural norms, social conditioning, and perceptual inference habits.

Carl Jung, a Swiss psychiatrist also developed the concept of 'collective unconscious' which is shared by all individuals within a particular culture or society. From Jung's perspective, the collective unconscious includes innate, universal patterns, symbols, and instincts that are inherited and also common to all human beings. He believes that there is some information also exists in the world which is not acquired through individual experiences rather they are in a deeper layer of the psyche that transcends individual consciousness (Walters, 1994). Jung argued that the human unconscious is divided into two parts; personal and collective. The personal unconscious is based on human individual experiences, yet, the collective unconscious contains universal content that embodies all humans. Besides existent cultural-social factors, Jung insisted on the importance of parent-child interaction in his idea as a

crucial factor in the formation of human behaviors, beliefs, sense of self, and values (Walters, 1994). Additionally, he believes the collective unconscious itself is formed by the combination of knowledge and assumptions that are common and shared among all human beings due to ancestral experience.

Accordingly, Winnicott 1960 believed that the development of children's (since born) personal existence is highly dependent on parents' involvement in children's personality creation. He specifically insisted on mothers' crucial role in a child's personality development in terms of their child-care quality. Infants with adequate care which is received from their mother, are able to have personal existence, and they start to build 'continuity of being'. In opposition to that, there is no continuity to being if infants or children do not receive adequate parental care and they do not come into existence. In this case, personality of humans is built based on reactions to environmental impingement (Winnicott, D. W., 1960). Not only genetics have a strong correlation with human personality, but also it highly impacts associations between personality and human well-being or human life satisfaction (Røysamb et al., 2018). One of the studies which focused particularly on genetic and environmental factors have been concluded that both environmental and genetic variables operate to shape human interests, and attitudes (Waller et al., 1990).

Linton (1936) argued that “different societies seem to show differences in the relative frequency of occurrence of the various psychological types”. He actually has a perspective that a variety of aspects are involved in the formation of human behavior and personality and he insisted on dynamic cooperation between biology, culture, and society. Followingly, Bandura and Walters (1963) were scholars who emphasized the important role that social learning plays in personality formation. Albert Bandura (1999) Canadian-American psychologist, founded 'social learning theory' (SLT) and 'the social cognitive learning theory' (SCLT) which is the developed form of his first theory. He delved into social content influencing human behavior by proposing cognitive theory in three main factors; environmental, personal, and behavioral (Bandura, 2002). From his perspective, every individual always has been in a two-directional interaction between self and society with bidirectional influences on each other.

In summary, the scholars' works collectively highlight the role of several propositions including environmental, social, cultural, parental, and genetic in shaping human personality, behavior, and perception. Although there may be differences in the specific areas of investigation, a common thread found throughout the studies is the acknowledgment of environmental impacts and the dynamic association of environmental (external) propositions with the human itself as being (internal). It can be concluded that human personality formation and human world perception are highly intertwined with several propositions. However, despite of direct influence of environmental factors on human personality, human 'unconsciousness' is believed as always been influenced by factors since our born.

3.2 Physical Environment and Human

"*We know not through our intellect but through our experience.*"
— Maurice Merleau-Ponty

Within this chapter, an investigation is accomplished to explain the physical-environment/built-environment in order to understand how it is related to human beings. The purpose of this section is to figure out if there is a connection between the physical environment and phenomenology. To do so the chapter attempts to bridge these two notions since in defining both a physical environment and phenomenology, human perception, and experience play a common and important role.

The field of research that is focused mainly on the impact of physical aspects of the environment on human behavior is described as environmental psychology, first established during the 1950s and 1960s. The ultimate goal of this field of study is to understand the relationship between human behavior and the environment. This is a field of study that allows people to perceive through the senses, and comprehend in terms of its physical space, regardless of its formation and size; whether it is created by people or a natural space, and whether it is small or large in scale (Craik, 1970; cited in Bonnes & Bonaiuto, 2002). According to scholars, while investigating the link between the physical environment and human behavior, two aspects are identified regarding their priority (Craik, 1970; Stokols, 1978; Wohlwill, 1970; cited in Bonnes

& Bonaiuto, 2002). One of the situations is when the physical environment is considered first and human behavior is studied later as a "result" of the physical environment; therefore, studies have arisen related to "reactive forms," which are the result of psychological processes. The other association between physical environment and behavior is when the natural environment is considered, and human behavior is primarily formed as a "cause" of this physical environment; this is the case that led to the creation of "active forms" of psychological processes such as "operative" and "interpretative" studies (Bonnes & Bonaiuto, 2002).

According to Proshansky and Fabian (1986), characteristics of a physical environment are able to impact individuals' behavior and their experiences of the space indirectly; "without their awareness" (cited in Bonnes & Bonaiuto, 2002). When studying the physical features of a place the concept of built environment and its effects on individuals' minds and their senses is the central focus point in the investigation. According to Russell & Ward (1982), it is considered as experimental element of the geographical environment and contains 'individual' and 'collective' dimensions which are divided into three aspects; "(1) spatial-physical properties, (2) activities, and (3) cognitive and evaluative experiences or meanings" (e.g., Relph, 1976; A. Rapoport, 1982; cited in Bonnes & Bonaiuto, 2002). This is actually the reason for distinguishing behaviors in different places; human behavior occurs in a place or the behavior of people linked to a place would be in a different manner in a different place (Bonnes & Bonaiuto, 2002). In fact, human behavior and activities can be formed and occur completely regarding to a specific location they exist in, and the features of the location are essential part of human's behavior and perception (Canter, 1986; cited in Bonnes & Bonaiuto, 2002). Throughout the previous 30 years, there has been considerable enhancement in the field of environmental psychology, expressed in four specific aspects as follows:

1. Particular focus on the spatial-physical feature of the environment in which human behavior takes place
2. Presentation of various research methods that contributed to this field
3. Being organized when facing social relevance problems

4. Research with an interdisciplinary attitude. (Bonnes & Secchiaroli, 1995; cited in Bonnes & Bonaiuto, 2002)

Besides the impact of the physical environment on humans' mental through their senses, in the field of philosophy the concept of 'phenomenology' often refers to expressing the sensory experiences of hearing, seeing, and other senses. Therefore, in phenomenological studies, there is a much wider scope dealing with the perceptions and meaning of things that one can experience, particularly the importance of other things such as objects, events, tools, the self, progression of time, as they comprehend through sensorial experiences which in phenomenology can consist in persons "life-world" (Smiths, 2018). The term life-world is inputted as one of the philosophical and social vocabulary of the 20th century which was initially published in one of the Edmund Husserl's books titled 'The Crisis of European Sciences and Transcendental Phenomenology', in 1936. Husserl described the concept of life-world to highlight the intersubjective aspect of human understanding that primarily expresses the significance of scientific knowledge objectification (Harrington, 2006).

In an environment-behavior examination, one of the main focuses is on humans' experience of place which phenomenologists consider as one of the significant aspects of the lifeworld (Barnes, 1992; Boschetti, 1993; Bolton, 1992; Chaffin, 1989; de Witt, 1991; Hester, 1993; Hufford, 1988; Million, 1992; Oldenburg, 1989; Pocius, 1991; Porteous, 1989; Relph, 1992, 1993; Seamon, 1992, 1993; Sherry, 1990, 1998; Smith, 1989; Tammeron, 1995; Weimer, 1991; cited in Seamon, 2002). Yet, according to Seamon (2002), the lifeworld where the experience occurs is usually hidden from the individual eye, no matter how the form of experience is; ordinary or extraordinary. This is due to the fact that basically, individuals' experiences are not considered as an object of conscious awareness in their lifeworlds. The reason underlying why experiences do not appear in human sight is a feature of experience that just happens while individuals are not aware of how they happened differently (Seamon, 2002).

There are scholars who investigated how features or characteristics of an environment can lead to specific lifeworld experiences for an individual. For instance; Behnke (1990) and Rehorick (1986) explored the experience of earthquakes from a phenomenological viewpoint; Hill (1985) investigated blind person's lifeworld;

Toombs (1992a, 1995a, 1995b) applied her own experience of chronic progressive multiple sclerosis for the presentation of a human experience of disability from phenomenological perspective (Seamon, 2002). In philosophy, Casey said "to be is to be in place" (Casey, 1994) and published two book-length during the years 1994 and 1996 which discussed place and described it as an essential ontological foundation of human experience. Perceiving from Merleau-Ponty (1962), Casey stated the significance of place as a central ontological structure of being-in-the-world, as well as the reason for the process because of individuals' existence as embodied beings (Seamon, 2002). Actually, what Casey meant clarified with his other phrase that assumes people are "bound by body to be in place" (Casey, 1994). This idea is connected to Merleau-Ponty's concept titled “body subject” which asserts on pre-cognitive intelligence of an individual's body that is expressed through their action. The concept of “body subject” explains about individual's pre-reflective layer which contains the taken-for-granted physical movements, gestures, and ordinary routines (Ediger, 1994; Hill, 1985; Seamon, 1979; Toombs, 1992a, 1995a, 1995b; cited in Seamon, 2002).

It is important to bear in mind that there is a strong correlation between physical environments as place and people. Phenomenologically, 'place is not the physical environment distinct from the people associated with it'. The presence of places alone without the existence of a human is meaningless in phenomenology. Heidegger (1951/1971) explained that 'human-being-in-the-world' is always 'human-being-grounded-in-place', especially as that place sustains and is sustained by engaged caretaking (Harr 2007; Malpas 2006; Mugerauer 2008). In the book titled ‘Phenomenology of Perception’, Maurice Merleau-Ponty defined phenomenology as the study of essences, including the essence of consciousness and of experience (1945). He does, however, assert that phenomenology can be used to describe the way that our perceptual connection with the outside world is structured. In his viewpoint, phenomenology is a way to describe the nature of our perceptual interaction with the outside world (Maurice Merleau-Ponty -1945). And the goal of phenomenology is to directly describe human experience and their perception of world. People's cognitive experiences of the world—which are generated from their place of birth, culture, family, education, as well as any other factors that can affect

a person's mind and personality—are closely correlated with how they perceive the world. From the viewpoint of Edmund Husserl and Merleau-Ponty phenomenology is the study of essences, including the essence of consciousness and of experience.

3.3 Physical Environment and Child Development

The term "child development" comes from some aspects such as the physical, mental, and emotional changes of a child which its process goes through from infancy through adulthood (Levin, 2011). A child starts engaging and interacting with the surrounding environment as soon as they come into being. An infant is a ‘being’ who has existed in an unknown space without any information or capacity to think about when he/she is born. Children constantly utilize this unknown world as a space to explore, learn, and invent, and thus they gain experiences. Their existence in the world through their dynamic tendency to discover things is the process of a child's development (Moore, 1987). According to Vygotsky's viewpoint, a child's mental growth and perception process is highly dependent on the environment in which they interact' (Kozulin, 2003). Jean Piaget, a pioneering psychologist in his field who made significant advancements and contributions related to children's psychology and education, also knew environment as the key factor with which a child is capable of gaining more information and thus gaining more understanding and perception. He claimed that by passing time, a child's mind starts to develop a structured pattern based on their interactions with their environment and the experiences gained from their surroundings. Additionally, he asserts that developed patterns of mind are able to impact their way of thinking as they get older and more involved in their lives (Piaget, 1997).

Yet, in addition to mental development in the child development process, their physical and psychological background as well as the characteristics of the physical environment have strong relation with how children perceive the built environment (Özmen Gür, Zorlu, 2002). Children's age, physical development, previous experiences, cultural and economic background, language, education, and other aspects may additionally impact the extent that children understand and recognize where they exist. These backgrounds occur in the child psychologically, either directly

or indirectly, as a result of the child's cognitive development, and influence their behavior in terms of how they come up with phenomena (Yavüzer, 2000). Some behavioral characteristics gained by children such as self-confidence, safety and comfort, and relationship to their environment which are socio-emotional, have been linked with the process of their development (Gür, 2014). In this regard, Maxwell and Chmielewski (2008) asserted the influence of healthy socio-emotional development on child's whole life during which the design of the physical environment has a notable portion.

However, in addition to the physical interaction of a child with the environment, the child's mind can be known as the initial and the most critical factor of development. Every 'human being,' even if they lack one of the five human senses (sight, hearing, taste, touch, and smell), could perhaps think and have thoughts about anything in the world. This theory also can be true by referring to the 'Cogito' from Descartes which he believed human senses can all be deceiving, so he asserted 'I think, therefore I am'. Yet, humankind's thinking itself follows a constant development since born. According to Piaget (1997), as a child grows up, the way a child starts to think, and perceive; and the patterns she/he gains to perceive the world changes. The more interaction children make with things around them, the more intelligent they become. The dynamic tendency of children to seek knowledge and learn is an ongoing process until adolescence. Piaget believes this ongoing process of learning is inseparable from the development of intelligence. That learning process leads humans (from childhood to adolescence) to gain the ability to gather, save, and sort knowledge in their minds, which is known as 'cognitive development', a process involving the growth of the mind's cognitive part that occurs over time (Piaget, 1997). In other words, human cognition capabilities and intellect are exceedingly correlated. As a person interact more with the built environment around them, their awareness of it improves, as does their intellect, which surpasses the level at which their mental capacity for cognition has developed. Over time, children will be able to understand and have a more comprehensive perception of the extra challenging and complicated phenomena in the world only when their intelligence and cognitive capacities expand (Butterworth, 2014).

3.3.1 Cognitive Development of Child

The word ‘cognitive’ means ‘connected with mental processes of understanding’; ‘connected with thinking or conscious mental processes’ (Oxford, Cambridge Dictionary). According to Jean Piaget's theory of cognitive development (1997), as children grow, their intelligence varies. As children grow up, they spend more effort to understand things and they attempt to interact with them. Children gradually learn and understand things. From the perspective of Merleau-Ponty, in order to have a comprehensive understanding of the concept of 'development', being aware of the distinction between 'learning' and 'maturating' is important. He believes that a child's internal or innate factors are the child's development of maturation; the external or acquired factors are the child's development of learning (Merleau-Ponty, 2010). Besides, understanding and perception are included in the human cognitive process while having a perception of things is different from just understanding.

Dunker is who defined the term 'understanding' for the first time through the concept of gestalt (Brudnyy, 2002; Leontyev, 2005). The term 'gestalt' means "a set of things, such as a person’s thoughts or experiences, that is considered as a single". The origin of this word comes from the 1920s, from German Gestalt with the meaning of ‘form, and shape’ (Oxford Dictionary). So according to Dunker, it can be said that, when a person has a thought about one phenomenon with having an experience related to that phenomenon, she/he has reached a level in the cognition development process and he named this level of awareness 'gestalt'. He believes 'gestalt' or 'understanding' refers to the perception of the experienced visual form of anything; perception is the process through which an object's information is transferred to a person via their senses, whereas understanding goes beyond perception and actually incorporates perception into it. In his theory, humankind will be able to understand a thing truly, only when she/he perceives it as a whole, and having a holistic viewpoint will aid people to organize and interpret sensory experiences into meaningful patterns or wholes; such as making patterns for realizing a thing's place and function (Brudnyy, 2002; Leontyev, 2005).

In Piaget’s idea, the way children construct those patterns and knowledge is through their dynamic actions and actively engage with both the physical and social

world in order to have a sense of it. He claimed that those patterns had been constructed in human-mind in a structured process called 'constructivist' which is a process of adaptation or which is an approach of the mind toward facing unknown knowledge in the world (Piaget, 1964). When a child encounters/sees/experiences an unfamiliar thing, the newly acquired information becomes integrated with her/his previous cognitive pattern or schema; this process has been termed 'assimilation'. After integrating new information into the existing schema of the cognitive part, 'accommodation' occurs which is the modifying process of the existing schema with new knowledge that the child gains again (Piaget, 1964).

When a child sees a dog for the first time, naturally their cognitive mind tends to have a cognition of it, so the child's mind will receive any information that the dog may contain such as its sound 'bark', its physical appearance like having four legs and fur. As a result, at this level of conscience child constructs a structure and pattern for her/his new information. By referring to 'constructivist' theory, this process can be called assimilation. If that child after seeing a dog for the first time, sees a cat, they may incorrectly refer to it as a dog; since they are not comprehensively conscious about everything yet, and their cognitive has not developed yet; cat as an animal matches the criteria and schema child had developed before; having four legs or fur like a dog. Yet over time, or by the correction of parents the child will be more aware of details or the differences between a dog and a cat both as animals; this process of cognitive development of the child can be called 'accommodation' with which the child gets the ability to modify her/his existed schema.

In order to reach an understanding of things that exist around, children's cognition develops which is not simply about learning knowledge. Children also need to build or develop a mental model of their surroundings (Miller, 2011) which occurs in stages from Piaget's perspective (Figure, 1); he explained that children’s cognitive development occurs in four stages (Papalia & Feldman, 2011). The four stages which Piaget and Inhelder (1967) classified from when a child is born to +12 age include; the sensory-motor stage from 0-2 years, the pre-operational stage from 2–7-year-olds, the concrete operational stage from 7–12-year-olds, and formal operational stage from 12+ year-olds (1986, Vygotsky).

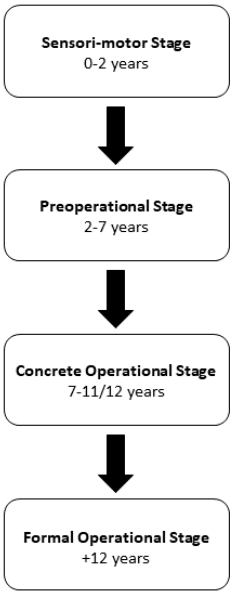


Figure 1. (Illustrates Piaget's four stages of Cognitive Development of child) (Image created by author)

In the 'sensorimotor stage', children via their intuitions and senses interact with the outside world (Wilson, 1995). In the 'preoperational stage', children start to represent objects and occasions with symbols and words and classify objects in groups while behaving in an egocentric manner (Hart and Moore, 1973). In the 'concrete operational stage', children form the ability to turn intuitions into operations, can add, subtract, classify and put objects in order depending on their personal experiences, start to understand and feel empathy for others' thoughts, and show a more adaptive behavior to their environment (Piaget and Inhelder, 1967). Finally, in the 'formal operational stage', children develop a systematic attitude that they can use cognitive operations to tackle problems, so they can use conceptions and symbols without residing in concrete issues (Hart and Moore, 1973).

Chapter 4
Educational Environment and Children

4.1 Physical Environment of School and Child

After home, educational places, divided as kindergartens, preschools, schools, etc., may be considered as a place in which children spend most of their time and that places have the potential to give a sense of their second home, especially during childhood. It is undeniable that a child starts learning from their direct experiences gained from interacting with the surrounding environment (Dudek, 2000). According to Piaget, children older than 4 years continue to develop sensorimotor schemes applicable to a wide range of objects, improve skills in language, and acquire mental representations for an increasingly large portation of the surrounding world. (Ginsburg and Opper 1988). Children of primary schools are identified as having a critical period for self-development, and throughout this process, the physical environment, including its design, or the components that contribute to the design of that environment, has a significant impact on their self-development (Maxwell and Chmielewski 2008). The physical environment impacts human behavior mechanisms and their perception directly or indirectly (Türel & Gür 2019). In one of the studies by Türel & Gür (2019), primary school buildings with flexible structures discussed and expressed these types of buildings are able to be quickly modified and can possess a valuable effect on children's physical and cognitive development. Bearing all these in mind, the design of the physical environment of an educational institution may be considered one of the most critical factors which have been expected to respond to the child's fostering engagement, learning process, discovery, and experience in addition to their basic needs. Besides, primary school buildings are specifically crucial since it is a location which students' presence for the first time in a place with diverse age groups and social activities.

Any educational institute in addition to the consistency of its contribution to children's academic achievements is expected to have an influence on student's behavior, attitudes, cognitive development, and the potential to improve children's

overall outcomes (Clark, 2002). A study done by Gregory, Cornell, & Fan, (2011), revealed that no matter what the form of a school is, this environment impacts students' school outcomes, and academic achievement, either directly or indirectly. In order to explain how students perceive their learning environment in any aspect, they created the school climate hypothesis. This theory states that a school's learning environment is constructed through the interplay of different elements, such as academic safety, community, activities, and institutional environment, both of which have a remarkable effect on students' psychology, behavior, and cognitive development.

In another study, Moore (1986) concluded that children demonstrate considerably higher exploratory behavior, social engagement, and cooperation in spatially well-defined learning settings. He suggested a few elements that help a space be more clearly defined including partially surrounding walls or movable furniture to divide a space into smaller areas to accommodate different group sizes. He also described some changes which also can define a well-defined space except to walls and furniture including changes in the texture and materials, changes in level either on the floor or the ceiling, utilizing lights to define a well-defined space, as well as determining boundaries defined by the arrangement of active visual elements such as posts, columns, or other (Moore, 1986).

Lewinski (2015) in an investigation examined the impact of specific classroom characteristics on students' learning processes and outcomes. This study focused mainly on environmental factors such as acoustics, light, color, temperature, and seat arrangement with the influential factors affecting the learning process being noise, temperature, and seat arrangement. Another study related to the physical environment's characteristics explored the impact that distinguished the space, by changes in ceiling height and wall color, that impacted children’s cooperative behavior. Scholars in this research conducted an examination among thirty preschool children who experienced four different spatial conditions in small groups. As a result, the study's variance analysis indicated that variations in ceiling height or wall color contributed to higher levels of cooperative behavior conduct among preschoolers (Read, Sugawara, & Brandt, 1999).

In one of the most related articles titled ‘'Children as interior architects: creative

learning and exploration of classroom furniture" (Atmodiwirjo et al., 2014), scholars attended to make children think about how can be their dream classroom. To accomplish this, they asked the students to rearrange the furniture in the room, such as the benches or the blackboard (if it is moveable). In order to find out more about their desired classroom scholars asked them to imagine a classroom interior based on their favorite places. This workshop provided opportunities for the kind of creative learning that develops children's ideas, identifies their needs in terms of everyday behaviors, and enhances communication and teamwork. Yet students' responses and their ideal classroom were thought-provoking thus their responses will be evaluated in this thesis from another perspective.

4.2 School Buildings

Public education plays a fundamental role in democratic societies, with educational buildings serving as not just places of learning but also symbols of shared societal values (Baker, 2012). Throughout history, architecture has been the topic of continual debate and innovation, developing to reflect changes in the political, social, and technological landscapes as well as changing notions about what defines an effective educational environment (Baker, 2012). Baker emphasized the consistency of certain traditional ideologies that have endured since more than a century ago such as building layout and heating procedures despite school designs that have been attempted to be developed to accommodate new educational concepts. Historically, these architectural choices have been influenced by ideas like simplicity, durability, and character expression. Thus, according to Baker, many academics and researchers have promoted a variety of design methods and approaches, ranging from open-air concepts to multipurpose spaces. Baker inserted that, school design has not changed much despite technological advancement and modern pedagogical approaches; architecturally many school designs have remained rooted in the past and still align with the ideologies of over a century ago. Baker explained these buildings which are often characterized by their dependency on natural light, heating with oil and coal furnaces, and a culture in which pupils were expected to be seen but not heard, the historical trajectory of school architecture into question. This historical journey

indicates an in-depth investigation, standardization, and purposeful design approach in school construction (Baker, 2012).

As mentioned previously, early educational pioneers and architects displayed a strong dedication to creating appropriate school environments, perceiving them not merely as places for education but also as enduring symbols of culture and valuable community resources (Baker, 2012). Later, when the twentieth century arrived, a prominent figure highlighted the importance of simplicity, dignity, and the use of long-lasting materials to ensure safety and convey the building's distinct character (Mills, 1915, as referenced in Baker, 2012). However, early school buildings did not always align with these principles. They were frequently poorly located, exposed to external disturbances, unattractive, and sometimes even repulsive in both appearance and functionality (Barnard, 1842, as cited in Weisser, 2006, as cited in Baker, 2012). Recognizing these weaknesses, early educational reformers like Horace Mann put forward models for the standard adequate classroom, calling for rows of desks, ample windows to facilitate natural lighting, and various other essential amenities (Baker, 2012). These historical perspectives underscore the evolving priorities in school architecture, with a specific focus on durability and simplicity in designing the building of schools which led to the development of standardized layout of school building.

Schools built from the late 19th century to the early 20th century were primarily designed to be standardized and practical. These buildings aimed to accommodate as many students as possible while maximizing classroom space. The mention of a drawing from England in (Figure, 2) likely serves as an illustration of the ideal layout for such schools, emphasizing efficiency and functionality in their design (Baker, 2012).

A later period in the history of education where a new generation of school reformers, including notable figures like Maria Montessori in Italy and John Dewey in the United States, became prominent. These reformers advocated for child-centered learning approaches and introduced educational ideas that have had a lasting impact on modern educational thought (Hille, 2011; Cited in Baker, 2012).

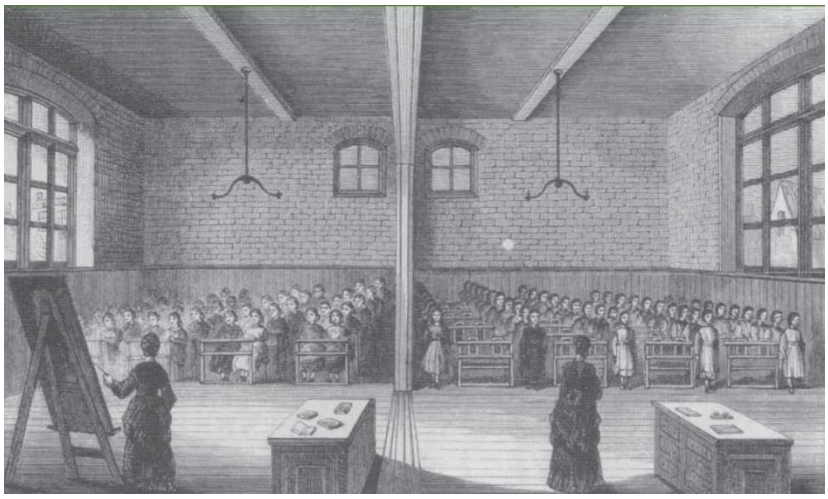


Figure 2. (Illustrates a classroom layout that closely resembles the British ideal from the turn of the century)

Source: Dudek, 2000

In the 1920s and 1930s, a new wave of "progressive" schools emerged, driven by educational visionaries and architects. Architects such as Eliel Saarinen, Alvar Aalto, and Richard Neutra played a significant role in designing innovative school buildings during this time. These schools were part of the "open-air school" movement, which emphasized the importance of features like fresh air, natural light, outdoor learning spaces, and easy movement within the school buildings. Additionally, these schools were considered "functionalist" because they prioritized factors like fresh air, outdoor activities, and physical health as essential components of mental well-being.

During the 1930s, there was a growing emphasis on standardizing school facility management and construction. This led to the establishment of the National Council on Schoolhouse Construction, which eventually evolved into the Council of Educational Facility Planners International, a trade group dedicated to school building design and maintenance. besides, this period saw an increased interest in understanding the psychological effects of school buildings, particularly in the context of open-plan school designs that prioritized child-centered design (Baker, 2012). In essence, the 1930s marked a turning point where architects and scholars recognized the need to redesign school buildings to align with evolving educational methods, promote child-centered design, and standardize construction practices.

The period following World War II through 1964 when approximately $20 billion was invested in constructing new educational facilities in the United States (National Council on Schoolhouse Construction, 1964). During this time, the student population saw a significant increase of 2.3 million students in just a decade, from 1958 to 1968. Tanner and Lackney describe this era as the beginning of innovation in educational architecture. However, many school boards struggled to keep up with rising enrollments, missing opportunities to create better school facilities (Tanner & Lackney, 2005). Architects during this period believed that modern school construction, featuring lightweight materials and innovative building technologies, was more cost-effective and easier to build compared to traditional brick schoolhouses. Even though these modern schools had a shorter lifespan, proponents argued that periodic rebuilding was an acceptable trade-off. Hille's observations support the favorable attributes of these modern schools, emphasizing their cost-effectiveness and adaptability (Hille, 2011). On the educational side, researchers began to recognize the connection between school facilities and student learning. In the last decade of the period, educators began to acknowledge that various aspects of the physical environment could impact students' behavior and attitudes. This growing awareness may have stemmed from the field of environmental psychology's emergence and the rise of two controversial educational movements: open-education classrooms and open-space schools, both of which implied new approaches to utilizing classroom space (Wienstein, 1979).

Educational Facilities Laboratory (EFL), was a significant player in the field of school design during the 1970s. The EFL was a research organization funded by the Ford Foundation from 1958 to 1977, and it is known for its innovative research on school facilities. One of its notable contributions was the promotion of open-plan schools, also known as open-space schools. An example of this open-plan school layout is illustrated in (Figure, 3), which represents the floor plan of the Disney School in Chicago, designed by Perkins & Will in 1960.

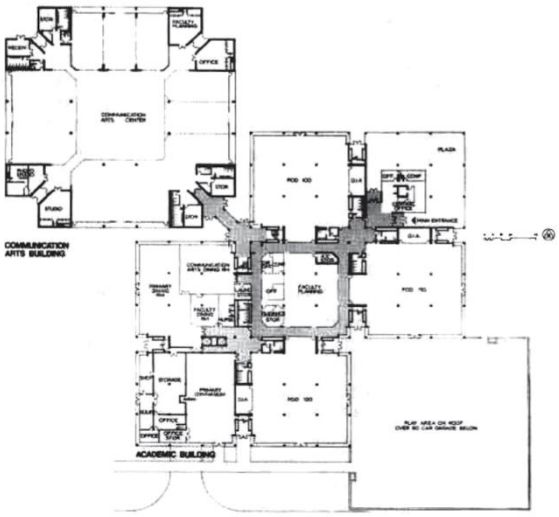


Figure 3. (Illustrates the floor plan of the "open plan" Disney School, which was designed by Perkins & Will, Architect)
Source: Tanner and Lackney, 2006

The first primary school following this open-plan concept appeared in the United Kingdom in 1959 at Finmere, designed by David Medd in collaboration with educators (Hamilton, 1976; Brogden, 2007; Cited in Martinho & de Silva, 2008).

Throughout the evolutionary design of school buildings from standardized to open-plan spaces, following to the energy crisis of 1973, there was a shift towards energy-efficient renovations of existing schools, particularly those built in the early 20th century. This was partly due to the decreased construction of new schools during that time. Another significant development in school facilities emerged in the 1990s and beyond, known as the green building or high-performance building movement. This movement was significantly influenced by the introduction of the Leadership in Energy and Environmental Design (LEED) green building rating system in 1998. It gained momentum in the early 2000s and has become one of the most influential factors in recent school design and construction (Taylor, 2008; US Green Building Council, 2007).

Scholars (Shield, Greenland, & Dockrell, 2010), discussed the historical evolution of classroom design and teaching methods; approximately 50 years ago, open-plan classrooms gained popularity as part of the progressive educational reform movements of the 1950s and 1960s. Before this shift, traditional teaching methods were primarily didactic, with teachers positioned at the front of the classroom,

delivering lessons while students sat in rigid rows of desks. However, the post-World War II era marked a departure from this formal teaching style, with education shifting its focus towards accommodating the individual needs of students rather than emphasizing the convenience of teachers (Shield, Greenland, & Dockrell, 2010).

Approximately 10% of schools adopted this open-plan design in the late 1970s. Nevertheless, many researchers identified substantial weaknesses (Brogden, 2007). The 1967 Plowden Report revealed major problems in school buildings and advocated for improved facilities. It also showed how traditional designs with vast classrooms and extensive non-teaching areas gave way to more compact, informal, and cost-effective arrangements. These modifications sought to develop relationships while also accommodating a variety of educational tools. Architects such as David Medd and Mary Crowley were influential in integrating school architecture with child-centered ideas, which reflected a broader movement in educational philosophy (Brogden, 2007).

Open-plan schools, which are schools designed without self-contained classrooms, are characterized by fewer internal doors and walls compared to traditional classroom layouts. Yet, some of the practical challenges that open-plan layouts face are mostly noise and visual distractions, which can also make teaching difficult. Authors in a study presented some influential strategies to mitigate noise issues in open-plan schools such as the installation of absorbent ceilings, linear classroom layouts, partitioning between classrooms, limiting class numbers, and providing sufficient floor space per child (Shield, Greenland, & Dockrell, 2010). There is a study done by Dockrell & Shield (2004), that highlights the need to consider children's feelings about noise when designing schools.

Open space designs, which were intended to provide adaptable learning environments and facilitate team teaching through features like movable walls, encountered significant opposition from certain educators, administrators, and architects. As a result, numerous open-plan schools abandoned this approach and returned to the conventional classroom setup, essentially converting open spaces into enclosed classrooms with the ability to close doors. Although a limited number of open-space schools have endured, the majority are no longer genuinely "open." (Brubaker, 1998, cited in Martinho & de Silva, 2008).

One of the reasons innovative school classroom designs, such as open-plan layouts, have been rejected is teachers' preference for traditional teaching methods. Teachers tend to teach in ways similar to how they were taught, reflecting an individualistic society. Furthermore, according to surveys conducted by Martinho (2008) and Brogden (2007), teachers were unprepared for the pedagogical shifts connected with these novel designs. According to Brogden (2007), there was a dearth of training and attention paid to preparing teachers for this new educational style (Martinho & de Silva, 2008).

According to some scholars, open-plan classroom designs have more advantages than challenges. For instance, Neville Bennett suggests that the success of such designs depends on teachers' ability to use space effectively and organize their teaching methods accordingly. An example from the Lisbon Communications Museum's School of the Future demonstrates that innovative pedagogical principles can thrive in open spaces, with a majority (95%) of students preferring this flexible approach and all students (100%) agreeing that it enhances their learning experiences (Martinho & de Silva, 2008).

Dudek highlights that contemporary school design has now reached a stage where rooms and spaces are meticulously designed to fulfill specific functional requirements. The modern school is structured around well-defined time periods, each dedicated to specific subject areas. This design approach stands in stark contrast to the monofunctional spaces commonly found in factories and early schools, where large classrooms accommodated hundreds of students simultaneously (Dudek, 2000). Furthermore, He notes that Hall's analysis of function, particularly in relation to residential houses with designated rooms for specific functions, has influenced a modernist conception of how individuals should structure their lives within these purpose-built spaces. Dudek underscores a potential tension between the requirements of discipline and the promotion of creativity and liberty in education. He believed excessively rigid architectural designs, resembling generic blueprints, may inhibit creativity for both architects and educators, overlooking the unique characteristics of each site and hindering creative thinking. He also emphasizes the significance of creating school environments that foster imaginative thinking, spontaneity, and peer interactions among children.

In a study, Black and Wiliam (2018) explored the many facets of pedagogy including how it relates to assessment and how important it is for directing instruction. In fact, in order to clarify the intricate relationships between pedagogy, instruction, and evaluation, they explored research. In general, the terms "pedagogy" and "instruction" are used differently by educators. Some take a wide approach, embracing various definitions and interpretations, while others take a more restricted approach, focusing on certain teaching approaches. According to Shulman (1999) and Hallam and Ireson (1999), pedagogy includes elements that influence both teaching and learning processes (Black & Wiliam, 2018). Pedagogical priorities receive diverse attention; for instance, some emphasize nurturing students' content understanding and critical thinking skills, while others promote autonomous thinking over rote memorization, as evidenced by Bruner's (1966) focus on growing enactive, iconic, and symbolic thinking or Tyler's (1949) proposed shift from inductive to deductive reasoning (Black & Wiliam, 2018).

Waldorf education is one of the education types that is based on the spiritual-scientific studies of Austrian scientist and thinker Rudolf Steiner (1861-1925). While each Waldorf school is administratively independent, they share common characteristics. The curriculum is divided into three main stages: Primary Grades (1-3), Middle Grades (4-6), and Upper Grades (7-8). Waldorf educators emphasize the holistic development of students, recognizing them as beings with intellect, emotions, and physical capabilities. The curriculum incorporates arts, practical skills, and experiential learning to engage all aspects of a student's being. Through creative activities like color and form exploration, drama, and hands-on craftsmanship, students cultivate their emotional health, volition, and cognitive abilities. A successful Waldorf education aims to educate the whole human being, nurturing their head, heart, and hands. This approach is believed to produce well-rounded individuals capable of engaging both thought and feeling in practical endeavors (Barnes, 1980).

The other type of education is called Montessori, developed by Dr. Maria Montessori in the early twentieth century, which is a child-centered approach that depends on the concept of how kids have an innate desire to learn and explore. This educational approach relies on a meticulously prepared environment that enables children to engage in self-directed activities with specifically crafted hands-on

items. the educational philosophy of Montessori, emphasizing the belief that self-formation is most effectively nurtured when students are responsible for constructing their own knowledge. Montessori teachers, often called guides, prioritize the creation of an environment that encourages independent learning rather than merely imparting knowledge. In a Montessori classroom, students have the autonomy to select their activities and actively manage their learning journey, while teachers engage in small-group interactions to support this self-directed development (Murray, 2011; Lillard, 1972; Chattin-McNichols, 1998; Montessori, 1965, 1966; cited in Murray, 2011).

Another type of education known as Reggio Emilia Philosophy is an approach to early childhood education that values children's natural curiosity and places them at the center of the learning process. It originated in Reggio Emilia, Italy after World War II and was created by parents seeking a respectful and community-based approach to education. This philosophy encourages children to explore their environment and learn at their own pace through a tailored curriculum based on their interests. Children are not passive recipients of knowledge, but active participants who can pursue their own learning. Teachers observe and guide children, rather than direct them, allowing for experimentation, mistakes, and creative solutions (Scots College, 2017).

In summary, traditional education, often referred to as the conventional teaching method, places educators in a central role, focusing on imparting factual information to students to prepare them for their future roles in the workforce. While progressive education, influenced by educational reformers like John Dewey, centers on students as the core of the educational framework (SOE, 2020). This distinction underscores the diverse array of educational approaches, encompassing Montessori, Waldorf, and Reggio Emilia, each contributing distinctive perspectives to the cultivation of holistic and personalized learning journeys. The design of school buildings and the pedagogical approaches employed within them are two interrelated aspects that significantly impact each other. Research has shown that many schools persist in implementing traditional pedagogy, even in spaces designed to support more diverse teaching and learning approaches (Deed & Lesko, 2015; Saltmarsh et al., 2015). Thus, the education system plays a pivotal role in shaping teaching practices and learning experiences within school environments.

Education in Turkey. Turkey's education system is structured into several stages to cater to students of different ages and needs. These stages encompass Early Childhood, Primary, Lower Secondary, Upper Secondary, and Higher Education. Early Childhood Education includes facilities like nursery and daycare centers, along with special education kindergartens for children aged 0-36 months. As children progress, they enter kindergarten, nursery, and practice classes, with enrollment starting at 57 months. Special education services are also available for those who require them. The primary and lower secondary stages are combined into a single structure, serving children aged 5.75 to 13 years old. The curriculum is standardized, with teaching programs developed and updated by the Ministry of National Education (Eurydice, 2023).

The Ministry of National Education in Turkey seeks to improve educational quality by updating the school environment and architectural designs. Although the Ministry of National Education recommends specific project types for high-quality educational facilities, they are not compulsory to be implemented. The "100% Support to Education" project, for example, consists of 35 individual school development initiatives aimed at contributors. With the theme "From Tradition to the Future," new school construction projects have been undertaken that fulfill both present and future requirements of students in terms of varied educational programs, evolving legal requirements, educational purposes, and educational functions. According to the Ministry of National Education, the objective of these projects is to construct educational spaces that are not merely confined to traditional corridors and classrooms but extend to become functional, aesthetically pleasing environments designed with students in mind. These innovative constructions incorporate advanced building technologies and are considerate of environmental and climatic conditions. Despite the Ministry of National Education's unveiling of a development plan for both school buildings and the educational system in 2018, there is currently no concrete exemplar project realized under the thematic banner of "From Tradition to the Future." The predominant architectural approach observed in Turkish school buildings adheres to a traditional layout. Robinson (2002) claimed that it is critical to prevent this standardization approach when planning school buildings in order to minimize the

creation of uninteresting, box-like structures that are from the mid-20th century (Aydoğan, 2012).

Chapter 5
Wall and Phenomenology

5.1 Wall

People have made artificial environments by directly manipulating the environment using their own hands as well as for personal gain. The idea of space has evolved over time and currently covers a wide range of dimensions (Ensoy, 1984). ‘Walls are vertical or nearly vertical structural elements that separate environments or spaces from each other’ (Toydemir-Gürdal-Tanaçan, 2000). In essence, a wall is a plane. When a plane is used in a horizontal configuration, it is referred to as a floor or ceiling; meanwhile, a vertically oriented plane is considered as a wall.

In Ching's definition, a wall is any vertical structure that provides a continuous surface, or that serves to enclose, divide, separate, or protect for safety purposes (Colak, 2004, S:6,7,8). The wall is referred to be "the dividing element that generally has a carrier function in buildings" by Sözen and Tanyeli. It can be constructed utilizing knitting or pouring techniques, prefabricated construction, or by painting a timber structure (Sözen-Tanyeli, 1994, 71). Planes are primarily used to define a space for human, to separate zones from one another, and to provide comfort conditions as well as providing safety for individuals. The Oxford Dictionary gives the term "wall" five different definitions;

- *‘A long, solid structure that rises straight up from the ground, made of stone, brick or concrete, that surrounds, divides or protects an area of land.’*
- *‘Any of the sides of a building or room.’*
- *‘Something that forms a barrier or stops you from making progress.’*
- *‘The outer layer of something hollow such as an organ of the body or a cell of an animal or a plant.’*
- *‘A space on a social media website where you can share messages, photos, etc. With other users.’*

A wall can be separated into two major portions when evaluated comprehensively;

- Physical wall/ visible wall: The visible wall entails physical and spatial boundaries (vertical and horizontal planes)
- Invisible wall which does not exist physically but retains characteristics of a wall

Space, according to Zevi, is "the leading player in architecture" (Zevi, 1957). He believes one type of space is the interior of the building, which is contained by the ceiling, floor, and walls of the building. From this perspective, it can be said planes are the elements that defines a space for people. For Heidegger, the wall defines a hard, solid, and impermeable concreteness around us, yet he also claimed that it is abstract due to the endless additions of sensation, such as color and texture, determines subjective values, and creates (Colak, 2004). It is wise to notice that the phenomenological perspective in this thesis would be a response to the question of how pupil sense the wall. Almost in all schools around the world, wall is being used as a space separator which separates outer space from inner space, which separates first floor from second floor, which separates corridor space from classroom, and which separates classrooms together. In the meantime, it's crucial that we consider how, in what sense, and for what purpose we use the wall. For instance, solid, translucent, and transparent walls can each give the subject a distinctive sense of experimentation.

In this study, architecture, wall, education, school, and phenomenology have been the five main keywords of research to get more information about what has been done before and what has not. The initial phase of this study's inquiry focused on the ‘wall’, which has been identified as an important element of any structure. The second stage of investigation is on spaces ‘without walls’ which refers to the concept of ‘open-plan schools.

5.2 History of walls

To investigate walls, it can be beneficial to search the history of buildings and architecture to figure out the reason and role of walls in human history. There are books and articles written about the history of architecture mainly focused on different ages and different locations in which architecture occurred (Fazio, Moffett, & Wodehouse, 2003; Hamlin, 1906; Moore, J., 2012; Kennedy, L., 2023). The question of why and how architecture is produced can lead to the main point.

In a book titled 'A World History of Architecture', the authors responded to this basic question by conducting a thorough literature review on the history of architecture by overviewing the evolution of human civilizations. Throughout history, people's willingness and motivation to build besides their ability, technique, or technology for construction is found as the important reason for their construction demand. However, the human will for construction has not always responded to just functional requirements, yet often goes beyond spiritual, psychological, and emotional needs (Fazio, Moffett, & Wodehouse, 2003). The functionality feature of architecture that insists on being a shelter, the basic human need can also be compared with the functionality feature of walls which are the main components of shelters.

Reviewing the initial house models of human beings revealed the demand of humans to have a place to be protected and have security, even during the earliest period when humans were living in caves. The need for a structure to divide the exterior space with an interior to be protected from harsh weather and wild animals demonstrates the demand and human desire to produce walls.

The walls were mainly built with wattles, skins, or mud; the roof was thatched or made of pressed earth which required only the most basic tools (Hamlin, 1906). For the emergence of walls, functionality has priority rather than its shape, size, and material.

Historical perspective underscores the enduring significance of walls in architecture and their multifaceted role in shaping the human experience of space. The history of wall-building can be traced back to ancient times when humans needed to protect themselves from external threats such as wild animals, enemy tribes, and natural disasters. Walls provided a physical barrier that could help keep people safe,

allowing them to establish and maintain settlements. As societies evolved and became more complex, walls also took on new functions, such as delineating property lines, providing privacy, and creating a sense of security. In the context of schools, walls serve a number of purposes such as creating separate classrooms, providing acoustic insulation, and controlling the flow of traffic within the building. Examining the meaning and purpose of walls in different contexts, including the school environment, can provide insight into their role in shaping human experience and behavior.

5.3 Building Walls

In the realm of architecture and interior design, flooring and walls play pivotal roles, both structurally and aesthetically. They shape the functionality and ambiance of a space, serving as essential components in architectural design. In the following sections, scholars' perspectives on walls will be explored, shedding light on the intricate relationship between architecture and these fundamental components.

Flooring and walls are integral elements in architectural design, each serving unique functions and contributing to the overall character of a space. Hasol (1998) defines flooring as the surface that separates floors in buildings and is meant for walking, with various materials collectively referred to as floor coverings. These coverings, such as parquet, tile, and carpet, not only serve functional purposes but also play a significant role in the aesthetics of a space. Kalınkara (2001) emphasizes that flooring choices can evoke different moods, either exciting or soothing, and should harmonize with the style of furniture and accessories.

On the other hand, walls serve as vertical partitions in buildings, demarcating spaces, and providing structural support. Hasol (1998) distinguishes between walls, typically made of stone, brick, or similar materials, and partitions, which are lighter and often constructed with wood. Sözen and Tanyeli (1994) add that walls generally have a load-bearing function but can be created through various methods, including prefabrication and the application of coatings on wooden structures.

Additionally, Heidegger's perspective, as cited by Çolak (2004), highlights the duality of walls: while they physically define and enclose spaces, they also possess

abstract qualities, such as color and texture, that contribute to subjective values and atmospheres.

Toydemir, Gürdal, and Tanaçan (2000) offer a concise definition of walls as vertical structural elements that separate environments or spaces. They further classify partition walls as non-load-bearing, single-story, and generally supported by the underlying floor.

In the realm of daily life, walls within homes play a pivotal role in shaping vitality, character, and mental states, as underscored by Kalınkara (2001). Collectively, these definitions and perspectives illuminate the multifaceted roles of flooring and walls in architectural design, combining functionality, aesthetics, and emotional impact.

One of the studies investigated the 'border elements in the Interior', which questioned what are border elements and discussed that the border elements provide the function to interior spaces within the field of interior design. In that study limiters of space have been divided into two and each includes components and elements; space components used as limiters such as floors, wall, column, beam, ladder, window, door, and space elements used as limiters such as accessories (furniture), accessories (plants, lighting items). Findings revealed that these border elements contribute significantly to the functionality of interior spaces and interior design education from students' perspectives (Açıcı, 2015).

In the study by Çolak (2004), the investigation is on walls by exploring the various meanings and feelings that walls can evoke. Actually, the study delves into the multifaceted nature of walls, moving beyond their traditional role as barriers. It explores the diverse interpretations and formations of walls in our contemporary world, influenced by rapid technological advancements. Walls, while often associated with restriction, also convey meaning through their syntactic and semantic aspects, shaping user behavior. It analyzes samples and illustrates the diversity of walls and their impact on architecture and users and divides walls into several categories; protective wall, conciliatory wall, amazing (game) wall, transparent wall, monumental wall, guide wall, artistic wall, mask wall, variable wall, mysterious (mysterious) wall, analog wall, natural wall, partition wall, habitual wall, contrary wall, simple wall, imaginary Wall.

It can be concluded that walls in a building play a crucial role in the structure of a place that shapes the spatial organization of the environment. In the context of architecture and the built environment, planes (in vertical and horizontal configurations), regardless of their physical feature that can contain, appear as boundaries that define and enclose space, separating the spaces. Yet, the range of physical attributes of planes can be categorized by the features they contain such as the height of the planes, their thickness, shape, angle, constructed material, surface texture, color, condition including damages, etc.

Functionally, they provide support and stability for the building by distributing the load from vertical and horizontal planes to the foundation. Planes contribute to the figure-ground-sky relationship within a place by implementing constructed boundaries on the ground and height of the building. There can be also other attributes of their functionality such as protection, interior comfort, security, privacy, division, boundary making, enclosure, display or decoration, and acoustic/thermal insulation.

These walls of a structure can be categorized in terms of their functionality into two; internal walls of the building and outer walls of the building. Each type can contain an attribute regarding the spatial space. For instance, the aim of using walls in a building is due to its enclosure attribute with dividing space as outside and inside. The outer wall of a building first divides the space of the outside environment from the inside environment of the building, and internal walls divide the space of the inside building into different areas. Yet being inside and outside is not always as being in the building and outer environment as interior and exterior space. In the phenomenological paradigm, Relph (1976) developed the concept of “insideness” which explores an alternative approach from which to understand individuals' connection with their surrounding environment. According to Relph, different combinations and intensities of the "insideness outsideness" dialectic have an important impact on how people experience a place's meaning and emotion. These different experiences lead to various levels of connection with that location depending on the individual (Seamon, 1996) which is also connected with the subjective lived experience from a phenomenological perspective.

Chapter 6

Fieldwork and Observations with Preschool Children

6.1 Research Design and Case Study Participants

The aim of this thesis is to discover the underlying perception of children aged 5-6 about school walls. In order to reach the participants' perceptions of lived experiences with walls in their everyday lives, multiple research questions were considered in the semi-structured interview format. The questions created for this thesis are intentionally open-ended, with the ultimate objective of discovering 'what' and 'how' (Moustakas, 1994) students think and understand the 'school wall'. This method allows participants to express their own viewpoints on what they think when confronted with the phenomena, as well as how they think of phenomena. Semi-structured interviews in focus groups, groups are the additional method of data collection which has been conducted in one day with eight hours at Bahçeşehir Koleji Anaokulu (Bahçeşehir College Preschool) preschool environment with a total number of 58 children in the age of 5-6 who have been divided into five classes. In this phenomenological study 'bracketing' or 'epoche' has been used throughout both observation and communication processes contributing to the process of collecting information from children and reducing biases. This is made easier for the researcher by the phenomenological reduction process, which enables them to have an open mind and listen to the people's descriptions of the phenomenon under study in a receptive manner (Moustakas, 1994). The primary framework of the research was based on the belief that children at that age might not respond to the questions of the researcher as they do not know them as well as they might feel uncomfortable with the climate of the questionary survey at all. So, among three classes, 36 children out of 58, teachers of each class asked questions, and children contributed voluntarily by raising their hands. However, after spending 6 hours in the school environment, attending in each class, and observing them, children showed a tendency to know about the researcher and started to communicate with the researcher. Their tendency and intimacy stated children's high potential for communication ability which led to a change in the study's framework. So, in two classes including 22 children out of 58, the researcher

participated in children's games and activities and started communication by asking open-ended questions one by one to the children. The time of semi-structured interviews either in groups or in individual interviews; when children respond one by one; is different with a variation of 15-20 minutes for each class. The first inquiry to achieve their inner subjective thoughts about walls led the study to select 'Word Association' which provide an opportunity to be aware of what word associates with walls in their perception and how children express wall. ‘’What comes to mind when you hear the word wall’’ is the first proposed question that has been asked to the 58 children in total.

In three classes we had to wait until the teacher spares time for conducting the research. In lilac class (first class), before their class time finished, the teacher and children sat on the floor on the classroom’s rug in a circle like a group. The teacher shared information about what the children were supposed to do as a new game to play, she also added that the game rule requires them to express the first thing that springs out of their minds when they hear a word. The method used for data collecting in the green and blue classes was the same as in the lilac class, with the research done among children by their teacher asking the exact same question of "What comes to mind when you hear the word wall". The researcher attended classes one by one with the technique of data collection by mounting a tripod camera to record videos of children responding to the teacher's questions as well as taking notes of their explanations. After stepping into each class, the teacher introduced the researcher to the children and she gave brief information about what they were going to do while the researcher was mounting the tripod and camera to capture the entire classroom setting and participants. The same data collection technique is used exactly in the other two classes (yellow class and Bordeaux class), with the data process variation in that the researcher took the place of the teacher to communicate with children and perform the research. Since they had free time to play and do whatever they wanted, children in these classes were playing with Legos on the floor or sitting on chairs and painting. So as the researcher entered each class, the first step was positioning the camera and the next was to join in their activities and communicate with them.

6.2 Procedures

6.2.1 Observational Method to Collect Data. Observation used in this thesis allowed the study to explore pupils-aged-5-6 interaction with school indoor planes (walls in vertical & horizontal configuration). Children between the ages of 5 and 6 were the subject of field observation at Bahçeşehir College Preschool. What their thoughts are and how they engage with the school plane on a regular schedule give insight into their lived experience with 'school walls'. From Merleau Ponty's perspective, any psychological origin or prior thoughts/behaviors, beliefs, and assumptions contributed to research cannot be considered in a phenomenological study. In his point of view, in the phenomenological approach researcher should attempt to provide direct descriptions of perceptions, experiences, and feelings in a natural setting (Merleau-Ponty, 1962).

In this investigation observation is a method of data collection that insists on the direct observation of individuals when they are in a natural state. This approach has the potential to somehow capture their daily states which are coming from their daily direct or indirect experiences. Observing behaviors and interactions of 5-6-year-old students with walls of the school in different spatial circumstances can be considered as a method for obtaining anticipated data on the subject being studied. While the observation method has been focused on children's every action at that age which can be relative to the environment they exist. One of the most common components of any educational setting that has been studied based on children's linkage with them is ‘planes’. Thus, the interaction of students aged 5-6 with school planes of the classroom, hallway, corridor, special rooms, etc. will be under examination by observation. In this study, observation research is used since it was not possible to collect data through face-to-face communication, such as interviewing during class or break time. Ethical considerations are particularly important in the case of participant observations, in which researchers conceal students' identities from the people studying this topic.

As phenomenological research, the method of this study is not based on any predetermined responses. However, the investigation attempts to find a way based on referring again and again to the research questions of the study. In fact, reviewing the

research's main questions and expanding them, has provided more detailed insight for the researcher to be more aware of what is she/he looking for. However, to prevent the potential for observer bias, a systematic method has been applied to the research which has been generated by categorizing the research's main questions. The researcher followed a codified observation procedure that minimized observer bias and verified consistency in data collecting. The study set out to understand the perceptions and experiences of young children within their day-to-day relations with walls as a main component of the spatial environment of a school.

6.2.1.1 Review of Research Questions and Objectives. Besides the literature review and theoretical investigations in this study, observation as a method of gaining firsthand data follows and reviews the research's main question as follows:

- What does 'wall' mean to users?
- What is the purpose of the existence of walls in the school environment?
- Investigating the role that school-wall play within a school context,
- Investigating how school-walls support the school.

First of all, the aim of this study is to explore students' inner experiences and their perception of a school wall. What a school wall mean to users is a question that aims to shed light on users' (students aged 5-6) opinions about a wall. Students' initial impressions of the school wall are therefore the first concept that the observational method tends to look into. Besides this study with a phenomenological approach aims to uncover pupils' individual perspectives about the purpose/reason for the existence of walls in a school setting as well as the role that a wall can contain in an educational context. Accordingly, to get knowledge of their perception of how walls support the school we may focus on their interaction with walls. Regarding research questions, an exploration pattern that took into account initial impressions, interaction, role, and the function of the walls has been generated to achieve all of the intended objectives. Such a systematic framework for observation has been formed based on the core concepts of the research questions with the goal of reducing the chance of observer bias. Via consideration of this research-question-based pattern, the researcher started observing with a more professional eye, participating in a variety of school spaces. This method

of visit actually offered the opportunity for the researcher to gain clarity on what she/he explores, and to design the methodology.

6.2.2 Semi-Structured Interviews to Collect Data. The main goal of this thesis is to figure out the in-depth perception and lived experiences of pupils aged 5-6 about school walls. Thus, for the interview/communication, a few questions have been provided in order to reach the participants' interpretation of walls as well as their experiences with walls that they can gain in their everyday lives. The research questions were generated to be asked from children in groups and individually in a semi-structured interview format. Three to four questions were developed by the scholar by considering intentionally open-ended, using and emphasizing "what" and "how" (Moustakas, 1994) as the method to discover the thoughts of students and their way of understanding the 'school wall'. In this investigation, semi-structured interviews whether in focus groups or individually were utilized as a method of data collection, and it was conducted within 58 preschool children in one day (the same day of field observation) at Bahçeşehir Koleji Anaokulu (Bahçeşehir College Preschool).

The purpose of the questions that had been prepared was to provide pupils a socializing platform so they would feel comfortable contributing to conversation in the established friendly atmosphere that the researcher had set up in the classroom. All four prepared questions targeted to elicit children's subjective interpretations of distinct but intertwined issues; grasping what is their initial perception of walls, detecting what is their perception of the existence of walls in general as well as the existence of school walls, and finally indicating what are their thoughts about not existing partition walls between classes.

6.3 Data Collection

6.3.1 Case Study Observation

''Phenomenology can be practiced and identified as a manner or style of thinking''
-Merleau-Ponty, 1962

Phenomenology in this study is a method of gaining a more holistic understanding of the student's perceptions and attitudes toward school walls. The purpose of a phenomenology investigation is to give a looking sight to the researcher and based on that study aims to investigate pupil's irrational experiences and learn about their subjective viewpoints. Yet, observation is considered as a method of study due to two main factors. First of all, it should be taken into account that phenomenology is a way of thinking, rather than a certain approach that can be applied to investigations in a variety of fields. We can explore subjective experiences through phenomenology, but in order to do that; to be aware of people's experiences; observation has been chosen as a method. The second factor contributing to selecting observation as a method of study is the complexity of communicating with children at ages 5 to 6 during which they newly learn to read, and write. Thus, the expectation of them to respond to any form of a questionary survey or research has not been found suitable. From the perspective of Piaget, children at that age are in the preoperational stage of their life during which their cognitive development has not matured yet. He found egocentric propositions in 5 to 15 percent of children's language (Merleau-Ponty, 1988) which disable conducting reliable research without the contribution of experts in the field of psychology or even pedagogy.

Close observation in phenomenological research entails data collection that is natural and authentic (Sarantakos 2005), as the researcher enters the 'world of immediate experience' (Husserl 1970). In this study, data collected through the observation method have been processed in order to gather information. An organized framework for observation is created based on an exploratory theme for walls based on 'what' and 'how' children experience them. The primary themes set for this study that is based on the research question included **initial impressions**, **interaction**, **role**, and **function**. The created theme was the origin of breaking down research questions

into a checklist that includes the main concept of questions of the thesis shown in (Table, 1).

CHECKLIST
Do pupils tend to stay close to the walls or do they prefer to avoid them?
How do students aged 5-6 interact with the walls?
Are there any emotional responses when interacting with walls?
Do walls assist children to feel more social or more private?
What do the students think the walls' purpose is? Do children experience isolation within walls? Do they view walls as a means of protection/security, a means of separating apart the school, or something else entirely?

Table 1. (Illustrates checklist of observation)

Source: Created by author

After that, by transcribing the created checklist, a key component of each checklist item has been identified and presented as a code which makes the researcher more conscious about what she/he observes as displayed in the (Table, 2).

CODES	EXPENDED QUESTION	CODES
close/avoid	How do they prefer to stick close to the walls and how much do they prefer to avoid them?	PROXIMITY
interact	What is their preferred approach when they want to interact with walls including physical contact, leaning on, shoving up against, painting, or writing on them?	INTERACTION
emotional responses	How they appear to be reflecting their emotional states through the walls	EMOTIONAL RESPONSES
social	How they generally behave when they are close to walls, such as their propensity to talk to friends, gather close to walls, or use walls.	SOCIAL BEHAVIOR
perception	How they see walls in their perception; such as seeing walls as a means of protection, isolation, a means of dividing up the school, or something else entirely.	PERCEIVED PURPOSE

Table 2. (Illustrates created codes from checklist)

Source: Created by author

In the pursuit of investigating the complex relationship between architecture and the educational environment from a phenomenological perspective, a thorough observational study was conducted at Bahçeşehir Anaokulu Koleji (Bahçeşehir College Preschool). The purpose of this inquiry was to achieve deep insights into the dynamic interactions between the built environment (school walls as the example and case study), and children aged 5-6 (especially their perception of walls as one of the vital components of a place and schools. The observation period, precisely held over 8 hours, from 8:00 AM to 4:00 PM, intended to grasp children's nuanced behaviors both in the classroom and during the break time, their spatial preferences, and engagement patterns with walls. By implying phenomenology as an approach, this study delves into the experiential aspects of architectural design, highlighting the importance of spatial configurations in shaping human cognitive and emotional responses, particularly during childhood.

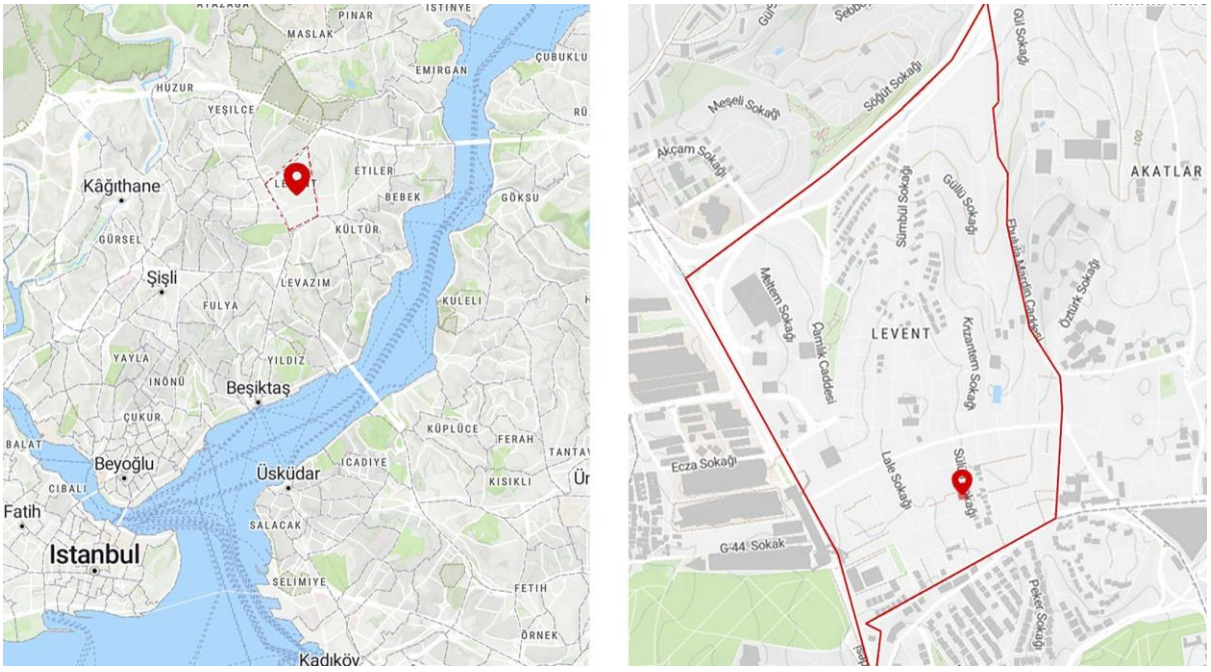


Figure 4. (The map of Istanbul illustrating districts of Istanbul and Bahçeşehir College Preschool located in Levent)

Source: Photo from Maptiler edited by author (2023, August 13)

Bahçeşehir College Preschool is a private preschool and as it is shown in (Figure, 4). it is located in the Levent district of Istanbul. Despite the busy streets and large population of the overall Levent district, the area surrounding the school could be

considered to be quiet. Architecturally, the appearance of the building as demonstrated in the (Figure, 5) is similar to the schools that are built from many years ago. This Preschool building had a balanced composition in terms of verticality and horizontality, characterized as a box by its elevation into three different levels. The entrance section of this multi-story structure is defined by a single-bar-door that connects the outdoor and indoor environment of the school with its direct connection to the yard of the school. After entering the yard, in the right part of it, there was a security booth in which an employee was in charge of watching children enter and exit the school as well as managing children and cars of parents when they arrive and leave the school. Since the thesis is focused specifically on the walls of the indoor environment of the school, the outdoor part was not observed by the researcher.

Figure 5. (Illustrates the appearance of Bahçeşehir College Preschool)

Source: Photo from Google Map

The spatial interior configuration of the school reveals a considerately arranged spatial layout that accommodates a total of 12 classrooms involving 8 fixed classrooms, a game activity room, and 3 multipurpose rooms. The classrooms are distributed across the different floors of the building and also divided into two categories by the age of children; 4-year-old children's classes and 5-year-old. As highlighted in the Figure 6-9 there are 6 classrooms with 5-year-old age preschoolers that have been under investigation in this study. Each classroom containing 5-6-year-

old children in school has been identified and labeled with a specific color such as yellow classroom, blue classroom, red classroom, green classroom, lilac classroom, and burgundy classroom.

All of the six classrooms pupil age ranging by 5 are strategically distributed across the different floors of the building with yellow, blue, and red classrooms occupied on the ground floor (Figure, 6), lilac and green classrooms settled on the first floor (Figure, 7), and burgundy classroom in the second floor (Figure, 8) and (Figure, 9) represent third floor of the building without multipurpose classrooms which were considered as common room between all classes.

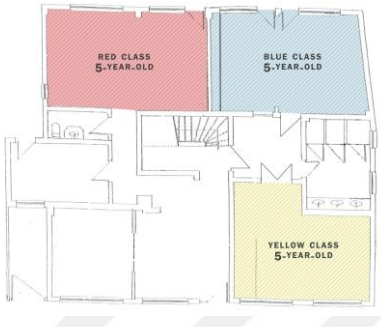


Figure 6. (Illustrates the ground floor of Bahçeşehir College Preschool)

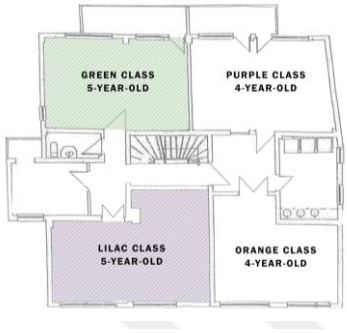


Figure 7. (Illustrates the first floor of Bahçeşehir College Preschool)

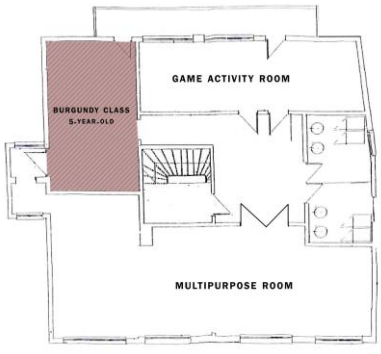


Figure 8. (Illustrates the second floor of Bahçeşehir College Preschool)

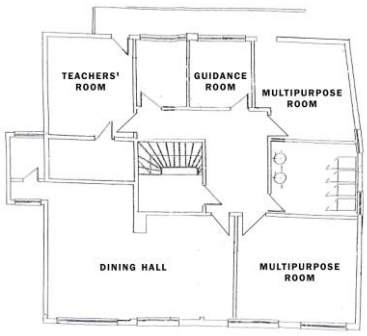


Figure 9. (Illustrates the third floor of Bahçeşehir College Preschool)

Source: Created by author

As children enter to the indoor environment, they have to pass the entrance space to attend to their classes either directly or through the stairs which is located exactly in straightforward the entrance door (Figure, 10).

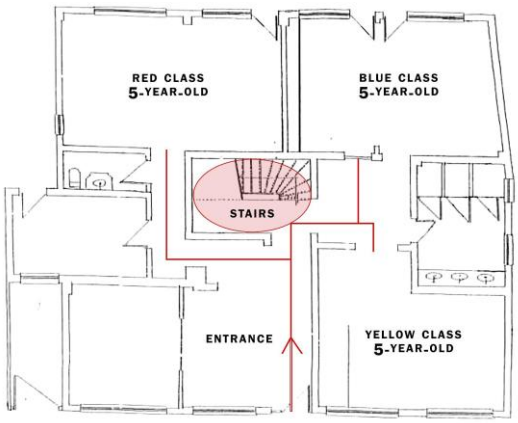


Figure 10. (Illustrates the potential circulation of children to their classrooms on the ground floor of Bahçeşehir College Preschool)

Source: Created by author

When children arrived to the school there was a teacher who was responsible to watch them go upstairs to their classes (Figure, 11).

Figure 11. (Illustrates stairs space of Bahçeşehir College Preschool)

Source: Photo by author (May 23, 8:20 AM)

The preschool's architectural design goes beyond just classroom walls, —the staircases—an essential component that enables vertical circulation between different floors as well as presenting as a place of social interaction as children attend in the

stairs and corridors in groups to move onto other floors for instance to the game activity room, multipurpose rooms, bathroom, dining room. Actually, stairs strategically set at key point of the building, play a vital role in connecting the various floors while also fostering a dynamic rhythm within the school's daily activities. While using stairs, the behavior of all students revealed a common pattern as whenever they were going up and down, they moved very close to the wall next to the stairs and they all were using stair rails as it is obvious in the (Figure, 12).

Figure 12. (Illustrates stairs space of Bahçeşehir College Preschool)

Source: Photo by author (May 23, 9:00 AM)

The observation of children in the classroom setting was initially commenced by attending to lilac class, on the first floor. The classroom environment of all classes involving the arrangement of the chairs and tables, the area for playing (containing a rug on the floor), or the materials attached to the walls and doors of the classrooms was similar between classrooms. Some of the pictures taken from the classroom environment indicate the various sides of the classroom including the spatial configuration of the classroom, furnitures, walls of the room, materials of the classroom which are located whether on the floor or hanged on the walls. (Figures 13, 14, 15). Most of the materials on the wall were projects of the pupil and teachers. When the scholar communicated with the teacher of this classroom and elaborated the aim of the thesis, the teacher expressed that children’s most favorite wall is the north-wall of

lilac classroom due to their significant attention to the Mathazone ormani (Mathazone forest) and she added this is because they like the green part on the wall.

Figure 13. (Illustrates the north side of the lilac classroom at Bahçeşehir College Preschool)

Source: Photo by author (May 23, 8:09 AM)

Figure 14. (Illustrates the west wall of the lilac classroom at Bahçeşehir College Preschool)

Source: Photo by author (May 23, 8:08 AM)

Beyond the walls of the classrooms, Bahçeşehir Preschool College's architectural design encompasses other areas—the staircases—containing a vital building component that enables movement on vertical circulation as well as presenting as a point of social interaction to the children. Out of the classrooms there is a common corridor space which connect classrooms to the stairs and other spaces. This part of the

school as shown in the (Figure, 16) also played a crucial role as during the observation this area was one of the areas in which children paid notable attention to the walls appeared by their tendency to be close and touch the walls (Figure, 16).

Thus, staircases and corridor parts are strategically considered important points in the building which play a critical role in connecting the multiple floors as well as developing a dynamic rhythm within the daily activities at school.

Figure 15. (Illustrates the east part of the lilac classroom at Bahçeşehir College Preschool)

Source: Photo by author (May 23, 8:09 AM)

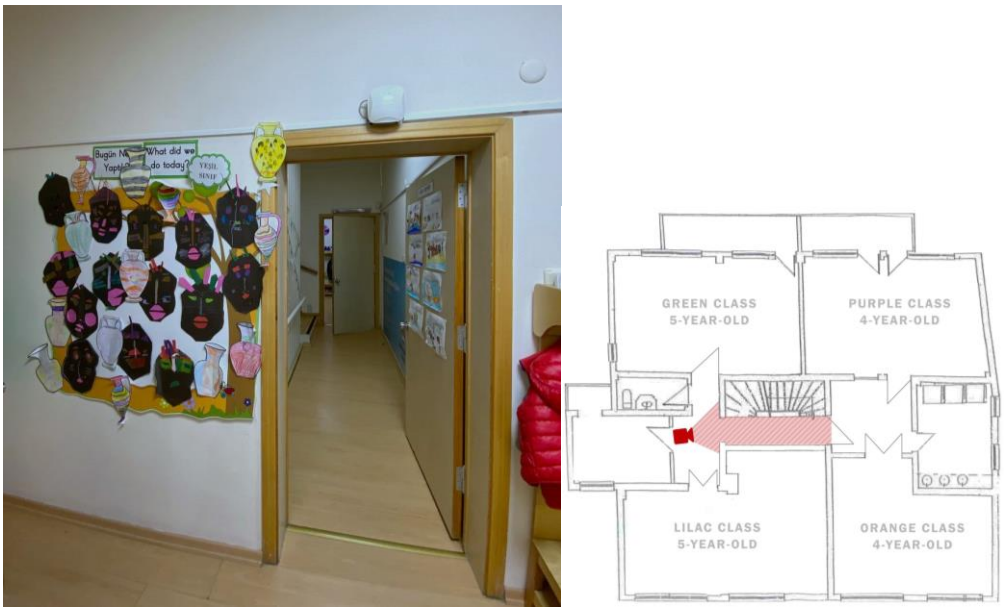


Figure 16. (Illustrates the corridor space of Bahçeşehir College Preschool)

Source: Photo by author (May 23, 8:14 AM)

In the entrance space of the classroom after the main corridor, there was furniture designed in the scale of a child for hanging their bags and coats, changing their outdoor shoes, and wearing indoor school shoes. When pupils of the lilac class arrived at school, before entering their class, they all were in charge of changing their outdoor shoes to indoor shoes. While they showed two distinct behaviors; some of them sat on the floor and changed their shoes while some tended to change their shoes by sitting on the furniture designed for them. (Figures, 17, 18)

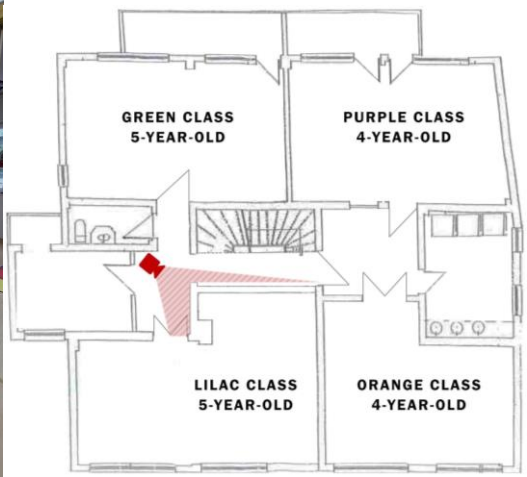


Figure 17. (Illustrates children's behavior in the entering space of the lilac classroom on the first floor at Bahçeşehir College Preschool)

Source: Photo by author (May 23, 8:15 AM)

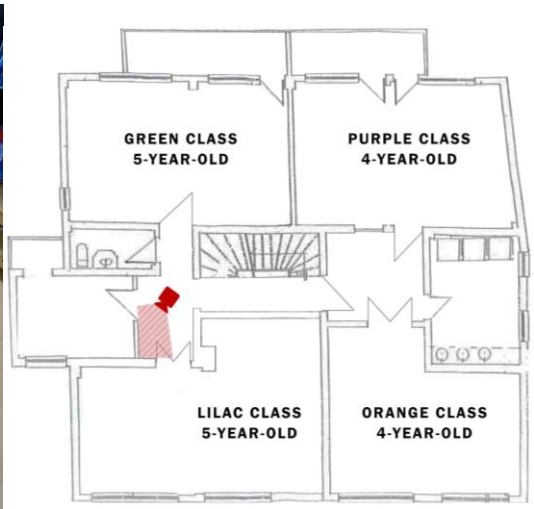


Figure 18. (Illustrates children's behavior in the entering space of the lilac classroom on the first floor at Bahçeşehir College Preschool)

Source: Photo by author (May 23, 9:06 AM)

In the very early hours of the school morning when they just arrived at the classroom, they had free play time for about 30 minutes. The observers set up the camera in the classroom at this point to record what they were going to do; recorded videos and photos of children's activities have been reviewed multiple times to figure out their behavior in the classroom setting. The observations revealed that children during the time while in free play time, mostly preferred the space which included a rug on the floor. (Figure, 19)

Figure 19. (Illustrates children's behavior in the classroom setting)

Source: Photo by author (May 23, 8:09 AM, 8:38 AM)

They chose to sit on the floor and most of them played with Legos while 3-5 of the children were playing a noticeable time near the wall, hiding under a space between two little tables. There were girls who also played for a while near the wall which had a window and was full of books and toys. (Figure, 20)

Figure 20. (Illustrates children's behavior and activities while playing in the classroom setting)

Source: Photo by author (May 23, 8:32 AM, 8:36 AM, 8:43 AM)

It is observed that whenever children were offered the opportunity to engage with something in their free time, the building blocks or Legos played an important role for them. Upon observing their engagement with Legos, it was considerable that the act of constructing a place would as a representation of a deeper instinct—an inner desire to establish a building rather than assembling another thing/object can be considered as one of the attention points. Their responses and expression when creating the building were mostly loud out as the term 'home'. (Figure, 21)

Figure 21. (Illustrates children's tendency to build 'home' while in the free play time)

Source: Photo by author (May 23, 8:40 AM, 8:50 AM)

Yet, among all the significant observations, a quite notable behavior emerged in another classroom setting as displayed in the (Figure, 22), while kids were having free playtime, a group of them instead of building a miniature "home" were up to build a space named 'home' for their own selves. They were recruiting little wood pieces to play the role of house walls. One of the important points is that they selected the area exactly next to a wall of classroom and it was not necessary for them to construct wall in one side of their house.

As they continued to complete the construction of their place, the composition and arrangement of the wooden pieces was forming a square or rectangle shape. They created walls of the house while they were in the central part of their imaginary 'home' and surrounded in a place like a box containing walls with three child-created wooden pieces as length and width of the box-house and one original wall in another side of

their home. Their house was all defined by walls with no existing any opening to the outer environment.

Figure 22. (Illustrates children's tendency to build 'home' while in the free play time)

Source: Photo by author (May 23, 11:20 AM)

The observation of pupil's behavior in different classroom settings during the free play time, figured out their most liked area to play and how they chose to be positioned in the class; near the walls or in the central part of the classroom. (Figure, 23)

Figure 23. (Illustrates children's selected area to play in the classroom)

Source: Photo by author (May 23, 11:02 AM, 8:51 AM)

Their interaction with walls also was seen during break time when they wanted to go to the dining hall that existed on the third floor, they all moved with their teachers

in groups and as the (Figure, 24) displays, by passing time they were moving very close to the wall next to the stairs.

Figure 24. (Illustrates children's interaction with corridor walls)

Source: Photo by author (May 23)

Children's behavior while passing through the corridor space to go upstairs to the dining hall, revealed their tendency to physically interact with the physical environment; with the wall next to the stairs by 1. touching the wall with one hand (by the hand near the wall), 2. use 2 hands, touching corridor wall with right hand and left hand by touching rails like a game. (Figure, 25)

Figure 25. (Illustrates children's interaction with corridor walls)

Source: Photo by author (May 23)

Another space in which children exhibited notable behavior was the common space in front of the toilets. This common area has connection with the corridor of

stair. Thus, when children were going upstairs to the toilet, similarly to other groups of children they touched the corridor walls as shown in (Figure, 26). The behavior that caught the driver observer's attention was after they finished and washed their hands, when they had to wait for other children they positioned like a raw in vicinity of walls and they tended to lean against the wall and door whether on first floor or third floor (Figure, 26).

Figure 26. (Illustrates children while leaning against the wall)

Source: Photo by author (May 23, 9:12 AM, 9:34 AM, 9:55 AM)

After observing nearly all the 5 classes of 5-aged children, the classroom which has BSK course in multipurpose room had been under investigation by observers. Some of the children tended to do sports and used wall as an element to aid them in doing the task, and some of them preferred to play near the walls in groups, hitting ball on the wall. (Figure, 27)

Figure 27. (Illustrates children's interaction with walls in multipurpose room)

Source: Photo by author (May 23)

There were also other model examples of child behavior while they were supposed to do sports and some of the behaviors included: lying on the floor, communicating near the wall, and leaning against the wall. (Figure, 28)

Figure 28. (Illustrates children's behavior in multipurpose room)

Source: Photo by author (May 23)

During the observation time, some emotional moments were captured in which children tended to stay near the wall in that state. For instance, the pictures in the left and middle display the moment when they got tired or bored and they chose to stick to the wall rather than expressing their feeling in another area of the room. The picture on the right side is the recall of the moment during which the girl cut her finger with paper and the teacher was calming down her when she chose to sit, lean against the wall, and cry. (Figure, 29)

Figure 29. (Illustrates children's emotional behavior near the wall)

Source: Photo by author (May 23)

After all observations done during whole 8 hours a day, among different classroom settings, and different individuals, it can be concluded that the behavior of pupils aged 5 at Bahçeşehir College Preschool can be detected in five different categories; Physically touching walls (Figure, 25), Leaning against the wall (Figure, 26), playing in vicinity to the walls (Figures, 27, 28), walking close to the walls (Figure, 24) and being near the wall in emotional states (Figure, 29).

6.3.2 Data Collection of Semi-Structured Interview. As the fundamental inquiry in any phenomenological research is to figure out people's subjective experiences and thoughts, multiple forms of interviews are the most preferred method to gain expected information (Creswell, 2007). The semi-structured interview allows for a flexible and open-ended conversation which this thesis believed is the best option to communicate with young children as the method lets the child behave, think, and speak out whatever they want. As Piaget discussed, children aged 5-6 are in the preoperational stage in which their cognitive development has not developed well enough to have concrete thought and they use and integrate their imagination while this stage. As a result, open-ended conversation gives a flexible space for the child to express their own self in terms of 'what' and 'how' they think rather than just concluding certain answers.

The first inquiry to achieve their inner subjective thoughts about walls led the study to select 'Word Association' which provide an opportunity to be aware of what word associates with walls in their perception and how children express wall. ‘’What comes to mind when you hear the word wall’’ is the first proposed question that has been asked to the 58 children in total. The time of semi-structured interviews either in groups or in individual interviews; when children respond one by one; is different with a variation of 15-20 minutes for each class. In three classes we had to wait until the teacher spares time for conducting the research. In lilac class (first class), before their class time finished, the teacher and children sat on the floor on the classroom’s rug in a circle like a group. The teacher shared information about what the children were supposed to do as a new game to play, she also added that the game rule requires them to express the first thing that springs out of their minds when they hear a word. The method used for data collecting in the green and blue classes was the same as in

the lilac class, with the research done among children by their teacher asking the exact same question of "What comes to mind when you hear the word wall". The researcher attended classes one by one with the technique of data collection by mounting a tripod camera to record videos of children responding to the teacher's questions as well as taking notes of their explanations. After stepping into each class, the teacher introduced the researcher to the children and she gave brief information about what they were going to do while the researcher was mounting the tripod and camera to capture the entire classroom setting and participants. The same data collection technique is used exactly in the other two classes (yellow class and bordeaux class), with the data process variation in that the researcher took the place of the teacher to communicate with children and perform the research. Since they had free time to play and do whatever they wanted, children in these classes were playing with Legos on the floor or sitting on chairs and painting. So as the researcher entered each class, the first step was positioning the camera and the next was to join in their activities and communicate with them. During communication time, no matter whether children participated in communication individually or in groups, 3-4 questions were asked as follows:

- What comes into your mind when you hear the word ‘wall’?
- Do you know why there are walls?
- Do you know why school has walls?
- What is your idea when you imagine there is no wall between classes?

All the questions were asked by teacher of children in three classes either when they were seated on their chairs in groups or when they were arranged in groups in a circle sat on the rug. So that, every child answered the question voluntarily by raising their hand. In fourth class, the questions were asked directly to pupil by scholar in group. However, in another two classes scholar attempted to make communication with children individually instead of in groups, so she decided to participate in children’s activities after entering the classes, to warm up with kids, make connections with them and let them to ask anything and communicate with the scholar too. Children were playing with Legos in one of the classes, and the most of them were seated on the floor (on rugs), so the scholar sat on the rug between the children. Unexpectedly,

the kids were quite friendly and welcoming, so as the pupil started talking, the scholar started asking questions, taking notes, as well as recording videos of all conversations.

Chapter 7
Findings

7.1 Data Analyzes of Semi-Structured Interview

- ✓ **First question:** What comes to your mind when you hear the word ‘wall’?

By reviewing over and over transcripts of the children, four different categories were created by utilizing the NVivo program, regarding their responses as they heard the word ‘wall’. The reviews and analyzes of transcripts revealed a common pattern to how children actually notice, identify, express, and perceive walls. Most of the similar answers to the first question are in four distinct categories as follows: Object Associated, Behavioral Associated, Wall-Characteristic Associated, and Place Associated. Each of the categories contains children's responses with the highest amount of 36-time usage of phrases which refers to another object when they wanted to describe the wall. The behavioral category, which is included in over 21 sentences, is the second important variable that can be taken into consideration when they ask participants to express the wall. Followingly, some children’s descriptions of wall are by choosing a characteristic of wall with 14 references and defining wall as a place or place maker with 10 responses. (Figure, 30)

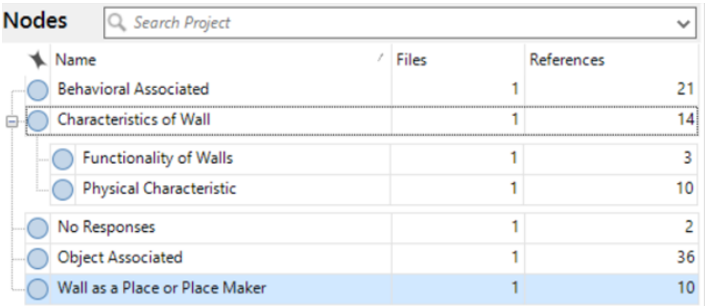


Figure 30. (Illustrates children’s responses for the first question in four different categories)

Source: Created by author by NVivo

- **Object Associated**

The category in which children have expressed/described 'wall' by including or relating another object. For instance, when they heard the word ‘wall’ the first thing that came into their mind was: ceiling, pictures, cats, door, window, roof, etc. So, by extracting the main keywords of each answers this category has been developed and some of their responses are: (Figure, 31)

- *The door is coming.*
- *What's on my mind! Ceiling*
- *window is coming. Because window is in the wall*
- *when I think of the wall, I think of the white plastic bag*
- *I thought of a white cat*
- *Chair/sofa because it is in front of the wall*

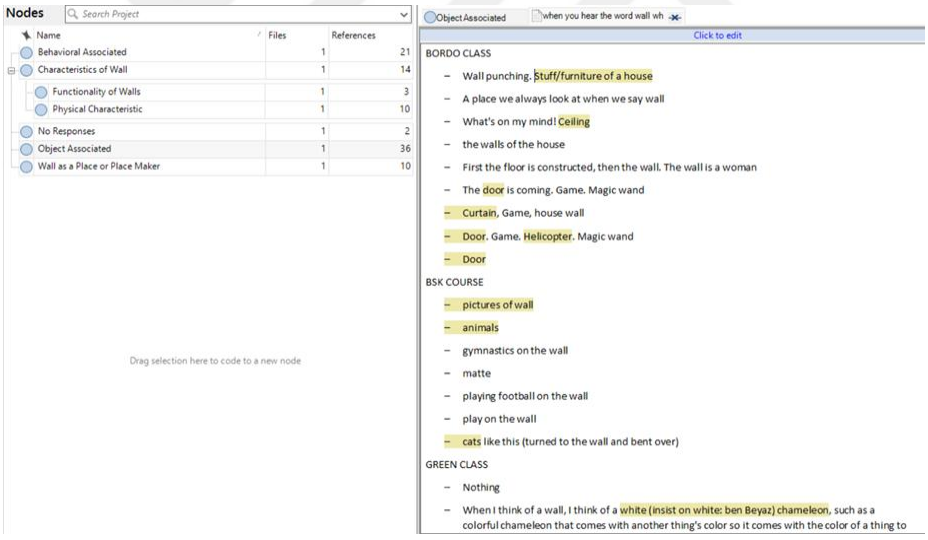


Figure 31. (Illustrates children’s object associated responses)

Source: Created by author by NVivo

In the process of creating this main category which may also be considered as one of the main clusters, all transcripts were read and reviewed and the keywords were underlined, and then by referring to the phenomenological approach and bracketing theory of Edmund Husserl, the phenomenological reduction aided to set aside all the presumptions so that the main attention was just into the keywords such as door, ceiling, window, white plastic bag, white cat, sofa. Each of these phrases from the

children's point of view is describing 'wall' yet, when we look phenomenologically without any pre-definition or any idea/concept in mind, it can be found out the terms they used are not really related to the wall; for instance, the wall is another unit for itself and white plastic bag is another item, or chair/sofa which is another object unconnected to a wall. Therefore, the name for these types of responses was selected as 'object-associated' which contains the answers which describe a wall by assisting another abject. It is also important to take into account that some of the responses could be interpreted with various aspects as example, when the child said 'I thought of a white cat' could also be comprehended by focusing on the word 'white' by elaborating the statement that walls are generally white, so whiteness can be a feature or characteristic of wall in children's mind, so when she thought about wall her cognition consciously or unconsciously remind white cat to her. In this case, the main attention would be on interpretations, and sometimes in the responses like this, the scholar has focused on figuring out every possible hidden dimension of responses. However, in this category, the highlighted part of the response 'I thought of a white cat' is considering the term 'white cat' regardless of its color, shape, etc. It focuses more on the nature of the term by attempting to consider what is the white cat as a whole unit.

- **Behavioral Associated**

The category in which children have expressed/described 'wall' by a specific behavior or the act they do on/with/near the wall. For instance, when they heard the word 'wall' the first thing that came into their mind was: playing game with/near the wall, leaning against it, punching, hitting, resting on the wall, etc. In addition to the responses that is shown in (Figure, 32), there are expressions as following:

- *I hit the wall next to the balcony and jump to break it.*
- *Lego playing comes to my mind*
- *When I think of the wall, I think of a pillow because my brother takes the pillow and leans against the floor or the wall. / I take a pillow and rest on the wall*

- *Bismillah Rahmani Rahim because my grandfather always takes the pillow and prays next to the wall.*
- *Wall is climbing place.*

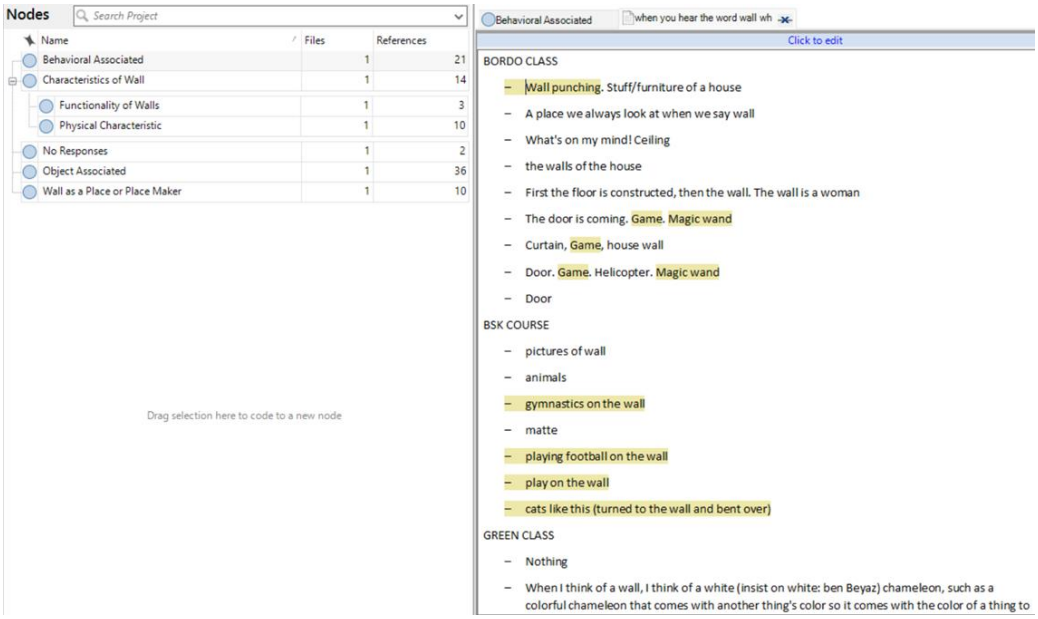


Figure 32. (Illustrates children's behavioral associated responses)

Source: Created by author by NVivo

In the process of creating this category, keywords are not detected as a simply single term, rather there were long phrases that described an action when kids heard the word 'wall'. These actions may also be designated as behavior that has connections to wall in their mind. For instance, in the response 'Bismillah Rahmani Rahim because my grandfather always takes the pillow and prays next to the wall', when the child wanted to define wall, he started to explain a specific event that occurred next to the wall maybe many times during his life so for him 'wall' reminds 'Bismillah Rahmani Rahim' and praying as this action over time occurred in an association of wall. It is also important to notice that, during the analyzing of whole answers to any question, other aspects of the responses are also taken into account. The example previously provided not only persists on explaining a behavioral event in relevance to wall but also it contains object-associated aspect as the initial response to the question was "Bismillah Rahmani Rahim," and the behavior was the reason for expressing that. There are also responses which refers to an action connected with walls directly such

as ‘I hit the wall next to the balcony and jump to break it’ which is the clear explanation of his act with wall.

- **Wall-Characteristic Associated**

The category in which children have expressed/described 'wall' by some characteristic and features of walls which is also can be divided into two sub-categories; physical characteristics and functionality of wall. In fact, the code characteristic contains both of their thoughts expressed in the code physical and function (Figure, 33).

- **Functionality of Walls**

When children start to explain a feature of a wall that insists on walls functionality such as a thing holder, wind and cold air preventer which also insists on his awareness that the wall is dividing in and out and keeps the wind and cold air out to protect us.

- *The wall is a thing that holds board*
- *It keeps the wind and cold air out and can be painted.*
- *For example, the winter storm broke out, they are protected by the walls.*

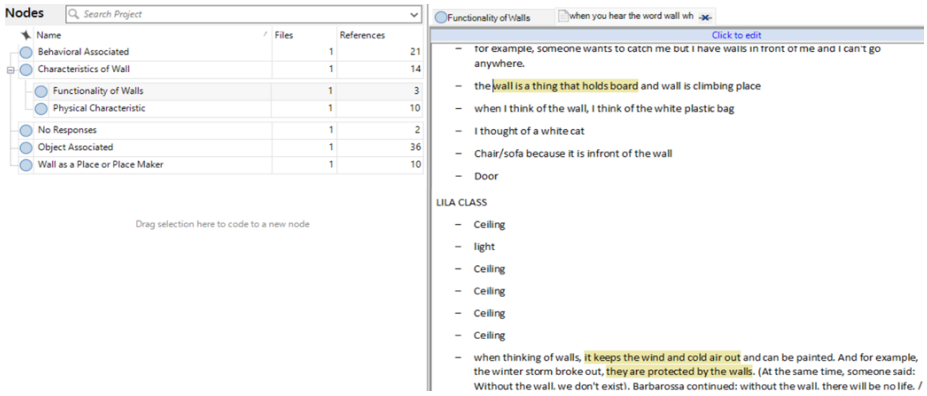


Figure 33. (Illustrates children’s wall functionality characteristic associated responses)

Source: Created by author by NVivo

This category which consists of three responses, revealed that when children hear the word ‘wall’, the initial impressions are not related to their functionality at that moment, and they rarely focus on this aspect to figure out why there are walls or what is the purpose of walls. The procedure of developing and including these three responses in this category is due to their focus point to explain what walls actually do.

- **Physical Characteristic**

When children start to explain the physical characteristic of a wall such as its color or texture or its potential to be painted. Some of the responses are as follows:

- *It keeps the wind and cold air out and can be painted.*
- *Wallpaper comes to mind.*
- *I thought of a white cat*
- *When i think of a wall, i think of a white (insist on white: ben beyaz) chameleon*
- *Paper is coming. Because paper is white wall is white*

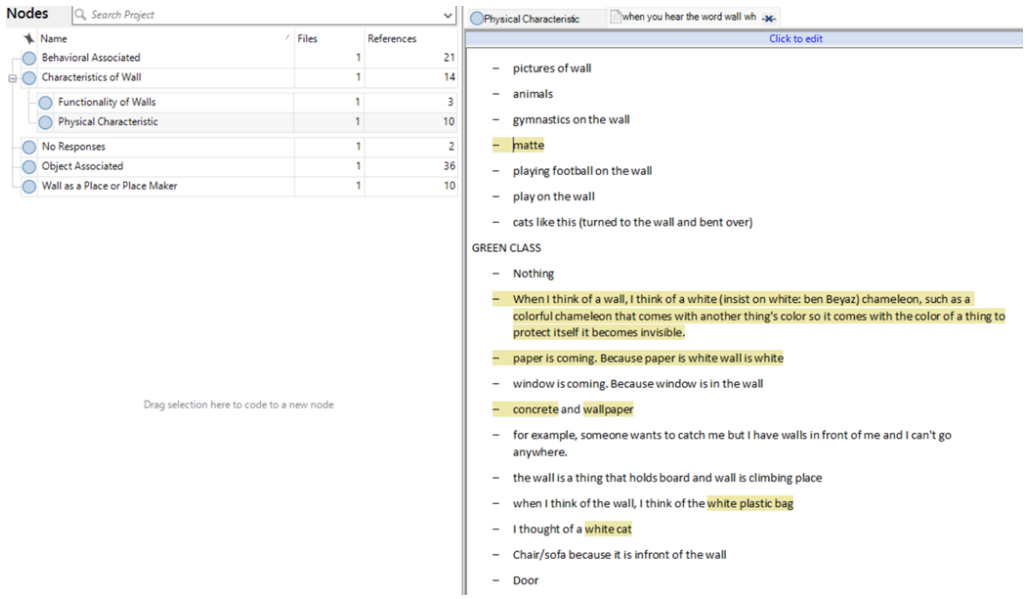


Figure 34. (Illustrates children’s wall physical characteristic associated responses)
Source: Created by author by NVivo

The responses of this cluster reveal that they are unanimous in expressing and reminding wall by explaining its color or its ability to be painted or its potential to stick wallpaper on it, so all of them attempt to describe a feature that ‘wall’ has, the name of this cluster is determined ‘physical characteristic’. The responses that refer to another object and attempts to describe wall through expressing another abject, in addition to referring wall’s feature, are also considered in ‘object-associated’ category; for instance, in the phrase ‘wallpaper comes to mind’, wallpaper, in addition to being used when decorating the wall and considered one of the apparent features of the wall, corresponds to an object beyond the wall by itself. (Figure, 34)

- **Place Associated**

The category in which children have expressed/described 'wall' by insisting on the word place or they relate wall directly with a place. For instance, when they hear ‘wall’ they mostly expressed: house walls, school walls, climbing place, a closed place, place we always look at, etc.

- *For example, someone wants to catch me but I have walls in front of me and I can't go anywhere.*
- *Wall is climbing place*
- *The walls of the house*
- *A place we always look at when we say wall*
- *A closed place*
- *Being inside the wall*

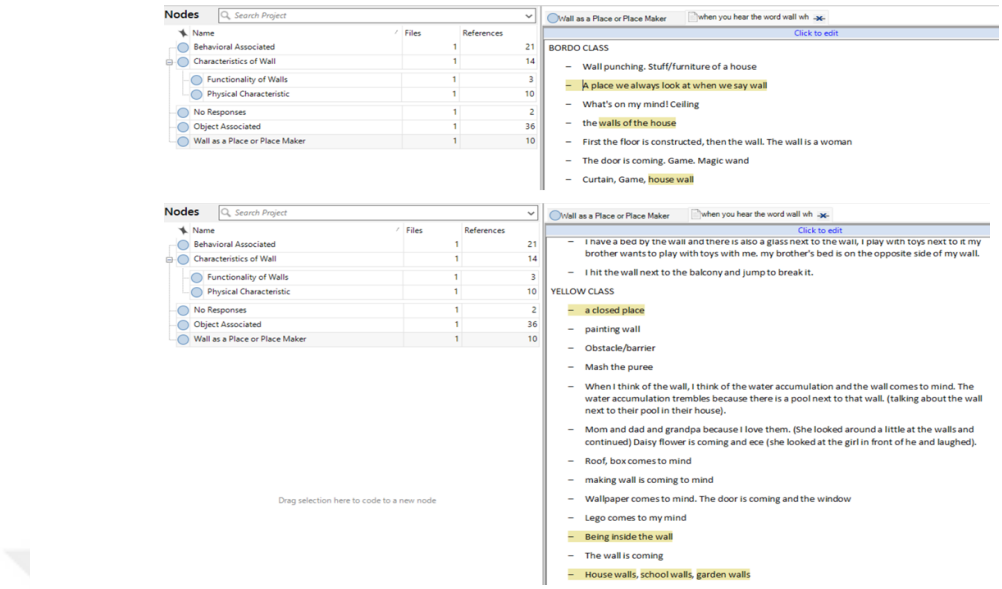


Figure 35. (Illustrates children's place maker associated responses)

Source: Created by author by NVivo

The explanations that made up this cluster mostly commented on that walls might create a place, along with the transcripts were studied by highlighting the term "place" or extended forms of sentences that contained expressions with a place-making meaning. (Figure, 35)

In summary, it is wise to note that the way children aged 5-6 expressed the term 'wall' demonstrate how wall regardless of its known universal definition, is interpreted by them. By referring to the cognitive development theory of Piaget it can be stated that their subjective definition of walls can be informed by the information they instilled in their mind up to that age. By referring to the findings from kids' responses it is evident that the identification of walls in their cognition is divided into four main categories; perceiving walls through defining another object which has the highest relation with the wall such as a roof, interpreting walls by expressing any behavior that people do near/on/with wall such as leaning against the wall, expressing wall via explaining the feature of it which has been segregated with its physical characteristic and functional characteristic, and defining wall as an object, tool, or component which make places.

✓ **Second question:** Do you know why there are walls?

By multiple reading of kids' expressions and interpretation of reasons for existence of walls, some initial categories created that is apparent in the Figure 36. The figure actually displays the first step of data analyzes that requires rereading the transcript and extract every single important word of every response in order to achieve main categories. Once important terms have chosen and initial nodes/categories created, there may be overlapping categories or the need for subcategories under a larger category. The second step of the phenomenological approach involves creating main categories from initial nodes through review and organization of them. For instance, through reassembling the existing nodes in the (Figure, 36), more generalized version of them emerged (Figure, 37, 38).

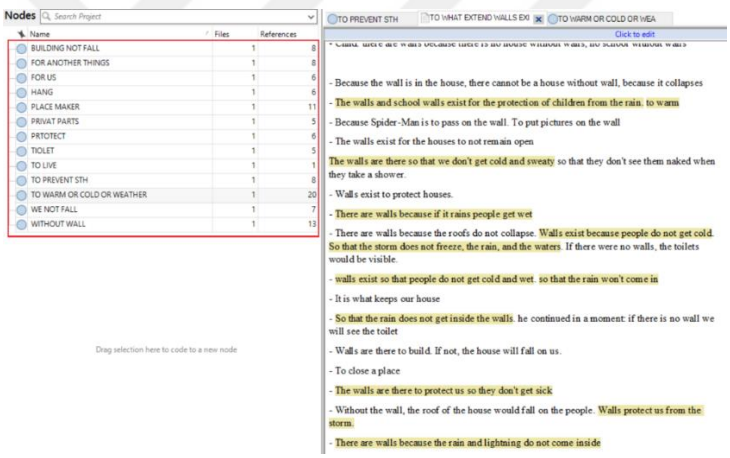


Figure 36. (Illustrates children's responses to second question)

Source: Created by author by NVivo

In the process of analyzing second question's transcripts, it is found that in a larger scale there is two categories which encompass total information derived from children. In fact, understandings of wall's existence are relied on two main reasons; walls presence for human-centric purposes and non-human-centric purposes. In general, in oppose to the short responses for first question which was asked children about their initial word association when hearing word 'wall', when children were supposed to respond this question, they tried to explain more, and they were just thinking and making long sentences of why there are walls.

In the process of developing this cluster, after reviewing whole initial categories it was realized that even if every category contains own responses, yet the main clusters could contain common aspect of the intentionality of categories. To discover what is the intention of reasons since in the responses there were specific phrases which in addition to the reason of existence of walls, directly asserted on one specific aspect; 'walls are there for us'. On the other hand, there were responses such as 'if there were no walls building would collapse' which explained about a reason, but not directly related to human, so these types of responses included in the category of 'non-human-centric functionality of walls'.

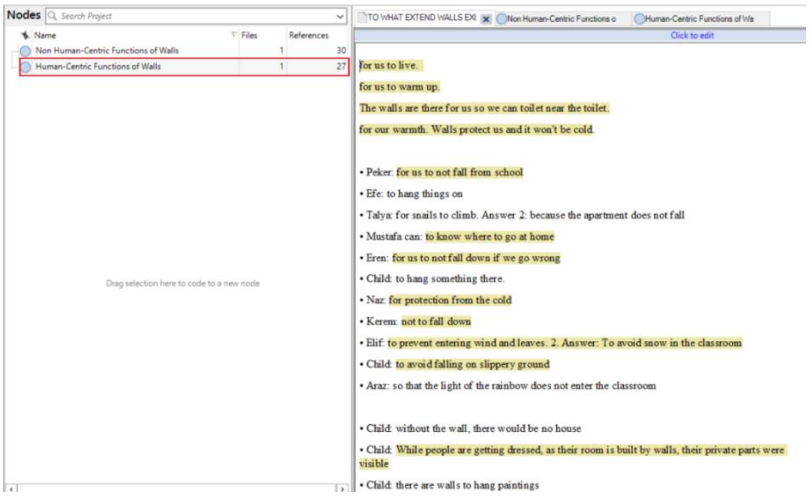


Figure 37. (Illustrates children's human-centric factor responses)

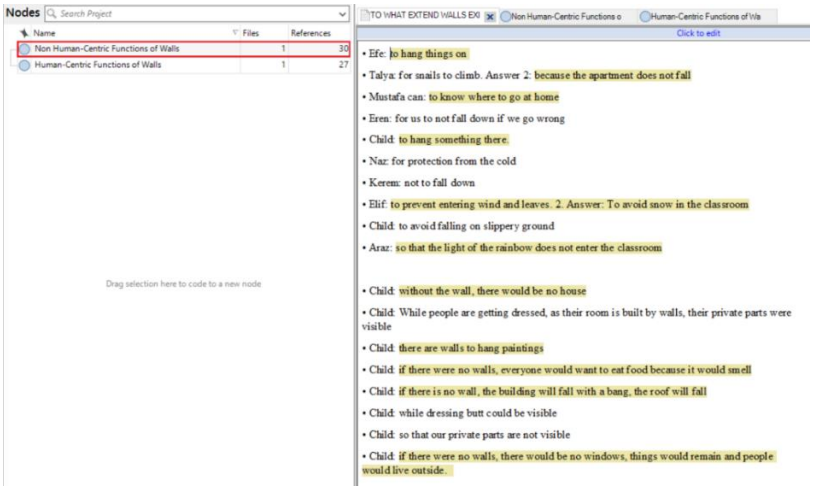
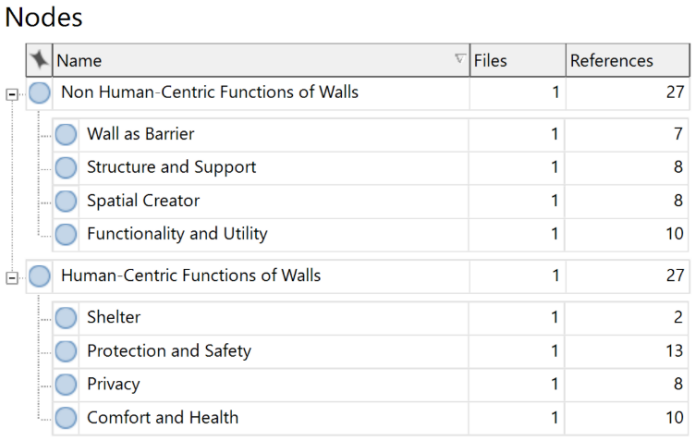


Figure 38. (Illustrates children's non-human-centric factor responses)

Source: Figures 37, 38 created by author by NVivo

As it is shown in (Figure, 39), the subcategories of two main nodes have equal ideas for purposes that are human-centric and non-human-centric. At the prospect of children, the major grounds for the presence of wall corresponds to a few reasons. The major reason of walls has been expressed 13 times as they protect people from things (cold, rain, etc.), and safety (not falling). Besides, they admitted another significant reason for the presence of walls lies on their functionality (holding things on walls, etc.) which have been used 10-times by participants. The equal number of responses defined wall's presence by referring to their ability to give individuals a comfortable space. The other intentions that walls contain from children's perspective are the features of the wall as a privacy maker (used 8-times), as a place maker (used 8-times), as a component that supports building (used 8-times), and wall as a barrier (used 7-times), that prevents things from coming inside or avoiding things.


Nodes

Name	Files	References
Non Human-Centric Functions of Walls	1	27
Wall as Barrier	1	7
Structure and Support	1	8
Spatial Creator	1	8
Functionality and Utility	1	10
Human-Centric Functions of Walls	1	27
Shelter	1	2
Protection and Safety	1	13
Privacy	1	8
Comfort and Health	1	10

Figure 39. (Illustrates sub-categories of human-centric and non-human-centric responses)

Source: Created by author by NVivo

1. Human-Centric Factors

- ***Protection and Safety***

The following (Figure, 40) illustrates the precise reactions of participants to the second question which have been placed under the heading of protection and safety due to the assertions on the word 'protect' or the phrases which transferred these

meanings. Some of the selected responses to the question ‘Why there are walls’ which covers their feedback are as follows:

- *Without the wall, we would fall*
- *The walls and school walls exist for the protection of children from the rain.*
- *Without walls, items would be stolen*

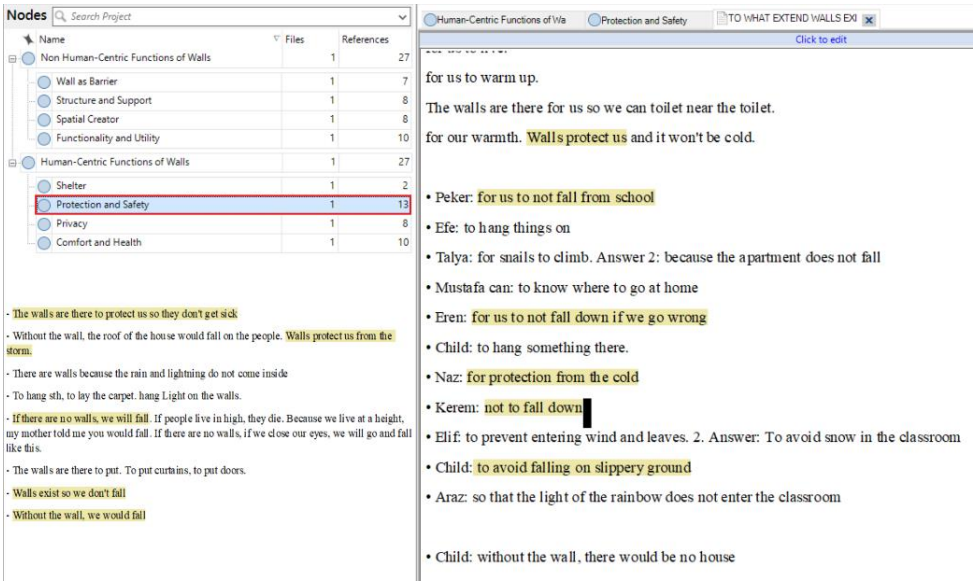


Figure 40. (Illustrates responses in sub-category of protection and safety)

Source: Created by author by NVivo

The reviewed responses provided by the children have uncovered a perceptible pattern, mainly indicating three distinct categories. One of the most substantial phrases that repeated more than other responses was one that expressed their concerns about 'not existing wall' and 'falling' as the cause of it. So, they admitted that there are walls because they protect us from falling. Some stated their anxiety about 'not existing wall' and 'catching a cold or having rain/storm inside', so they confessed that walls actually protect us from environmental-related challenges. Lastly, there is imaginative feedback that argued 'Without walls, items would be stolen', which also focuses on the protection aspect of walls by expressing the concern about the persistence of objects and 'not existing wall'.

- ***Comfort and Health***

The other category of human-centric factors has been placed under the heading of comfort and health as demonstrated in (Figure, 41), mostly includes the responses which are related to environmental factors by expressions about specific circumstances of weather such as rain, storm, and warmth. A few transcripts of kids' answers under this category are represented as follows:

- *For <u>our warmth</u>. Walls protect us and it won't be <u>cold</u>.*
- *To prevent <u>entering wind and leaves</u>. 2. answer: to avoid <u>snow</u> in the classroom*

It is important to note that the sentences that may contain another meaning are considered in other categories as well. For instance, when the child said 'To prevent entering wind and leaves. 2. answer: to avoid snow in the classroom', the other area of focus was the underlined statements since they could refer to a characteristic of the wall that serves as a barrier to prevent and avoid anything.

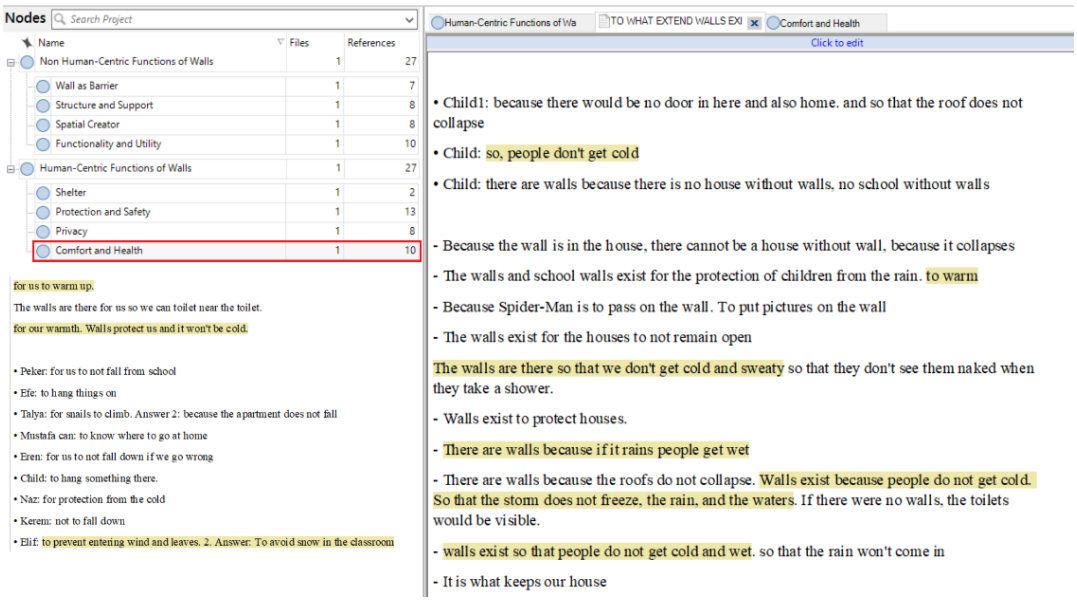


Figure 41. (Illustrates responses in sub-category of comfort and health)

Source: Created by author by NVivo

- ***Privacy***

Privacy is another subcategory included in ‘human centric factors’ cluster as the main expressions in this category as it is displayed in (Figure, 42) were highlighting on the word ‘visibility’ when describing if there were no walls. So, the common concerns were explained as ‘if there were no walls, it would be visible while toileting’. The other struggle children elaborated on was again about visibility of their private parts of body while dressing up.

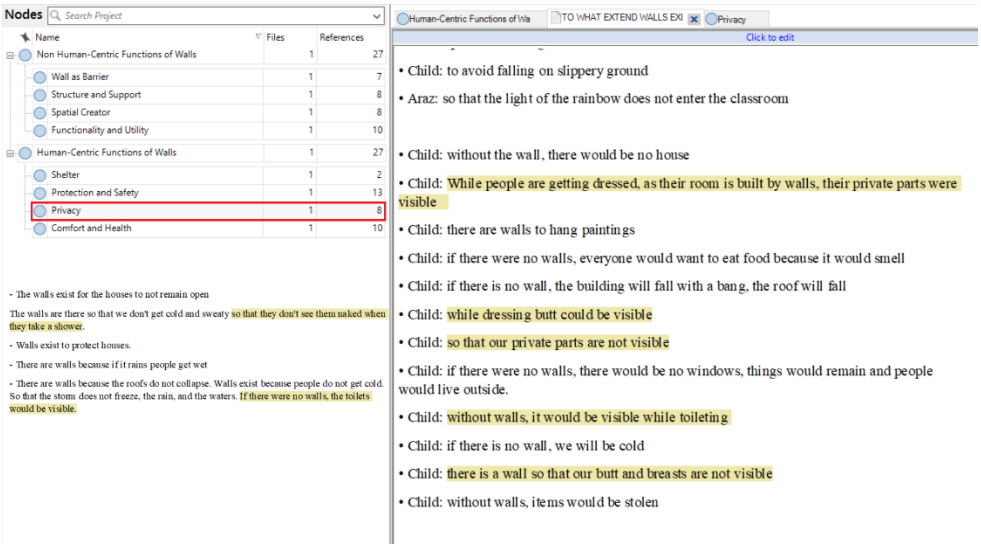


Figure 42. (Illustrates responses in sub-category of privacy)

Source: Created by author by NVivo

- ***Shelter***

While most of the feedbacks from children had a common point on the elaborated question, there were two samples as shown in (Figure, 43) which attempted to explain the reason of existence of walls in another perspective. The response ‘walls exist for us to live’ primarily emphasizes on that their presence is due to human, walls are existed for human, and secondly the statement highlights that, the wall make life livable, so the reason of placing this phrase under the head of shelter category is because of its focus on the feature that makes a place for us to live in it. The second phrase ‘walls exist to know where to go at home’, is analyzed by focusing on its attempt to explain the reason by expressing and accepting in forward that walls are the

components of a house, so walls are there because they make a place to identify multiple places with each other.

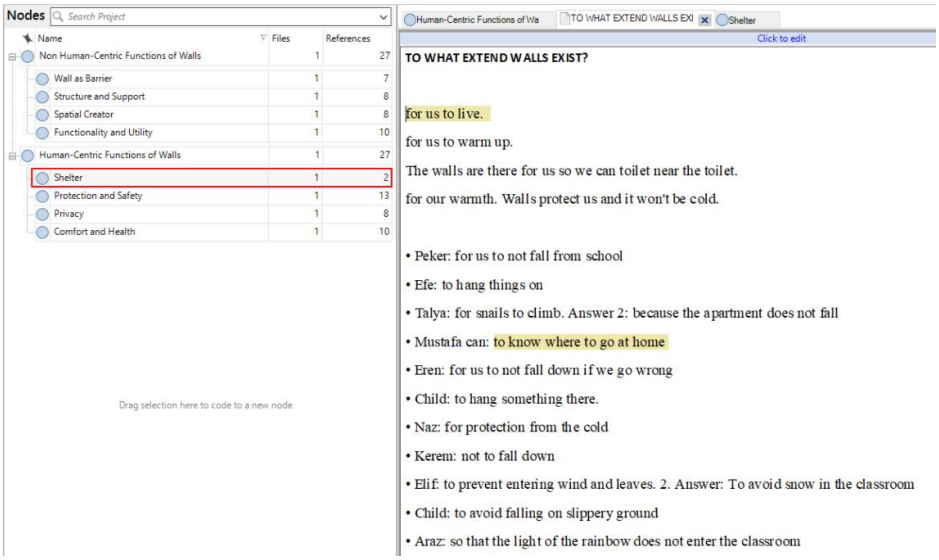


Figure 43. (Illustrates responses in sub-category of shelter)

Source: Created by author by NVivo

2. Non-Human-Centric Factors

- ***Functionality and Utility***

The most frequent responses under the heading of 'functionality and utility' of walls included answers focusing mainly on the aspects which attempted to present reasons related to the function of walls; the answers addressed the question by giving a reason on what is the function of walls regardless of human-centric reasons and how people use a wall. Following are a few types of responses that fit into this category:

- *To hang things on*
- *Because there would be no door in here and also home*
- *Walls exist to protect houses.*

Literally children who was thinking in this way were unanimous that walls exist to hang things, pictures, curtain on it. So, in this case, they see a wall as an object of usage or they perceive a wall by the ability that will contain to keep things on to have a door or window in it. Thus, the thought of being used and ability to keep/have things

are named as ‘functionality and utility’. The other feedback by a child said ‘Walls exist to protect houses’, is analyzed by paying attention on the underlined part of the phrase and considered protecting house as one of functions of the wall. It is significant to determine that this phrase is not take into account in ‘protection and safety’ category because the term ‘protect’ here is intentional to house not to a person. Thus, as the intentional part of the term protect is something not related to human and rather it relates to a building so it included in the category ‘functionality’ which is non-human-centric factor. (Figure, 44)

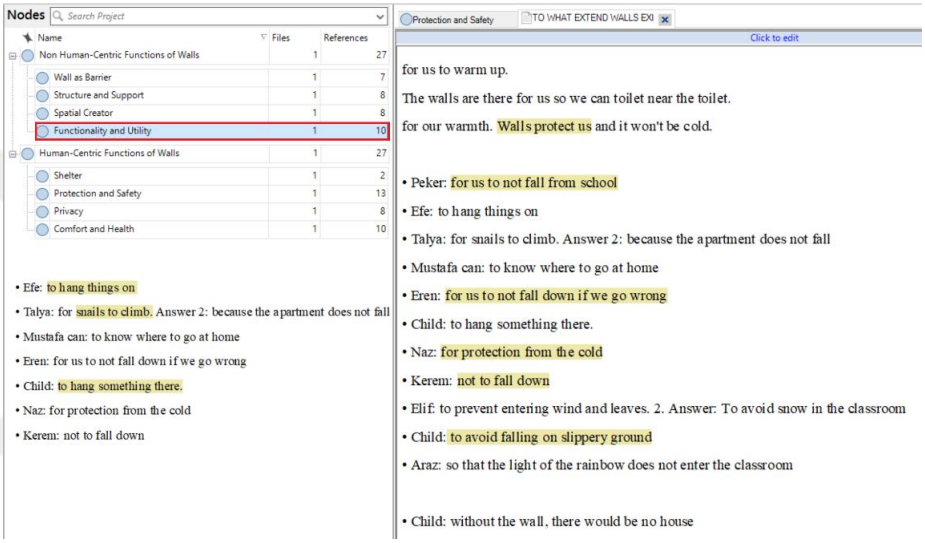


Figure 44. (Illustrates responses in sub-category of functionality and utility)

Source: Created by author by NVivo

- ***Spatial Creator***

This is the category in which kids defined walls as a component that makes a place and they highly emphasized that if there were no walls there would not be a house. As is shown in (Figure, 45), the phrase "there would be no house" appears frequently in the sample transcripts and the phrases actually represent walls as the vital crucial components of a house. The feedback explaining walls' existence 'to close a place' is also emphasizing the aspect that a wall has the spatial potential to make a place. In the process of analyzing the other response from a child saying 'Walls exist for the houses to not remain open', initially, the wall's existence as a component of a house is considered as the focus point which emphasizes its place-making aspect and

the second part of the phrase 'to not remain open' is considered as the cause of wall's place-making aspect.

- *There are walls because there is no house without walls, no school without walls*
- *The walls exist for the houses to not remain open*
- *To close a place*

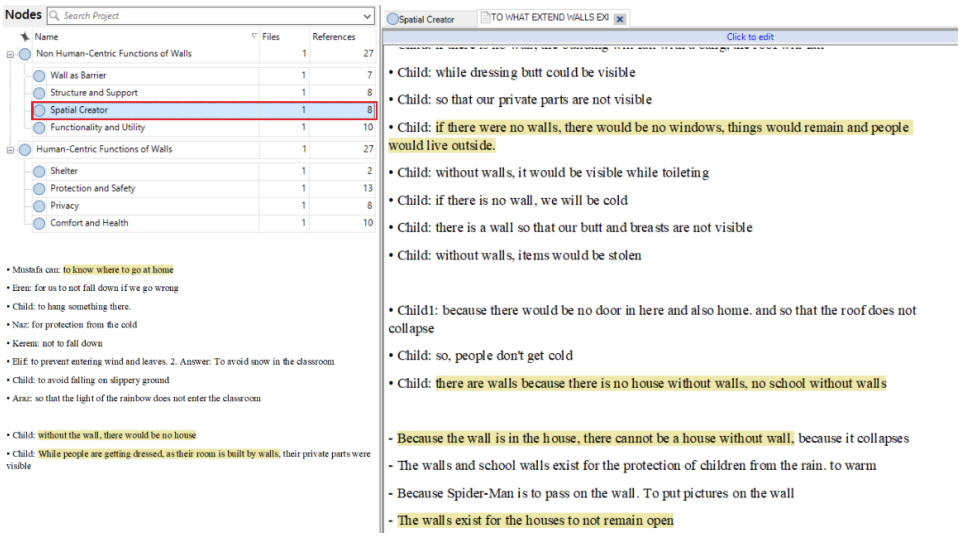


Figure 45. (Illustrates responses in sub-category of spatial creator)

Source: Created by author by NVivo

- ***Structure and Support***

Through the analyzes of transcripts, there were responses explaining the existence of walls with the imagination of if there were no walls what would happen (Figure, 46). Most of the feedback in this category expressed the incident of ‘falling’, so this was selected as the main keyword of this category, and sentences including the term ‘fall’ or ‘falling’ is extracted and transformed into the category of ‘structure and support’. However, it should be noted that the important viewpoint of analyzing the phrases is that the selection of phrases and determining the place of statements in multiple categories, is based on the association of keywords with the causes or explanations. For instance, the word ‘fall’ or ‘falling’ was already discussed in the category of ‘protection and safety’ in the ‘human-centric factors’ cluster. Yet, the

statements in that category explained falling in another aspect; the expressions were mostly concerned about people's falling, so they perceived the wall as existing for people to protect them from falling. However, in the phrases of this category (structure and support), kids' interpretations of walls' existence were based on the structural aspect of a building focusing on the fall of the structural components of the building if one of them (wall) did not exist. The following answers illustrated several types of children's perception in this category:

- *Without the wall, the roof of the house would fall on the people*
- *It is what keeps our house*
- *Because the apartment does not fall*

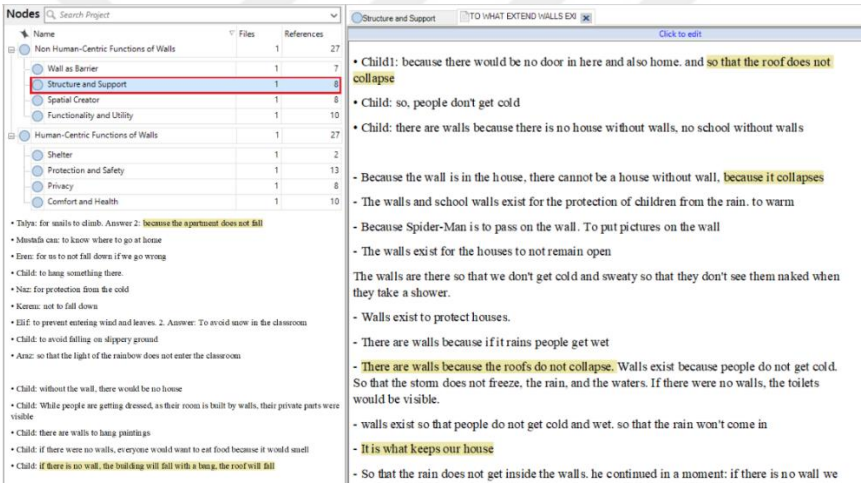


Figure 46. (Illustrates responses in sub-category of structure and support)

Source: Created by author by NVivo

- ***Wall as Barrier***

The other types of responses provided by children led to the creation of a category in which the presence of a wall is described by its feature of dividing spaces (Figure, 47). For instance, in one of the statements, the child said 'Walls exist to prevent entering wind and leaves or to avoid snow in the classroom' which is analyzed by highlighting two terminologies such as 'prevent' and 'avoid'. So, it can be said that the wall for this kid played the role of a barrier that prevents and avoids harsh weather in an indoor environment. The second type of response was

highlighting the existence of walls as ‘So that the light of the rainbow does not enter the classroom’ which is an imaginative and creative response, but the phrase ‘not enter’ was the keyword of being in the category of ‘wall as a barrier’. The existence of the same keyword in the phrase ‘There are walls because the rain and lightning do not come inside’ has led the phrase to take place under this category since both of the presented responses perceived a wall as a thing that is able to not allow things to enter/come. It is also apparent that when children think about the existence of walls in this way, they are completely aware that wall divides space inside and outside (a concept discussed by Relph). Lastly is the phrase ‘If there were no walls, everyone would want to eat food because it would smell’ which the child explained walls' presence as it’s potential to divide space and plays the role of barrier that does not allow the smell of the food go to another place. Some of the transcripts are as follows:

- *To prevent entering wind and leaves. 2. Answer: to avoid snow in the classroom*
- *So that the light of the rainbow does not enter the classroom*
- *If there were no walls, everyone would want to eat food because it would smell*
- *There are walls because the rain and lightning do not come inside*

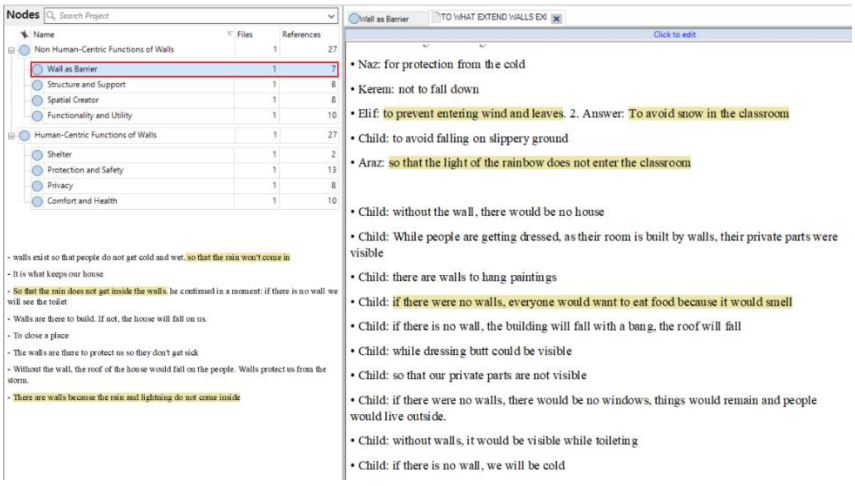


Figure 47. (Illustrates responses in sub-category of wall as barrier)

Source: Created by author by NVivo

✓ **Third question:** Do you know why school has walls?

This question was posed by the scholar during the communication process so it was not asked to all of the children. In fact, when the scholar has chosen to have a semi-structured interview with participants individually, this question was asked from 13 children who were willing to answer and communicate. The responses for this question are arranged as it is displayed in (Figure, 48) in four main clusters: functionality, protection, spatial creator, support structure.

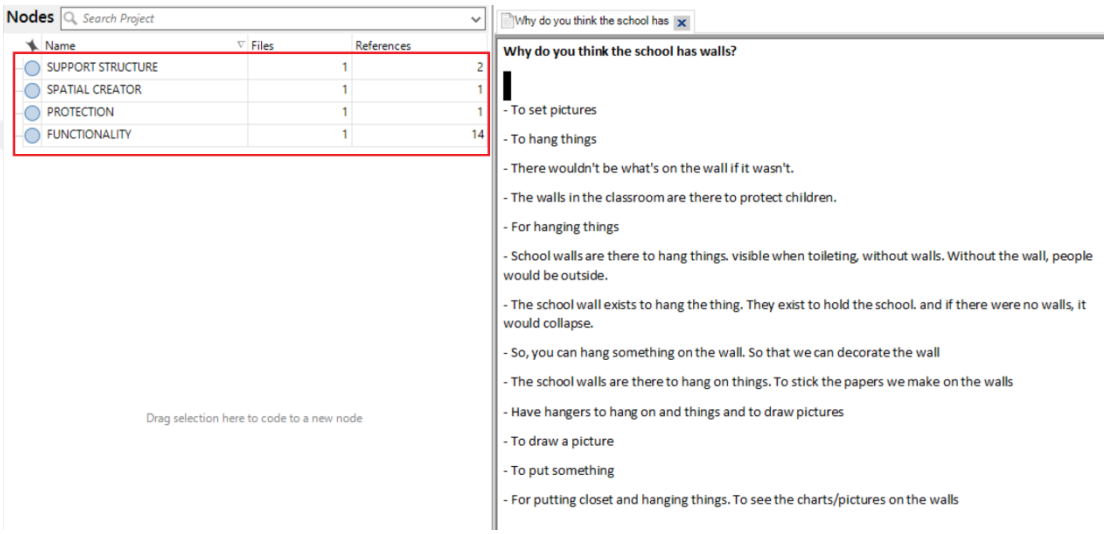


Figure 48. (Illustrates main clusters for the third question)

Source: Created by author by NVivo

- ***Functionality***

Most of the explanations to the question of 'why do you think schools have walls' take place in this category as the majority of children perceived walls' presence in school due to their functionality; their potential to carry/hold things on the walls of the classroom. For example, as it is illustrated in (Figure, 49), the most frequent used phrase by kids, explained the existence of walls 'to hold things on'.

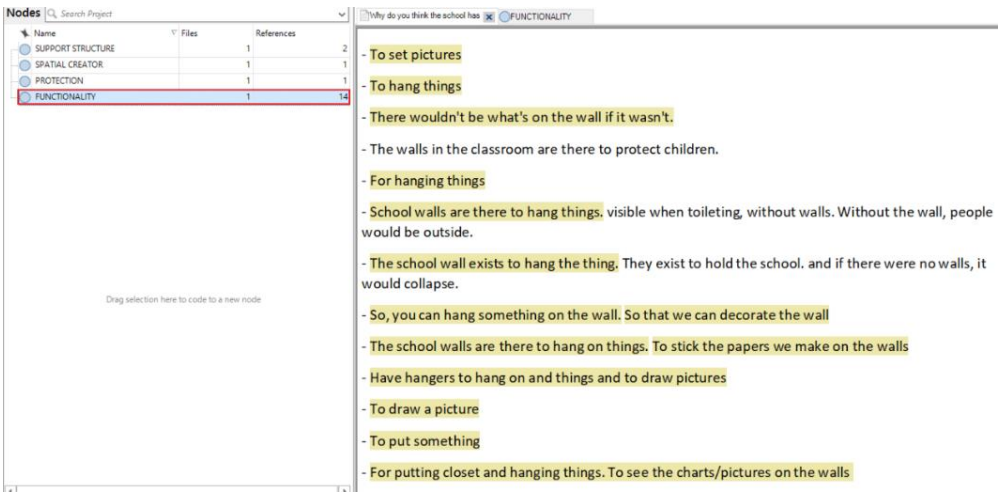


Figure 49. (Illustrates responses in the sub-category of functionality)

Source: Created by author by NVivo

- ***Support Structure***

One of the expressions elaborated that school walls exist because it is the vital component that holds the school and without walls, the school would collapse. This perception reveals child's cognition of the presence of walls in cooperation with its structural support feature. (Figure, 50)

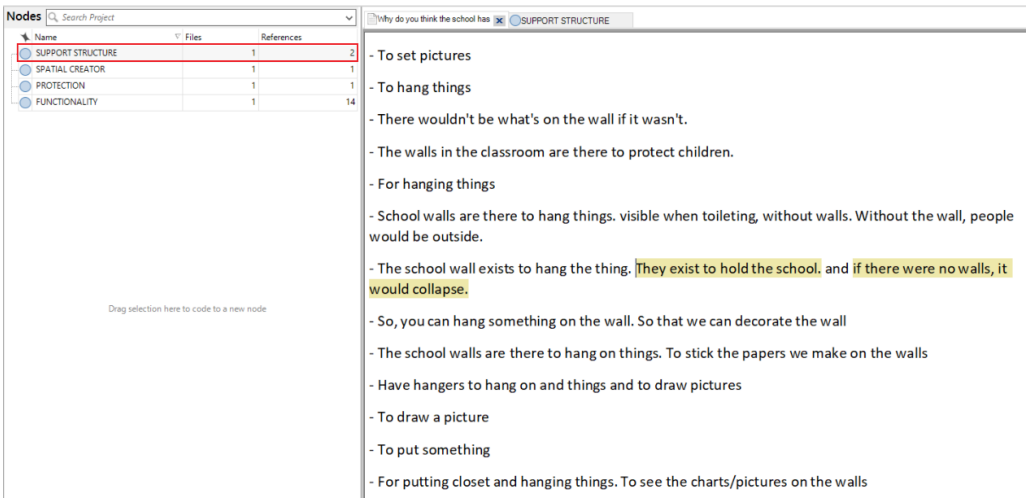


Figure 50. (Illustrates responses in sub-category of support structure)

Source: Created by author by NVivo

- ***Protection***

Protection is one of the reasons in child's mind as she/he responded to the question by emphasizing on the protection aspect of walls which causes children to feel protected. (Figure, 51)

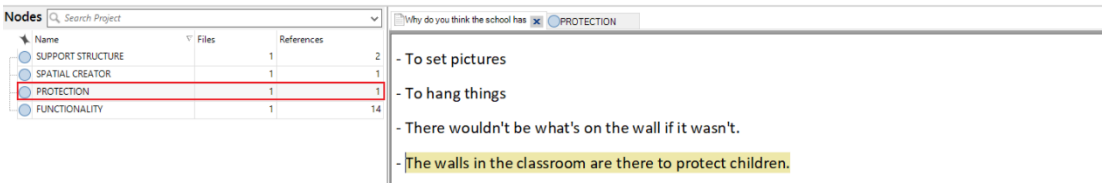


Figure 51. (Illustrates responses in sub-category of protection)

Source: Created by author by NVivo

- ***Spatial Creator***

One of the responses from transcripts of children contained a phrase with lots of information of school walls presence. Yet, this inquiry is attempted to respond every dimension of given explanation originated from children. Therefore, in the highlighted phrase in (Figure, 52), the phrase 'without walls people would be outside' is considered in the category of 'spatial creator' as the focus point in this statement is 'outside', so the child is aware that wall divides spaces of outer environment with indoor.

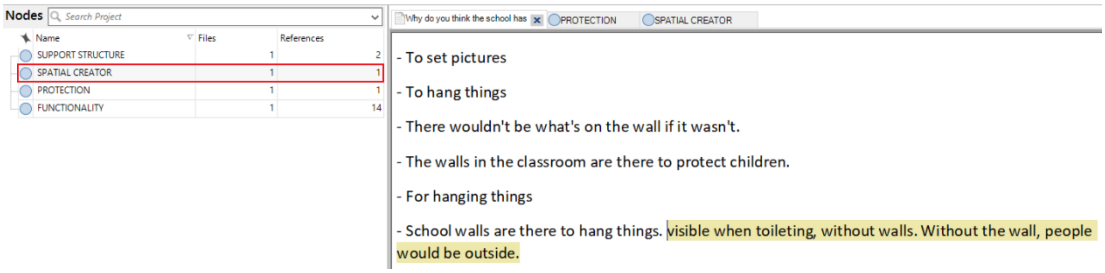
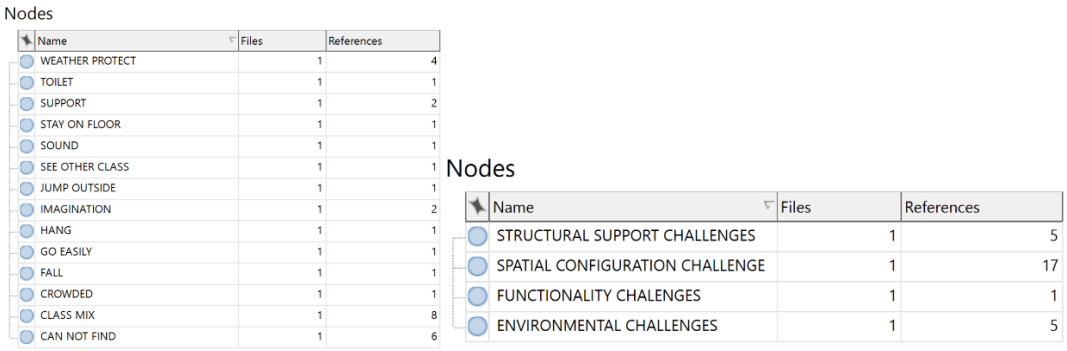


Figure 52. (Illustrates responses in sub-category of spatial creator)

Source: Created by author by NVivo

✓ **Fourth question:** What is your idea when you imagine there is no wall between classes?

Although some early categories have emerged as a result of analyzing all of the transcripts for this question, as shown in (Figure, 53, left figure), the created nodes are actually derived from the text's initial data by extracting significant keywords. Yet the developed version of gathered classifications has been created later as it is displayed in (Figure, 53, right figure). Actually, the question asked children to imagine if there were no walls between classes, so in the interview, the scholar showed exactly which wall, they have to delete in their mind. Consequently, as the thesis has focused only on interior walls so by looking precisely at the question it is apparent that children were not asked to consider the whole school environment without walls, rather the aim of the study was to analyze their responses in association with spatial divider walls.



Nodes

Name	Files	References
WEATHER PROTECT	1	4
TOILET	1	1
SUPPORT	1	2
STAY ON FLOOR	1	1
SOUND	1	1
SEE OTHER CLASS	1	1
JUMP OUTSIDE	1	1
IMAGINATION	1	2
HANG	1	1
GO EASILY	1	1
FALL	1	1
CROWDED	1	1
CLASS MIX	1	8
CAN NOT FIND	1	6

Nodes

Name	Files	References
STRUCTURAL SUPPORT CHALLENGES	1	5
SPATIAL CONFIGURATION CHALLENGE	1	17
FUNCTIONALITY CHALENGES	1	1
ENVIRONMENTAL CHALLENGES	1	5

Figure 53. (Illustrates initial categories in the left and developed clusters in the right for fourth question)

Source: Created by author by NVivo

- ***Spatial Configuration Challenges***

The highest number of responses regarding to partition wall absence is taken place in this category as most of the feedbacks in (Figure, 54), asserted on the challenges might happen after deleting divider wall in their mind.

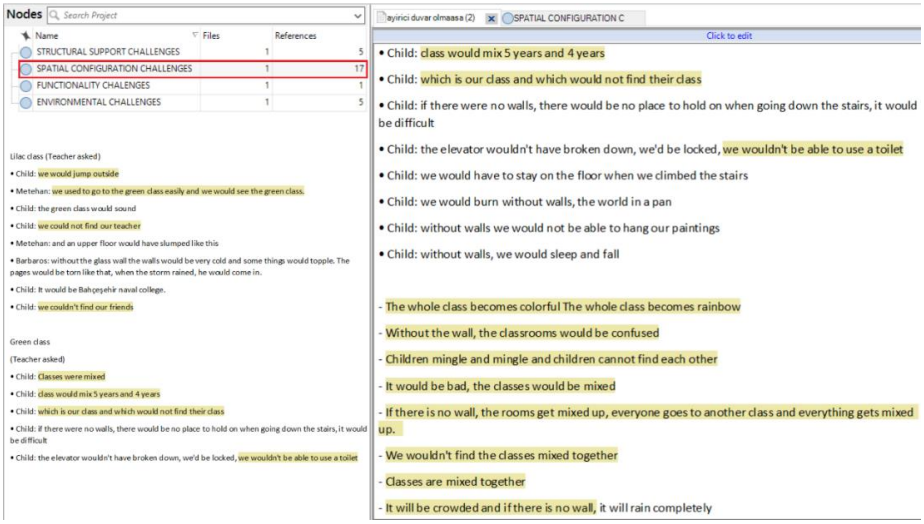


Figure 54. (Illustrates responses in sub-category of spatial configuration challenges)

Source: Created by author by NVivo

Some of the sample responses are as follows:

- *Classes get mixed up and can't find teachers*
- *It will be crowded and if there is no wall, it will rain completely*
- *we wouldn't be able to use a toilet*
- *we would go to the green class easily and we would see the green class.*

In the process of analyzing transcripts, there were many responses that were indicated by highlighting the phrase ‘mixing classes’ as the key part of explanations. So, all the phrases explaining about a change in the state of classrooms’ spatial configurations, are considered in this category. Thus, it can be concluded when children used their imagination of open-plan classrooms they were imagining and facing challenges with open-plan classroom’s spatial characteristics. Mostly they defined these struggles with not identifying and finding their classes and their own teachers. On the other hand, a child also said, "We wouldn't be able to use a toilet," which may not have been related to the question, but all of the children's responses were analyzed because they provided valuable insight. The examination of this statement was based on the phrase's focus on the crucial role of walls in creating a place like a toilet. Finally, there was an answer to the question distinct from others which said ‘we would go to the green class easily and we would see the green class’. This statement is expressed by a child in Lilac class that is in front of the green class.

The important terms that caused this phrase to take place in this category are ‘go easily’ and ‘see’ which emphasizes on the feature of wall to change the movement directions in space and changing in visibility of space.

- ***Structural Support Challenges***

Some of the responses that is all displayed in (Figure, 55), rather than paying attention to spatial space that could be changed while omitting a divider wall, made feedback by presenting some challenges in relation to the structural aspect of school building. This category includes children's responses explaining structural challenges such as ‘building would collapse’, ‘roof would collapse’ and etc.

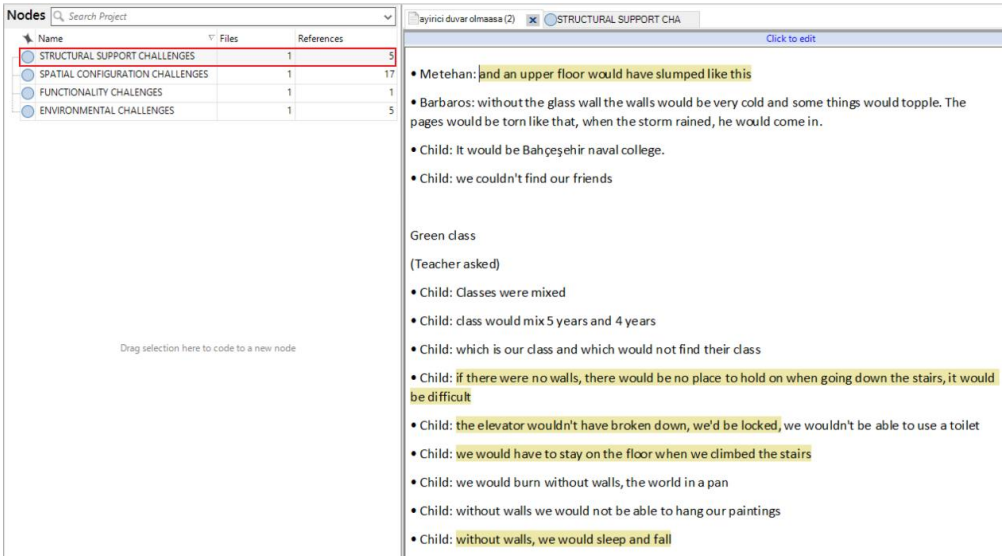


Figure 55. (Illustrates responses in sub-category of structural support challenges)

Source: Created by author by NVivo

- ***Environmental Challenges***

‘Environmental factors’ is the other category that emerged through analyzing pupils’ expressions and perceptions about the challenges might occur if there were no wall between children’s classes. The main keywords in this category extracted from the transcripts can be ‘sound’, ‘come in’, and ‘weather’ which all be considered as the struggles that might happen if there were no walls. (Figure, 56)

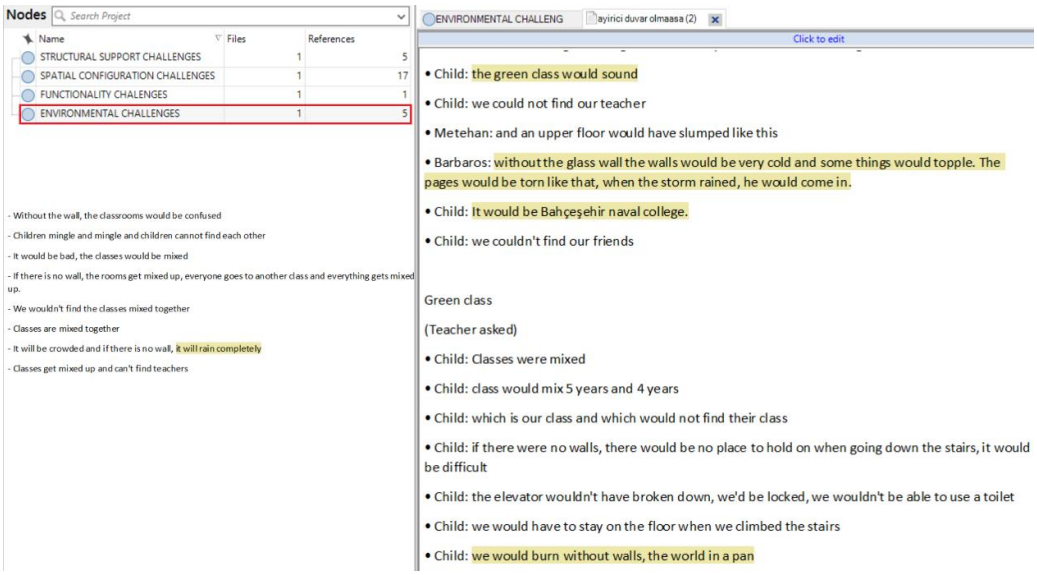


Figure 56. (Illustrates responses in sub-category of environmental challenges)

Source: Created by author by NVivo

- ***Functionality Challenges***

There was a response provided by a child which reveals the importance of wall's functionality feature as people can hold pictures or paintings on them. (Figure, 57)

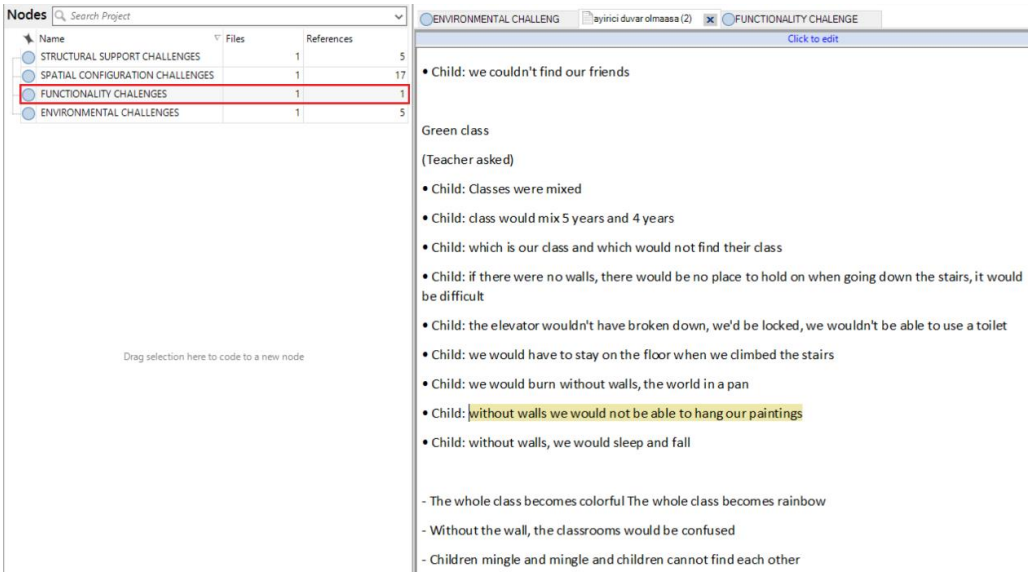


Figure 57. (Illustrates responses in sub-category of functional challenges)

Source: Created by author by NVivo

7.2 Data Analyzes Conclusion

According to Moustakas (1994), one of the major strategies used in this study is the use of "what" and "how" queries to allow students to convey their comprehension of the issue. The study's first inquiry was designed to uncover children's initial thoughts about walls by utilizing the "Word Association" method. Specifically, the question, "What comes to mind when you hear the word wall?". And following Moustakas all the questions for semi-structured interviews (Table, 3) designed as general to the special form of question. The first investigation looks into children's perceptions of walls in general. The second question dives deeper and seeks responses from children who, in addition to thinking about 'what' walls are, they must also consider 'why' walls exist. The next question probes further, focusing on the school as a particular place and exploring their thoughts on the walls of a school building. In fact, at this level, children have already considered the definition of walls and the reason for their presence in general; thus, the question looks into more detail and establishes a desire for children to offer an answer when she/he acknowledges the existence of walls along with an explanation for their presence in a specific place such as school. However, the last question delves into the core of their understanding of walls, shedding light on their perspective regarding the existence and absence of walls within their classroom environment. This inquiry occurs after they have already examined the definition, existence, and prevalence of walls in the school context.

Questions One	What comes into your mind when you hear the word ‘wall’?
Questions Two	Do you know why there are walls?
Questions Three	Do you know why school has walls?

Questions Four	What is your idea when you imagine there is no wall between classes?

Table. 3. (Illustrates questions of semi-structure interview)

Source: Created by Author

The following Table 4, and Figure 58, illustrate the distribution of responses across all categories for all four questions posed in the study and provide a comprehensive overview of how participants engaged with each question and the corresponding number of responses within each category.

First question	Object Associated	36
	Behavioral Associated	21
	Wall-Characteristic Associated • Functionality of Walls • Physical Characteristic	14
	Place Associated	10
Second question	**Human-Centric Factors**	27
	Protection and Safety	13
	Comfort and Health	10
	Privacy	8
	Shelter	2
	Non-Human-Centric Factors	27
	Functionality and Usage	10
	Spatial Creator	8
	Structure and Support	8
	Wall as Barrier	7
Third question	Functionality	14
	Support Structure	2
	Protection	1
	Spatial Creator	1
Fourth question	Spatial Configuration Challenges	17
	Structural Support Challenges	5
	Environmental Challenges	5
	Functionality Challenges	1

Table 4. (Illustrates all the categories and number of responses to four questions)

Source: Created by Author

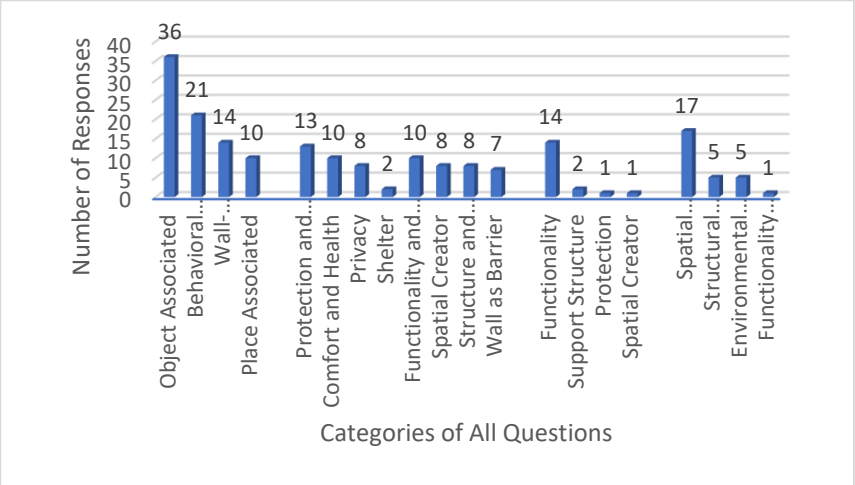


Figure 58. (Illustrates all the categories and number of responses to four questions)

Source: Created by Author

However, by reviewing all the categories at hand, some similarities and differences derived the attention. Therefore, by evaluating all findings, the study succeeded in showing children's perceptions of walls and school-walls in an organized/categorized manner; the findings of this phenomenological exploration were organized into main clusters and categories based on the children's responses to the four questions. By carefully scrutinizing each category, the next attempt was to examine each category by focusing on which (1) differ from one another, (2) are the same, (3) overlap with each other, and finally, after completing all three processes, (4) which can be a sub-category of a big category.

By applying these four steps while examining the existing 20 categories as demonstrated in Table 4, three main categories are developed as highlighted and shown in Table 5, and Figure 59; "Object Associated," "Behavioural Associated," and "Wall-Characteristic Associated."

Yellow shading is used to indicate responses falling within the "Object-Associated" category, while pink highlights represent the "Behavioral-Associated" category. Green shading is applied to responses categorized under "Wall Characteristic," which is a broad category encompassing various subcategories.

First question	Object Associated	36
	Behavioral Associated	21
	Wall-Characteristic Associated • Functionality of Walls • Physical Characteristic	14
	Place Associated	10
Second question	Protection and Safety	13
	Comfort and Health	10
	Privacy	8
	Shelter	2
	Functionality and Usage	10
	Spatial Creator	8
	Structure and Support	8
	Wall as Barrier	7
Third question	Functionality	14
	Support Structure	2
	Protection	1
	Spatial Creator	1
Fourth question	Spatial Configuration Challenges	17
	Structural Support Challenges	5
	Environmental Challenges	5
	Functionality Challenges	1

Table 5. (Illustrates all the same and different categories by colors)

Source: Created by Author

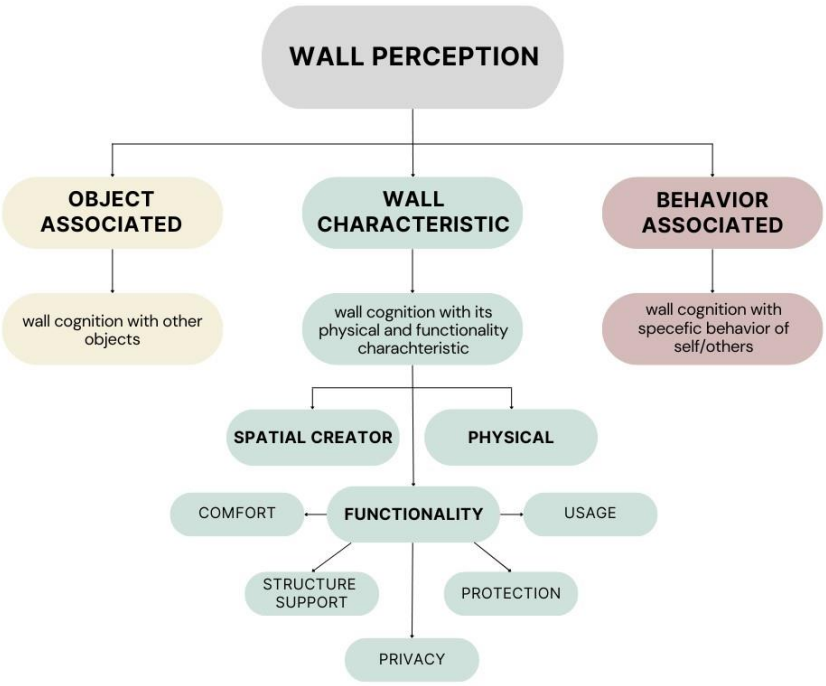
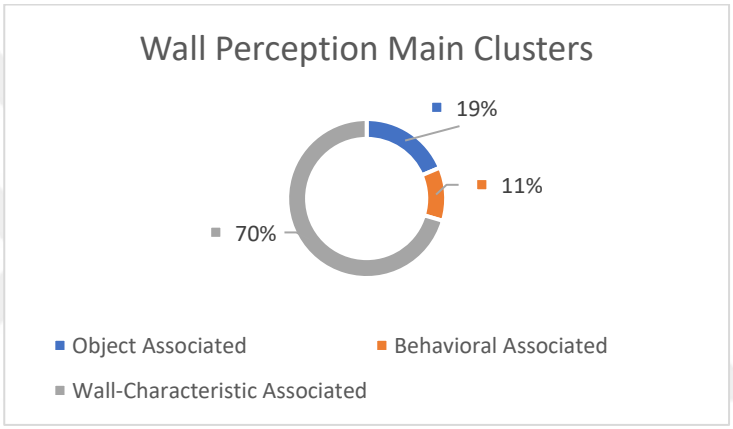
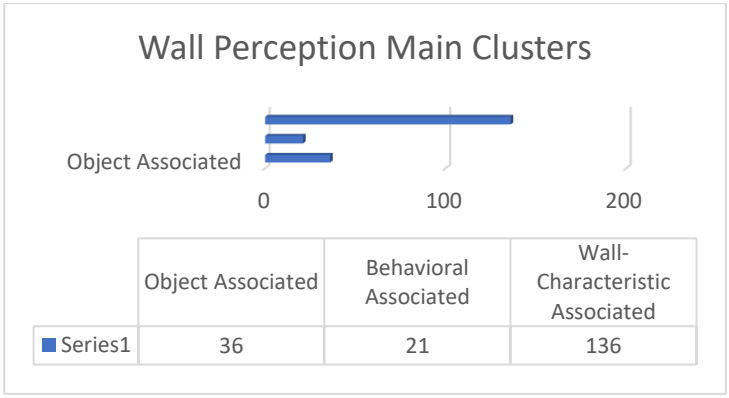


Figure 59. (Illustrates the main clusters and categories of wall perception)

Source: Created by Author

According to the responses derived from pupil transcripts, as shown in (Figures, 60, 61), approximately 70% of the responses point to a certain characteristic of the wall that overlaps most of the response categories and breaks down this cluster into subcategories: the responses that (1) refer to the physical characteristic of a wall, (2) refer to the specific function of a wall, (3) refer to its characteristic to make a place. This is while some responses of them acknowledge walls with another object in associate with it which includes 19% of total responses. Another notable group of children with 11% responses conceptualized walls in terms of specific behaviors or actions, either their own actions near walls or the actions of others involving walls.

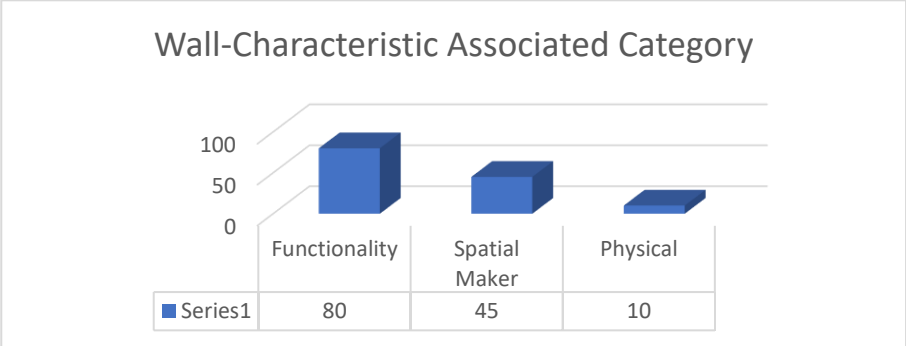




Figures 60,61. (Illustrates the percentage and number of total responses in three main categories)

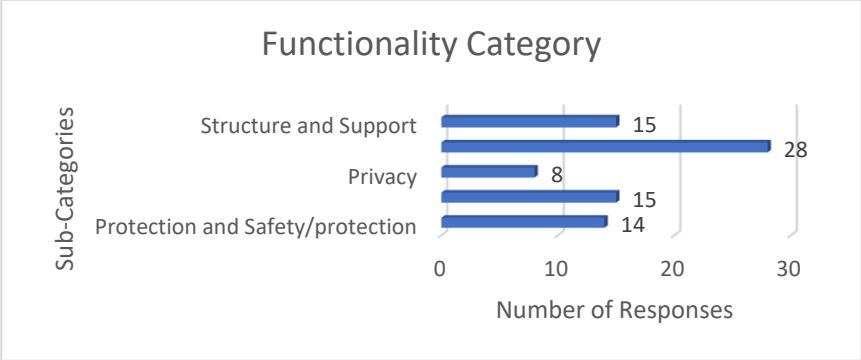
Source: Created by Author

The divisions of the ‘’wall-characteristic’’ cluster provided children with more specificity in their perceptions divisions in three sub-categories: "Functionality", "Spatial Maker", and "Physical" (Figure, 62).



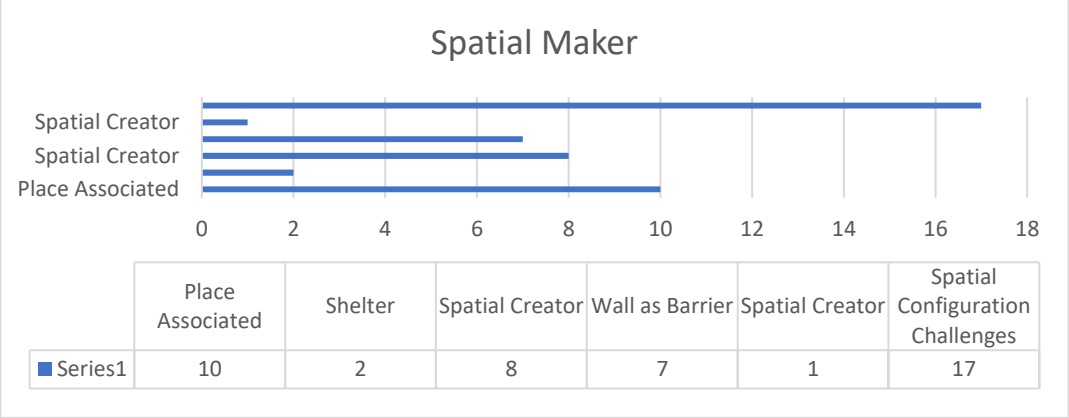
Figures 62. (Illustrates the categories and number of responses in wall-characteristic category). Source: Created by Author

(Figure, 63) demonstrates the "Functionality" subcategory encompassing various aspects of how children perceive walls, including their role in providing protection and safety, ensuring comfort and health, maintaining privacy, serving as a structural element in the classroom, and offering support. The "Spatial Maker" subcategory as illustrated in (Figure, 64), is focused on the role of walls in creating a sense of place, shelter, spatial configuration, and as barriers. In the category of wall-characteristic, the "Physical" subcategory appeared to be more abstract and less frequently mentioned compared to the functionality of walls and their potential for spatial making.



Figures 63. (Illustrates the categories and number of responses in wall-characteristic category. In the sub-category of functionality)

Source: Created by Author



Figures 64. (Illustrates the categories and number of responses in wall-characteristic category. In the sub-category of functionality)

Source: Created by Author

	Main Clusters	NR	P	Sub-Categories	NR	P	Sub-Categories	NR	TNR
Sub-categories	Object Associated	36	19%	x	x	19%	x	36	193
	Behavioral Associated	21	11%	x	x	11%	x	21	
	Wall-Characteristic Associated	136	70%	Functionality	80	42%	Protection and Safety/protection	14	
							Comfort and Health/Environmental Challenges	15	
							Privacy	8	
							Functionality/Usage	28	
							Structure and Support	15	
				Spatial Maker	45	23%	Place Associated	10	
							Shelter	2	
							Spatial Creator	8	
							Wall as Barrier	7	
							Spatial Creator	1	
							Spatial Configuration Challenges	17	
				Physical	10	5%	x	10	

Table 6. (Illustrates all the categories, sub-categories, percentages, and number of responses)

Source: Created by Author

P= percentage

NR= number of responses

TNR= total number of responses

Table 6, provides a comprehensive breakdown of the responses obtained in the study, totalling 193 in number. It categorizes these responses into different categories and subcategories, accompanied by the respective percentage distribution within each category. Notably, the highest percentage of responses falls within the "Wall-Characteristic Associated" category, representing 70% of the total responses. Additionally, the "Object Associated" category accounts for 19% of the responses, while the "Behavioral Associated" category comprises 11% of the total responses. This table serves as a valuable tool for understanding the distribution and emphasis of responses in the study, offering insights into how participants conceptualized and related to the topic under investigation.

In conclusion, this research employed a qualitative methodology rooted in phenomenology to gain deep insights into the perceptions of walls among young students aged 5-6 in a preschool environment. Phenomenology, characterized by its suspension of preconceived notions and commitment to viewing phenomena from the participants' perspectives, enabled a profound exploration of the children's experiences. Through techniques such as phenomenological reduction and bracketing, the study revealed the significance of walls in the lives of these young students, offering valuable contributions to pedagogy, educational psychology, and architecture. The choice of a semi-structured interview method was well-aligned with Piaget's theory of cognitive development, recognizing the imaginative nature of children in this age group. This approach allowed for flexibility and open-ended responses, effectively capturing the unique and subjective perspectives of the children.

CHAPTER 8

DISCUSSION AND CONCLUSIONS

Discussion

Throughout this investigation, the phenomenological approach stands as a cornerstone. In this realm, Husserl introduced the innovative concept of "intentions/intentionality" which refers to constituting intentional objects. This concept implies that the mental acts and thoughts of a human directed towards an object, are integral components of the intentional object itself. Thus, when comparing this concept to the context of this study, it can be said that all of the findings from responses of children aged 5-6 are demonstrations of their thoughts, emotions, and perceptions directed toward the 'school wall'. This facet highlights the inseparability of the child's subjective experiences and the intentional object they engage with daily which is also connected to their lived experiences. In fact, Phenomenology seeks to understand how individuals perceive and make sense of the world around them (Smith, 1989; Seamon, 2002). Besides, the idea of intentionality refers to the directedness of consciousness towards objects or experiences in the external world (Smith, 1989). So, by referring to the four main features of the intentionality concept, it is possible to have a phenomenological insight into how individuals, including children aged 5-6 in this study, interact and interpret the school-wall as a component of their surroundings. In this study, however, because intentionality and its conceptual frameworks focus on a person's consciousness, they can partially be linked to Piaget's theory of cognitive development because it emphasizes human consciousness, particularly in children.

For instance, "objectivation" is a concept in the intentionality concept that refers to the process by which sensory input gathered from numerous objects and stimuli in the external world converge and relate to the intentional object. In a nutshell, it explains how our senses gather raw data from our environment and shape this sensory input into a cohesive intentional object. "objectivation" in the context of this thesis attempts to figure out how young children, aged 5-6, transform sensory data from their environment into meaningful intentional objects. This process of transforming sensory input into meaningful objects is closely related to the cognitive development of

children. Jean Piaget's theory of cognitive development, as discussed in the earlier texts, emphasizes how children construct knowledge and understanding of their surroundings (Piaget, 1997). In fact, in both theories, understanding how these kids interact with their educational environment begins with this conversion of sensory data into a meaningful object.

So, when it comes to 'school wall', the main attention point is how it evolves from being a physical barrier to an intentional object with the capacity to evoke perception and thought. Actually, this illustrates how the physical environment, such as a school, plays a role in shaping children's cognitive development (Moore, 1987).

Besides, the concept of ‘’identification’’ in "intentionality" is focused more on understanding how individuals identify and comprehend objects and it is central to the study of consciousness. This is also highly related to cognitive development in children aged 5-6 as they are not just perceiving isolated sensory data but are actively identifying and comprehending the 'school wall' as part of their broader cognitive framework. Cognitive development in children involves the growth of intelligence as they interact with their environment. Jean Piaget's theory suggests that children progressively learn and understand things as they mature (Piaget, 1997).

In fact, in this study phenomenology can aid in underscoring the subjective nature of kids' perception and intentionality, emphasizing how children actively engage with walls. Yet, Piaget's theory adds a cognitive layer, demonstrating how this engagement involves mental processes; for instance, when he presented the concepts of assimilation and accommodation. When bridging these two perspectives, there can be an interplay between cognitive and phenomenological dimensions of human experience. In Piaget's framework, assimilation involves integrating new information into existing cognitive schemas. When a child encounters an unfamiliar object or situation, they attempt to assimilate it into their pre-existing mental structures. From a phenomenological standpoint, this assimilation can be seen as the child's initial perception of the unfamiliar phenomenon. It's the moment when the child first encounters the new object and begins to make sense of it within their subjective world. Accommodation, in Piaget's theory, refers to the modification of existing schemas to accommodate new information. So as individuals interact further with the unfamiliar

phenomenon and engage in reflective thought, the accommodation evolves. The process of accommodation, in this context, represents a shift in how the individual perceives and understands the phenomenon based on their ongoing interactions and reflections. By referring to Chapter 7 (Findings), the results from responses of children show that children aged 5–6 were all aware of walls and school walls; the wall as an intentional object was not an unfamiliar object to them, and every participant provided a subjective response to each of the four questions asked during the semi-structured interview. It can be claimed that assimilation partially occurred in kids between the ages of five and six. However, because accommodation takes longer to achieve a definite and stable form, it is not possible to say with certainty that children between the ages of 5 and 6 have fully attained this process because it is thought that this is a continuing process in the case of preschool children.

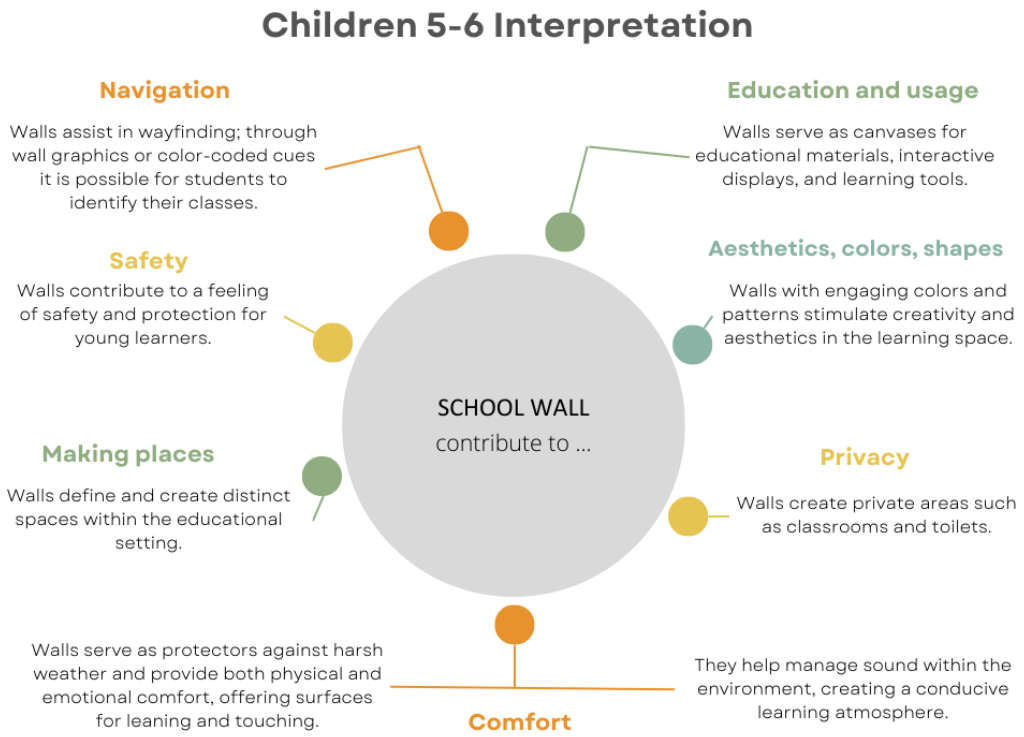
Nevertheless, it is wise to note that while exploring children's perception of school walls not only every child's own consciousness and their subjective experiences from the perception, but also there are other external factors which can contribute to shape their perception of walls. One's personality and perception of the world can be affected by environmental, social, cultural, parental, and genetic backgrounds, which are discussed in "Chapter 3: Human Perception and Physical Environment." For instance, it is imperative to acknowledge that the diverse cultural and societal contexts in which children grow up can significantly shape their perceptions of school walls, particularly in terms of their form, color, and materials. This can be exemplified by the disparities in wall construction materials between different regions and cultures.

For example, in traditional Persian architecture, bricks constitute a prominent and distinctive component of wall construction. Consequently, a child raised in such an environment may associate walls with the materiality and intricate patterns of bricks. In contrast, in regions where wood is a prevalent material for constructing walls, a child may predominantly relate walls to the tactile quality and visual characteristics of wood. Therefore, when posed with a question like, "What comes to your mind when saying 'wall'?" children from these contrasting backgrounds are likely to offer distinct responses, reflecting the materials most commonly used for wall construction in their respective societies—such as brick and wood. Indeed, it is imperative to acknowledge that the diverse cultural and societal contexts in which

children grow up can significantly shape their perceptions of school walls, particularly in terms of their form, color, and materials.

These variations in early experiences were seen while analyzing the data gathered from transcripts of children when they were asked to respond to the first question of semi-structured interview "When you first hear the word wall what comes to your mind?". For instance, some responses like "white", "white cat", and "white bag" can be recognized as the existing pattern that relates the wall with the color white and it demonstrates how children gain data about an object (wall) in their minds during the process of "assimilation and accommodation" of cognitive development.

In general, all of the children's answers to the questions revealed that their understanding of school walls depends on the functional aspect of walls; and the contributions that walls provide in a learning environment. Followingly, Figure 65 demonstrates how kids between the ages of 5 and 6 perceive school walls and what they believe these structural elements contribute to.



Figures 65. (Illustrates the many indicators gathered from the responses of the children regarding the function of walls in the educational setting)

Source: Created by Author

Conclusion

In the realm of architecture and construction, walls have long served as the fundamental components that define spaces, outline boundaries, and provide the structural framework for various types of buildings as well as serving to outline different spaces, provide shelter, provide indoor comfort, etc. Yet, beyond their physical presence, walls hold a profound significance in terms of shaping the environments they enclose. After the house, the first location that every child attends during their early years is school, where they attend from an early age and spend the majority of their time at home and at school. Thus, one of the most important places where the influence is more noticeable is in educational settings, particularly in schools and preschools, where children grow their knowledge and education in a way that their personalities become formed there. Besides, in the phenomenological approach attempts to identify shared perceptions and experiences (Creswell's, 2007), so in this study "wall" or "wall perception" is considered as a phenomenon that all students encounter. Since, in this context, the significance of the 'educational place' and its influence on the cognitive and perceptual processes of young learners cannot be overstated. This study aimed to explore the lived experiences of pupils aged 5-6 of 'school-walls' from a phenomenological perspective. While earlier studies have looked at the architectural aspects of walls, this study adopts a fresh perspective by examining how kids in an educational setting understand walls in their own unique ways.

However, by referring to "Chapter 4. Educational Environment and Children", it can be recognized that in the Turkish educational system, kids of various age groups and needs are accommodated within the same standardized school building, and they especially share the same structure from the ages of 5 to 13. This consolidated approach spans the Early Childhood, Primary, and Lower Secondary stages, encompassing children between 5.75 and 13 years old in the same building layout and configuration. While this uniformity simplifies administrative logistics, it raises pertinent questions regarding the suitability of a one-size-fits-all educational environment. As children of varying ages possess distinct learning needs and developmental stages, the shared facilities may not adequately cater to their individual requirements. This standardized approach, though convenient, may inadvertently

hinder the provision of tailored education, and may not be able to meet the demands of all age groups, which could potentially have a negative impact on students' overall learning experiences.

According to Piaget's theory in ‘’Chapter 3. In 3.3.1. Cognitive Development of Child’’, children between the ages of 5 and 6 are in the preoperational stage of cognitive development, during which they have not yet established any specific and concrete ideas that all people know and accept. As such, "wall" as an integral element of standardized school construction has been investigated among children in this age group. Actually, in the investigation of walls, this thesis intended to figure out how a human before reaching absolutes and concrete mind, might interpret walls. As a result, the preoperational stage is chosen.

The examination of the findings' outcomes reflects the idea that the children in the study did not perceive walls solely as physical barriers that define the classroom space. Instead, the children's responses revealed a more nuanced and multifaceted understanding of walls. The children associated walls with various functions and attributes beyond their physical presence. For example, they linked walls to concepts such as protection, safety, comfort, privacy, spatial organization, and even support. These associations demonstrate that, in the eyes of the children, walls serve not only as structural elements but also as contributors to their overall experience within the preschool environment.

- ✓ What does 'wall' mean to users?

Through a phenomenological analysis of responses from children aged 5-6, the concept of a 'wall' reveals a rich tapestry of meanings beyond its physical confines. The predominant theme emerging from their responses involves associations of walls with other objects, encompassing connections to ceilings, windows, sofas, and more. Additionally, children often relate walls to specific behaviors and actions, whether their own or those of others. Lastly, a notable portion of responses reflects their cognitive processes, wherein walls are perceived in terms of their physical attributes, functionality, and their role in shaping the environment as spatial markers. To children, a 'wall' encompasses not just a physical barrier but a multifaceted concept. It signifies a range of associations, including connections to other objects, specific behaviors, and

actions, as well as its physical attributes, functionality, and role in shaping the environment as a spatial marker.

- ✓ What is the purpose of the existence of walls in the school environment?

The purpose of the existence of walls, as perceived by children aged 5-6, is a multifaceted concept that encompasses various dimensions. In their responses, children reveal a deep understanding of walls, viewing them as more than mere physical barriers. They associate walls with human-centric purposes, such as protection and safety, comfort, and privacy. Walls are seen as protectors against external elements like rain and cold, ensuring a secure and comfortable environment. Additionally, children recognize walls as creators of private spaces, preventing visibility in situations like toileting or dressing up. Furthermore, walls are perceived for non-human-centric purposes, for instance, they are detected as vital components in the structural support of buildings, preventing collapses and providing stability. They also serve as spatial creators, defining the boundaries between indoor and outdoor spaces. Walls act as barriers, preventing the entry of wind, rain, or unwanted smells. Overall, the purpose of walls, according to these young minds, extends beyond physical separation; it encompasses safeguarding, comfort, privacy, structural integrity, spatial definition, and barrier functions.

In the school environment, children attribute the existence of walls primarily to their functionality. According to their responses, walls in schools serve the purpose of holding things, such as posters, artwork, and educational materials. This utilitarian view suggests that children perceive school walls as practical elements within the classroom, facilitating the organization and display of educational content. Additionally, some children acknowledge the role of school walls in providing structural support, preventing the school from collapsing. This understanding reflects their recognition of walls as essential components of a building's stability. Protection is another aspect emphasized by some children, as they see school walls as ensuring their safety within the educational environment. Finally, a few children recognize school walls as spatial creators, understanding that walls demarcate the boundaries

between indoor classroom spaces and the outside world. Overall, in the context of schools, walls are primarily seen as functional elements that facilitate education.

- ✓ What is the role that school walls play within a school context?
- ✓ How do school walls support the school?

The findings from children regarding the role that school walls play within a school context highlight several crucial aspects. Firstly, children perceive school walls as spatial dividers that separate different classes. Removing these walls would lead to spatial configuration challenges, with classes getting mixed up and students struggling to find their teachers. Secondly, school walls are seen as providing structural support to the building. Children believe that if these walls were absent, the building itself could collapse, emphasizing the role of walls in maintaining the school's structural integrity. Additionally, walls act as sound barriers, helping to control noise levels and maintain a conducive learning atmosphere. Environmental factors, such as weather conditions, were also cited by children as potential challenges if walls were absent, demonstrating that walls serve as protective barriers against the elements. Lastly, the functionality of walls was highlighted by one child, emphasizing that walls provide a surface for hanging pictures and paintings, contributing to the school's aesthetics. In summary, children's perceptions highlight that school walls serve as a canvas to illustrate/hang on pictures and school material, as vital spatial dividers, structural supports, and functional elements within the school environment, with their absence leading to a range of challenges and disruptions.

It is notable to consider, the responses of the children, it becomes evident that they have a limited understanding of architectural concepts, including open-plan schools. Their perceptions are largely shaped by the physical and functional attributes of walls within their school environment. This suggests that the concept of open-plan schools, characterized by fewer walls and more open spaces, may be challenging for young children to grasp. Additionally, the responses regarding the absence of walls between classrooms highlight the potential challenges and disruptions such a design could pose to the learning environment. It underscores the importance of thoughtful

design in open-plan schools to mitigate these concerns and ensure a conducive atmosphere for learning.

In general, participants of this study did not have prior knowledge of the open-plan school concept and likely had not seen buildings without walls, and they offered imaginative views about open-plan schools. In their imaginative constructions, they often focused on practical aspects, such as how classrooms would function without traditional walls, and they imagined their classroom without walls while they were surrounded by walls. Since they lacked direct exposure to such architectural designs, their perspectives were largely shaped by their imaginative capabilities. Their perceptions, as expressed during the research, suggest that they had to rely on their creative thinking to picture open-plan schools. Children often filled this knowledge gap by envisioning open-plan schools as spaces where classrooms were less defined, causing challenges in terms of class identification and teacher location. Their views underscore the need for effective communication and orientation strategies in open-plan schools to help students navigate and thrive in such spaces.

As a result, it is obvious that it is essential to prioritize the design approaches that will provide creative contributions to the formation process of the space perception of the younger students. Through the examinations regarding the concept of the wall, the research concluded that walls carry multifaceted implications concerning their impact on the formation of space perception in this specific demographic (preschool children). It cannot be overstated the significance of prioritizing design approaches in educational spaces. Young students, especially those in preschool, are in a formative stage of cognitive and perceptual development, the physical environment in which they learn plays a pivotal role. Traditionally, walls are seen as physical dividers, yet this study delved deeper, revealing that they hold multiple layers of meaning for preschool children aged 5-6. These meanings extend beyond the merely physical; they encompass behavioral, and emotional events with walls in addition to referring to the wall itself. Thus, educational spaces should not be viewed as neutral containers but as dynamic environments that actively contribute to the cognitive and perceptual development of young students. The study heightened awareness of how design alternatives, including the role of walls, impact the formation of space perception in

preschool children. This insight, in turn, may lead to more meaningful and successful design approaches, regarding to age group of children and can also contribute to improving these young learners' educational experiences.

To summarize, the analysis of the data presented in Table 6 reveals that children aged 5-6 tend to perceive walls through three primary lenses. Their interpretations encompass associations between walls and other objects, observations of specific behaviors exhibited around or in proximity to walls, and considerations of the features and characteristics of walls themselves. Of particular significance is the finding that the majority of responses, nearly 70%, revolve around the characteristics of walls. This underscores the central role that the physical attributes of walls play in shaping how these young children perceive and relate to them.

Analyzing how children interpret walls based on their features and characteristics provides us with more nuanced insights into their perceptions. Notably, the functionality of walls emerges as a paramount attribute, indicating that children primarily understand walls through what they can do and what the purpose of their existence is. This includes functions like providing safety and protection, privacy, comfort, usage, and building structural support. However, it's important to recognize that other factors, such as a wall's physical attributes like color, texture, or shape, also influence how these children perceive and interact with this architectural element. Furthermore, the view that walls are the components that create distinct spaces and places within the environment is another crucial aspect of how children conceptualize walls. The spatial-making attribute of walls includes some features that highlight walls play a role as a space divider, or defining different areas and adding to the richness of their spatial awareness. For example, when children understand walls as the defining element of a space, like a classroom, or when they see walls as integral to creating shelter and delineating areas.

In conclusion, children aged 5-6 perceive walls primarily through their characteristics, with functionality and spatial definition being key elements in their understanding, as well as their physical attributes, emphasizing the significance of walls in shaping their perceptions of the environment. Focusing on Figure 65, several

noteworthy insights can be derived from students' interpretations of school walls as follows:

- Children understand walls as offering privacy, so incorporating walls or partitions for specific activities like reading books can be advantageous.
- Children view walls as sources of comfort, providing shelter from extreme weather conditions. Moreover, based on observations, they require walls in certain spaces to lean on, especially when waiting. For instance, during toilet breaks, they commonly lean against the walls while waiting for their friends to finish.
- Based on observations, it's apparent that children aged 5-6 frequently engage with walls, particularly corridor walls, through tactile interaction. They also tend to explore their school environment through touch. To create environments conducive to this natural behavior, architects should consider using materials that are child-friendly and encourage tactile exploration. Walls with textured surfaces or interactive features can entice children to touch and explore, fostering sensory learning experiences. This physical interaction with the walls may even lead to a sense of emotional attachment to their school surroundings.
- Children in this age group perceive walls as sources of safety and protection. Therefore, when architects are planning open-plan layouts or considering the removal of walls, it's crucial to take into account the children's need for a sense of safety and security.

Walls should serve as more than physical barriers. So given established a clear understanding of their general interpretation of walls and their specific perceptions of school walls within the environmental context, the following section presents a set of recommendations or a design guide for architects as following:

- Pedagogical Alignment (PA):

Collaborate with educational experts to align wall designs with pedagogical goals.

- Educational Integration (EI):

Walls can be designed to incorporate educational elements. For example, they can feature educational artwork, interactive displays, or whiteboards for learning activities.

- Aesthetics and Creativity (AC):

Walls can contribute to the aesthetics of the space and inspire creativity. They can be designed with engaging colors, patterns, or imagery that stimulate children's imagination or even differentiations in shape.

- Privacy and Comfort (PC):

Create semi-private spaces for concentration, relaxation, or quiet activities.

Consider sound management for comfort (e.g., acoustic design).

- Sensory Stimulation (SS):

Use child-friendly materials that encourage touch and exploration.

Incorporate textured surfaces or interactive elements for sensory learning.

- Waiting Areas (WA):

Implement wall-like elements or partitions in spaces where children have to wait (e.g., in front of toilets, and corridors).

- Wayfinding and Navigation (WN):

Integrate walls into wayfinding strategies (e.g., wall graphics, color coding for navigation).

- Adaptability and Flexibility (AF):

Design walls that can adapt to changing educational needs.

Use wall systems that allow for flexibility in space configuration as educational requirements evolve.

- Safety and Security (SS):

Consider the need for a sense of safety and security in open-plan layouts or when removing walls.

There can be also some further proposals to envision walls and partitions as active, responsive tools within a built environment. They can enhance education, entertainment, and various aspects of human interaction by transforming passive architectural elements into dynamic and adaptable features.

Sensory-Multifunctional Walls: These walls can be designed to be touch-sensitive and serve multiple purposes, especially in educational settings for children. Architects and designers can incorporate touch-sensitive surfaces that respond to children's interactions, turning walls into interactive learning tools. For instance, these walls can be used for educational games, answering questions, or exploring virtual environments. It directly addresses the "Sensory Stimulation (SS)" aspect by incorporating touch-sensitive surfaces that encourage interaction and sensory learning. Moreover, it integrates "Educational Integration (EI)" by using these walls as interactive learning tools, fostering engagement and aligning with pedagogical goals. This concept also contributes to "Aesthetics and Creativity (AC)" by providing engaging and visually stimulating elements in the environment.

Smart Partitions: The proposal for smart partitions involves using innovative technologies like adjustable transparency walls, holographic projections, and adaptable shapes and sizes to create flexible, open-plan spaces. It supports adaptability and flexibility in space configuration (AF), enables the integration of educational elements through holographic projections (EI), and can enhance the aesthetics of the space, stimulating children's imagination (AC). Moreover, it contributes to privacy and comfort by allowing for partitioning when needed (PC), and it can incorporate sensory elements through interactive holographic displays (SS). Overall, smart partitions offer a multifaceted solution that addresses various aspects of child-friendly design while embracing modern technology for educational and spatial benefits.

Modular Wall Systems: Implementing modular wall systems that allow for easy reconfiguration of classroom layouts. These walls could have sections that can be moved, folded, or adjusted to create different learning spaces, from traditional classrooms to open collaborative areas. These panels can pivot, slide, or fold, allowing the wall to change its configuration. For example, a straight wall could transform into a curved or zigzagged partition with ease. By using these systems, architects can create

versatile learning spaces that can easily transform to suit various educational needs. This not only aligns with the pedagogical goals but also allows walls to serve as more than physical barriers by enabling quick adjustments to privacy levels, collaboration opportunities, and overall spatial configurations. Consequently, it enhances the learning environment's functionality, aesthetics, and adaptability, catering to the specific needs and perceptions of children aged 5-6.

Overall, the idea is to transform walls from passive architectural elements into active, responsive tools that can enhance education, entertainment, and various other aspects of human interaction within a built environment.

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